



Appendix F - Cumulative Impact Assessment

1 Background

1.1 Introduction

The cumulative impact of development should be considered at both the Local Plan making stage and the planning application and development design stages.

Paragraph 166 of the National Planning Policy Framework (NPPF, 2023) states:

'Strategic policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards.'

Appropriate mitigation measures should be undertaken to prevent exacerbation of flood risk, and where possible the development should be used to reduce existing flood risk issues, both onsite and downstream of the development.

To understand the potential impacts of future development on flood risk in High Peak Borough, catchments were identified where development may have the greatest potential effect on flood risk, and where further assessment would be required within a Level 2 Strategic Flood Risk Assessment (SFRA) or site-specific Flood Risk Assessment (FRA). To identify the catchments at greatest risk, various factors were considered, including the potential change in developed area within each catchment and communities sensitive to increased risk of surface water and fluvial flooding, alongside evidence of historic flooding incidents. Where catchments have been identified as sensitive to the cumulative impact of development, the assessment sets out planning policy recommendations to help manage the risk.

1.2 Strategic flood risk solutions

1.2.1 Local solutions

High Peak Borough Council (HPBC) is reviewing and updating its planning policies through a process known as the Local Plan Update (LPU). This will set an updated planning policy framework for the future management of flood risk and drainage in the area. This includes flood risk management, alongside wider environmental and water quality enhancements. Strategic solutions that the LPU may directly or indirectly help to shape include upstream flood storage, integrated major infrastructure/ flood risk management schemes, new defences, and watercourse improvements as part of regeneration and enhancing green infrastructure, with opportunities for natural flood management and retrofitting Sustainable Drainage Systems (SuDS).



Existing specific actions for the authority area are set out in the Derbyshire County Council (DCC) Local Flood Risk Management Strategy, which can be downloaded from the DCC website [here](#). The five local objectives set out for managing flood risk across Derbyshire are:

- To understand flood risk in Derbyshire and the increasing impacts of climate change whilst working collaboratively with all other Risk Management Authorities and relevant groups.
- To work with all relevant bodies to ensure development in Derbyshire delivers Sustainable Drainage with multiple benefits.
- To reduce the level of flood risk to the residents of Derbyshire.
- To enable and support Derbyshire communities and residents to recognise, understand and manage their own flood risk.
- To work to restore, protect and enhance the historic and natural environments of Derbyshire.

The relevant River Basin District (RBD) Flood Risk Management Plans (FRMPs) also set out local measures relevant to the authority area.

High Peak Borough falls into both the North West RBD and the Humber RBD.

Measures set out within the North West RBD that are applicable to High Peak include:

- Collaborate with environmental partners and major landowners to significantly increase upland and lowland peat and wetland restoration in the North West of England.
- Identify and map opportunities to deliver nature-based solutions on Risk Management Authority owned land in the North West of England.
- Work in unison to map opportunity catchments for habitat creation and develop a programme for joint delivery in the North West of England.
- Work together to deliver conventional, innovative and nature-based improvements to flood risk, water and habitat quality in the North West of England.
- Work with local planning authorities, developers and other placemakers to ensure the wider use and adoption of Sustainable Drainage practices in the North West of England.

Measures set out within the Humber RBD that are applicable to High Peak include:

- Continue to work with local communities to increase understanding, preparedness, and ownership of flood risk in Derbyshire.
- Investigate and implement where feasible Natural Flood Management opportunities across moorlands in the High Peak and Derbyshire Dales.

The RBD FRMPs are available on the Government website, [here](#).



These objectives need to be delivered by new development alongside retrofitting and enhancing green infrastructure and flood defence schemes in existing developed areas.

Further details on strategic plans that exist for High Peak Borough can be found in Section 2 of the main report.

1.2.2 National solutions

The Environment Agency is developing a new National Flood Risk Assessment (NaFRA2) which is expected to be published in 2024 and will provide a wide range of new data to assess flood risk from rivers, the sea and surface water. This new assessment will provide an improved evidence base from which to inform our management of risk. However, this will only provide a starting point in the assessment and mitigation of cumulative risk.

Flood risk is likely to increase, perhaps substantially, as a result of climate change so planners, emergency planners, asset managers, and others will need to mitigate this through a mix of collaborative working, planning policies, consideration of 'worst case' scenarios, development of contingency plans and some detailed analysis.

1.2.3 Opportunities and projects in and/or affecting High Peak Borough

The following sections address partnerships and project delivery schemes that affect High Peak Borough.

1.2.3.1 Catchment Based Approach (CaBA)

The Catchment Based Approach (CaBA) was introduced by the Government to establish catchment partnerships throughout England to jointly deliver improved water quality and reduce flood risk, directly supporting achievement of many of the targets set out within the Government's 25-year Environment Plan. CaBA partnerships are actively working in all 100+ river catchments across England and cross-border with Wales. Further details are available on the CaBA website, [here](#).

There are two catchment partnerships within High Peak Borough.

The Derbyshire Derwent Catchment Partnership (DDCP) is hosted by Derbyshire Wildlife Trust. There are 58 partners within the DDCP, and the catchment partnership has five main objectives:

- To adopt a collaborative approach to the development of interventions to improve the catchment's urban and rural water environment.
- To support community action and educational initiatives to improve the water environment and where appropriate support increased access to new and existing public footpaths and public open spaces.



- To improve biodiversity within the catchment by habitat management and creation and management of non-native invasive species.
- To consider the impact of climate change on the environment and ways to manage and mitigate this, particularly in the Derwent Valley Mills World Heritage Site and surrounding area.
- To influence and support sustainable development in urban areas to ensure that they have minimal impact on the environment.

Further information is available on the Derbyshire Wildlife Trust website, [here](#).

The Upper Mersey CaBA is hosted by the Mersey Rivers Trust and covers the upper part of the River Mersey and its source tributaries which flow from High Peak Borough, including the Rivers Etherow and Goyt which rise in the Peak District. HPBC are already a partner within the Upper Mersey CaBA.

The three main objectives of the Upper Mersey CaBA are:

- To create cleaner and healthier water bodies.
- To protect and enhance Nature Recovery and the natural aspects of our catchment.
- To develop a catchment which is more resilient to the effects of climate change.

Further information is available on the Mersey Rivers Trust website, [here](#).

1.2.3.2 Derbyshire Wildlife Trust

Derbyshire Wildlife Trust manage eight Nature Reserves within High Peak Borough. These are:

- Broadhurst Edge Wood, New Mills
- Brockholes Wood, Crowden
- Hadfields Quarry, Castleton
- Hillbridge and Park Wood, Whaley Bridge
- Ladybower Wood, Sheffield
- Long Clough, Glossop
- Thornhill Carrs, Bamford
- Watford Lodge, New Mills

These sites are home to various important and protected habitats and species, including:

- Upland oak woodland
- Palmate newts
- Green tiger beetles
- Lichens and bryophytes
- Unimproved grassland
- Quaking grass



- Pink meadow cap fungus
- Purple hairstreak butterfly
- Mountain hare

Natural Flood Management techniques could be encouraged at some of the reserves to aid flood storage and improve natural habitats.

Further information on their reserves and the work they do is available on the Wildlife Trust website [here](#).

1.3 Assessment of Cross-Boundary Issues

High Peak Borough is bordered by the Peak District National Park Authority to the north, east and south. Section 2.1 of the main report discusses the role and responsibilities of the Peak District National Park Authority within High Peak Borough. The western side of High Peak Borough is bordered by Cheshire East, Stockport, and Tameside. The neighbouring Local Authority areas are shown in Figure 1-1.

A large area of High Peak Borough is contained within the Peak District National Park and the characteristics of High Peak Borough are dictated by this, comprising largely of upland rural areas.

Several watercourses have their headwaters within High Peak Borough, flowing out of the area and into the neighbouring districts. The River Goyt and its tributary the River Etherow, rise in the west of the borough and join the River Tame in Stockport to the west of the borough to form the River Mersey. The River Derwent and its tributary the River Noe rise in the east of the borough and flow south through the Peak District National Park. The River Wye drains the southern end of the borough and flows east to join the River Derwent at Rowsley. Section 1.5 of the main report provides further details on the study area.

Future development, both within and outside of High Peak Borough, as well as climate change, have the potential to affect flood risk to existing development and the surrounding areas through increased runoff, depending on the effectiveness of SuDS and drainage implementation.

Development control should ensure that the impact on receiving watercourses from development in the Borough has been sufficiently considered during the planning stage. The NPPF sets out how developments should demonstrate they will not increase flood risk elsewhere. Therefore, providing developments near watercourses in neighbouring authorities comply with the latest planning policy, guidance and legislation relating to flood risk and sustainable drainage, they should result in no increase in flood risk within the Borough. The neighbouring authorities were contacted for information on their site allocations, to determine where development in neighbouring authorities may have an impact on High Peak Borough.



The following Local Plans have been adopted by neighbouring local authorities and include policies relevant to flood risk and drainage, with hyperlinks to the documents provided:

- [Cheshire East Local Plan Strategy 2010 - 2030 \(adopted in 2017\)](#)
- [Peak District National Park Authority Core Strategy up to 2026 \(adopted in 2011, currently in the process of reviewing their Local Plan\)](#)
- [Stockport Core Strategy 2011 - 2026 \(adopted in 2011, currently in the process of reviewing their Local Plan\)](#)
- [Tameside Unitary Development Plan \(adopted 2004\)](#)

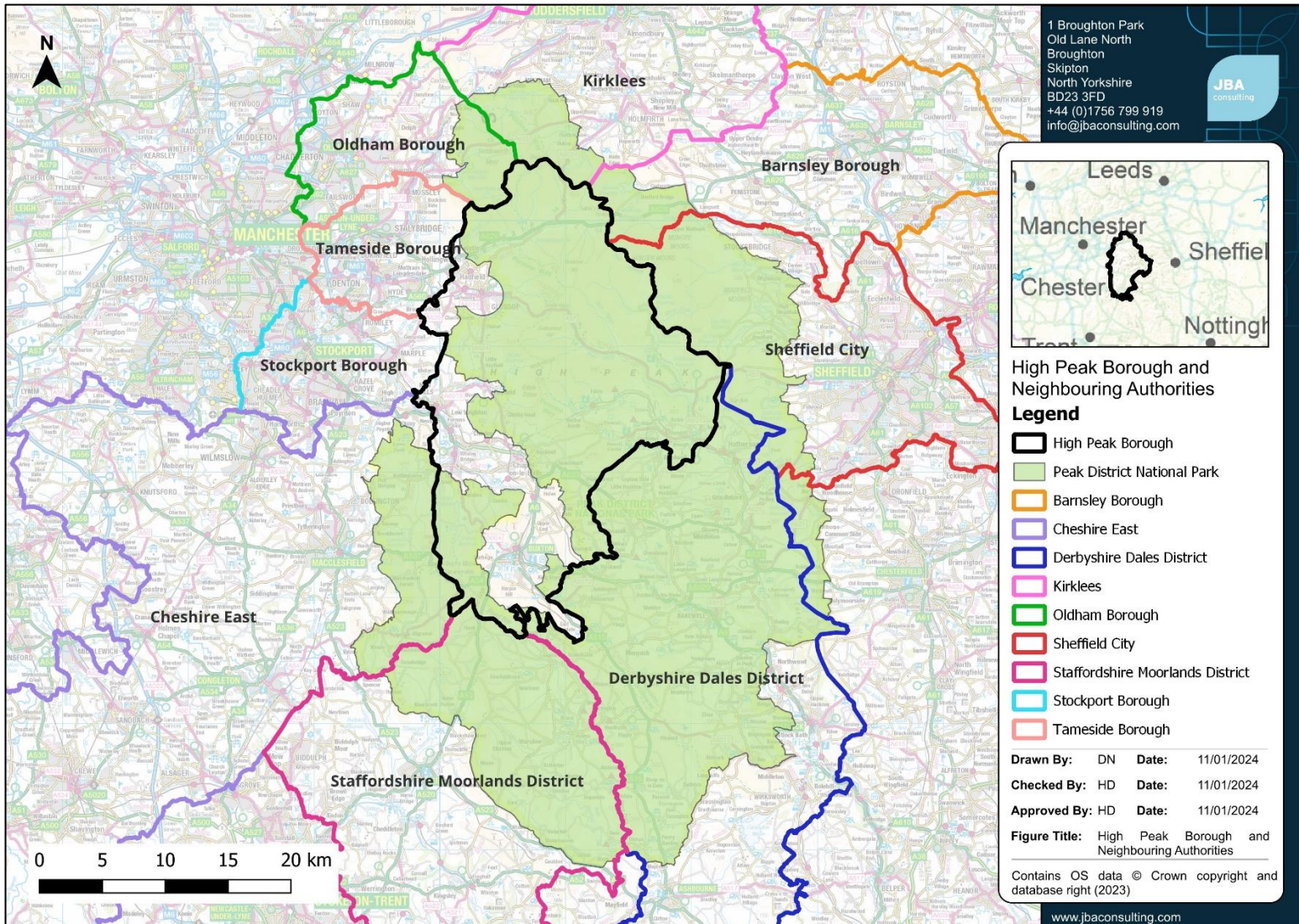


Figure 1-1: Neighbouring authorities to High Peak Borough.



1.4 Cumulative Impact Assessment Methodology

This broadscale assessment determines where the potential cumulative impact of developments may have the greatest effect on flood risk across the study area. For the CIA, High Peak Borough was assessed at a catchment level, with these catchments shown in Figure 1-2. Potential change in developed areas within each catchment from neighbouring authorities was also considered. Analysis of this data facilitated the identification of catchments at the greatest risk of cumulative impacts of an increased development within the catchment.

There are four stages to the Level 1 Cumulative Impact Assessment (CIA):

1. Assess sensitivity to surface water and fluvial flood risk.
 - This will be assessed by calculating the change in the number of properties at risk from the 1% AEP to the 0.1% AEP events for surface water and fluvial flooding respectively, given as a percentage of the total properties in the catchment.
2. Identify historic flooding incidents.
 - Identify the total number of historic flooding incidents within each catchment.
3. Assess the catchments with the highest degree of proposed new development.
 - This will be assessed by calculating the percentage area of each catchment covered by proposed development.
4. Identify the catchments at greatest risk.
 - Rank catchments in each category.
 - Discussion of catchments which are at high risk in all categories/individual categories.
 - Policy recommendations for developments in higher risk catchments.
 - Identify catchments needing further consideration within a Level 2 SFRA (if required).

The next stage after this process would be to assess the impacts of individual sites/preferred development areas in High Peak Borough. However, this is beyond the scope of a Level 1 SFRA and would be assessed within a Level 2 SFRA (if required) and site-specific FRA.

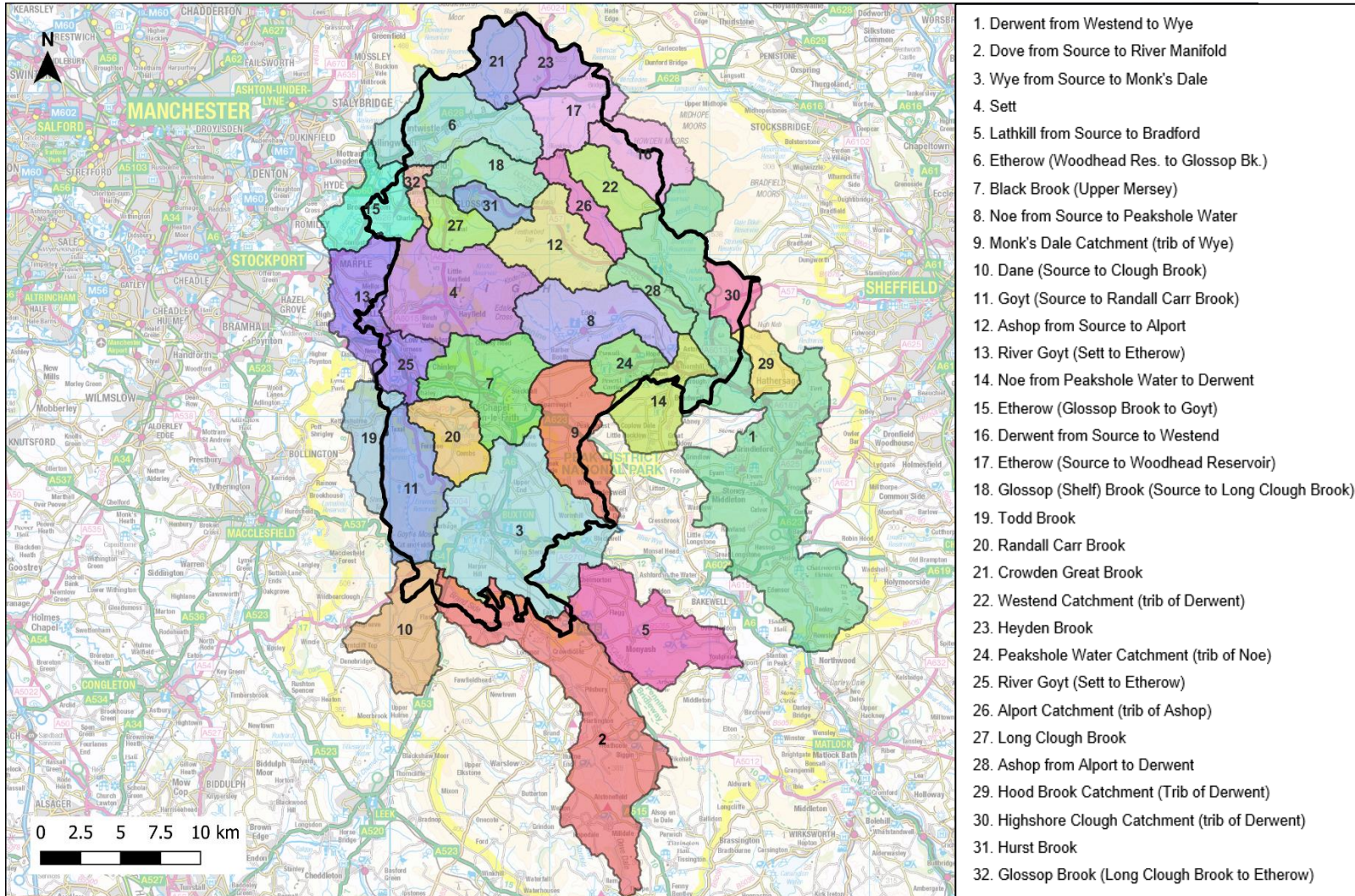


Figure 1-2: Catchments within High Peak Borough.



Table 1-1 summarises the datasets used within the High Peak Borough CIA.

Future development sites within the study area were provided by High Peak Borough Council (HPBC) and neighbouring authorities. Catchments within the study area were ranked on four metrics: sensitivity to increased risk of surface water flooding, sensitivity to increased risk of fluvial flooding, prevalence of recorded historic flood incidents (limited by the data available), and area of new development proposed within the catchment.

The final results of this assessment gave a rating of low, medium, or high risk for each metric, for each catchment within the study area, the boundaries of which were derived from the Water Framework Directive (WFD). The rating of each catchment in each of these assessments was combined to give an overall ranking.

Table 1-1: Summary of datasets used within the Broadscale CIA.

Dataset	Coverage	Sources of Data	Use of Data
Catchment boundaries	High Peak Borough and neighbouring authorities	Water Framework Directive Catchments	Assessment of susceptibility to cumulative impacts of development by catchment
National Receptor Dataset (2021)	High Peak Borough (does not extend across all cross-boundary catchments)	EA (obtained via HPBC)	Properties for the assessment of flood risk
Risk of Flooding from Surface Water	High Peak Borough and neighbouring authorities	EA	Assessing the number of properties at risk of surface water flooding within each catchment
Fluvial Flood Zones 2 and 3a (from the Flood Map for Planning)	High Peak Borough and neighbouring authorities	EA	Assessing the number of properties at risk of fluvial flooding within each catchment
Future development areas (recently built out sites/sites under construction/sites with planning permission/previously)	High Peak Borough and neighbouring authorities	HPBC Peak District National Park Authority Cheshire East Council	Assessing the impact of proposed future development on risk of flooding



Dataset	Coverage	Sources of Data	Use of Data
allocated sites/currently allocated sites)		Stockport Council Tameside Council	
Historic flooding incidents (all sources)	Part of High Peak Borough and Derbyshire Dales District	Derbyshire Dales District Council	Assessing incidences of historic flooding within the study area
Historic flooding incidents (sewer flooding)	Part of High Peak Borough	United Utilities	Assessing incidences of historic flooding within the study area

1.4.1 Sensitivity to increases in fluvial flooding

This is the measure of the increase in the number of properties at risk of fluvial flooding from the 1% AEP event to the 0.1% AEP event. It is an indicator of where local topography makes an area more sensitive to increases in flood risk that may be due to any number of reasons, including climate change, new development etc. It is not an absolute figure or prediction of the impact that new development will have on flood risk.

The National Receptor Database (NRD) dataset 2021 was used to identify all properties within the catchments. The NRD was filtered so that only residential and non-residential properties were included within the analysis, excluding other services and features represented within the NRD. The NRD provided by HPBC covered the full extent of High Peak Borough with a small buffer but did not cover the entire area of all the cross-boundary catchments as this data is not held by HPBC. The main catchments affected are:

- Dane (Source to Clough Brook)
- Derwent from Westend to Wye
- Dove from Source to River Manifold
- Lathkill from Source to Bradford
- Noe from Peakshole Water to Derwent
- Todd Brook

The NRD was intersected with the 1% and 0.1% AEP fluvial flood extents separately to determine the number of properties in each catchment, in each fluvial flood extent. The difference between the two values was then taken as a percentage of the total



number of properties within the catchment to allow comparison between catchments of different sizes.

1.4.2 Sensitivity to increases in surface water flooding

This is the measure of the increase in the number of properties at risk of surface water flooding in a 1% AEP event to a 0.1% AEP event and follows the same process as for fluvial flood risk, see Section 1.4.1 above.

1.4.3 Growth in the area

Development within High Peak Borough has the potential to affect flood risk in neighbouring authorities, especially if there are existing flood risk issues.

Areas for future proposed development were received from HPBC and neighbouring authorities and were assessed as part of this CIA. The area of new development within each catchment was expressed as a percentage of the total catchment area to determine the potential for increases in flood risk as a result of new development. At this stage the whole area of each development was considered, with no land use assumptions for the development areas.

The Peak District National Park Authority confirmed that their current local plan does not have any site allocations.

1.4.4 Historic flood risk

HPBC were unable to provide recorded flooding event data in GIS format for use in this assessment. However, Derbyshire Dales District Council provided historic flooding information which included fluvial, surface water, groundwater and sewer flooding issues which covers a large area of the Borough. All flood risk management enquiries were provided so, general land drainage and flood risk management enquiries were excluded from this assessment, but all other reported incidences were included. No historic flooding data in a suitable format was made available from any of the other neighbouring authorities.

Sewer flooding data was available in shapefile format for the western side of the Borough, which is served by United Utilities, but was not available for the eastern side of the Borough which is served by Severn Trent Water.

Details of historic flood events can be found in Section 4.1 of the main report. The historic data was represented as point data, where each point represents a location where it is known there has been at least one flood event (however, the nature and scale of these flood events varies significantly). It should be noted that not all flooding is reported, for several reasons, so the number of recorded historic flooding incidences is indicative.



A count of each historical flood incident was conducted for each catchment to determine the historic flood risk within the catchments.

1.5 Ranking the results

The results for each assessment were ranked into high, medium, and low risk as shown in Table 1-2. Ranking delineations were given at natural breaks in the results.

The ranking results were combined from all four assessments to give an overall high, medium, and low ranking for all catchments within the Borough. Each catchment was assigned a score for each assessment based on its ranking (high = 3, medium = 2, low = 1) and these were then averaged to produce a final score and ranking. Any catchment producing an overall score greater than or equal to 2.25 was considered high risk.

There is currently no national guidance available for assessing the cumulative impacts of development. These rankings provide a relative assessment of the catchments within High Peak Borough and are not comparable across other boroughs/districts. The thresholds used have been based on natural breaks in the data and professional judgement.

Table 1-2: Ranking assessment criteria

Flood risk ranking	Percentage of properties at increased risk of fluvial flooding	Percentage of properties at increased risk of surface water flooding	Total number of historic flooding incidents	Percentage area of catchment covered by new development
Low risk	<1%	<1%	<10	0%
Medium risk	1-3%	1-2%	10-25	>0% and <1%
High risk	>3%	>2%	>25	>2%

1.5.1 Assumptions

The assumptions made when conducting the CIA are shown in

Table 1-3.

Policy recommendations with regards to managing the cumulative impact of development have been made in Section 2 below. This will help to ensure there is no incremental increase in flood risk both within and downstream of High Peak Borough.



Table 1-3: Assumptions of the CIA.

Assessment aspect	Assumption made	Details of limitation in method	Justification of method used
Surface water flood risk; Fluvial flood risk	Total number of properties	Assumption that all properties have been included in the 2021 NRD dataset. It may not include all new build properties. It also does not include all properties across some of the larger cross-boundary catchments.	This was the most up to date and accurate data available. The cross-boundary catchments most affected by the missing NRD data lie mostly outside High Peak Borough so the impact will be minimal. For the catchments where at least half the catchment was not covered by the available NRD data, the fluvial and surface water assessments were excluded from the final rankings. In this case this resulted in no changes to the rankings for these catchments.
Surface water flood risk	Climate change proxy	Used the 0.1% AEP extent from the Risk of Flooding from Surface Water Map as an indicative estimate of the impacts of climate change across the Borough	Although the Risk of Flooding from Surface Water Map was uplifted for climate change as part of this study, the uplifts were only applied to High Peak Borough, the Risk of Flooding from Surface Water Map covers the entire area of the catchments both within and outside the Borough and therefore provided a consistent approach for this high level assessment. The 0.1% AEP event is noted to show a similar extent to the 1% AEP plus upper end climate change event.
Fluvial flood	Climate	Used the Flood Map	Although detailed climate



Assessment aspect	Assumption made	Details of limitation in method	Justification of method used
risk	change proxy	for Planning Flood Zone 2 as an indicative estimate of the impacts of climate change across the Borough.	change modelling was available for one watercourse, the broader Flood Map for Planning covers the entire area of the catchments both within and outside the Borough and therefore provided a consistent approach for this high level assessment.
Historic flooding incidents	Total number of historic events and severity of flooding	Only flooding incidents recorded that could be georeferenced with XY coordinates to produce GIS files were used. Each point represents a location where it is known there has been at least one flood incident. The severity of the historic flooding event relating to the point has not been considered, just the total number of points within each catchment where there has been a flood incident.	GIS data sourced provided the most accurate results possible for the location of historic flooding incidents in High Peak Borough.
Historic flooding incidents	Data coverage	The exact extent covered by the historic flooding data provided by Derbyshire Dales District Council is unknown, and the United Utilities only covers the western half of the Borough however historic	The coverage of historic flooding data generally correlates with urbanised areas at fluvial and surface water flood risk. These are also the areas where future development is proposed. Therefore, including the historic data in the rural areas, many of which a low number of



Assessment aspect	Assumption made	Details of limitation in method	Justification of method used
		flooding has been included in the final ranking analysis for all catchments.	incidents or no incidents (where the extent of the data coverage is unknown), will have little impact on the overall rankings as these are likely to already be low risk catchments across other elements.
Development	Area of development	<p>Have assumed all promoted sites provided by High Peak Borough and the neighbouring authorities are taken forward to development. For High Peak Borough, sites include all promoted sites provided by the Council as of the 9 October 2023.</p> <p>Have not considered whether sites are greenfield or brownfield sites (with brownfield regeneration having the potential to reduce flood risk) or the proposed allocation type and land use of the site.</p>	<p>This is a reasonable worst-case scenario as we do not have further information to inform which sites are most likely to go forward to development.</p> <p>Information on greenfield and brownfield sites was not readily available so this will be considered further in a Level 2 assessment if required.</p>

1.6 Cumulative Impact Assessment

1.6.1 Sensitivity to fluvial flooding

The number of properties located within Flood Zone 2, but not presently within Flood Zone 3a was calculated, as a percentage of the total properties across the whole catchment. These properties are considered sensitive to increased flood risk as a result of climate change. Flood Zone 2 can be used as an indicative climate change



extent given the upper end climate change estimates are often similar to the 0.1% AEP/ Flood Zone 2 extents.

Catchments with greater than 3% of properties at increased risk were considered high risk and are listed in Table 1-4 below.

Table 1-4: Catchments considered highly sensitive to increased fluvial flood risk in the future.

Catchment	Percentage of properties sensitive to increased fluvial flood risk	Rank
River Goyt (Sett to Etherow)	5.65	1
Derwent from Westend to Wye	5.16	2
Glossop (Shelf) Brook (Source to Long Clough Brook)	4.67	3
Randall Carr Brook	3.06	4

1.6.2 Sensitivity to surface water flooding

The number of properties located within the 0.1% AEP surface water extent not presently within the 1% AEP extent was calculated, as a percentage of the total properties across the whole catchment. These properties are considered sensitive to increased flood risk as a result of climate change.

Catchments with greater than 2% of properties at increased risk were considered high risk and are listed in Table 1-5.

Table 1-5: Catchments considered highly sensitive to increased surface water flood risk in the future.

Catchment	Percentage of properties sensitive to increased surface water flood risk	Rank
Etherow (Source to Woodhead Reservoir)	20.00	1
Noe from Source to Peakshole Water	5.19	2
Sett	4.00	3
Long Clough Brook	3.16	4
River Goyt (Sett to Etherow)	3.00	5



Catchment	Percentage of properties sensitive to increased surface water flood risk	Rank
Etherow (Glossop Brook to Goyt)	2.84	6

It should be noted that although the Etherow (Source to Woodhead Reservoir) catchment shows a considerably higher percentage risk than the other high risk catchments, there are only five properties located within this catchment with only one property shown to be at risk during the 0.1% AEP event.

1.6.3 Prevalence of historic flooding incidents

Historic flood incidents data for fluvial or surface water flooding were available from Derbyshire Dales District Council and sewer flooding incidents from United Utilities were available for the western side of the borough. While this will not provide a detailed scope of historic flooding incidents across the entirety of High Peak Borough and the neighbouring authorities, using the data available the number of flood incidents in each catchment were identified to provide a broadscale understanding of flood risk.

Catchments with more than 30 recorded flooding incidents were considered high risk.

For a more detailed assessment of historic flood risk, acquiring historic flooding incidents records from all neighbouring authorities is recommended.

Table 1-6: Catchments with the highest number of recorded historic flood incidents.

Catchment	Number of recorded incidents	Rank
Black Brook (Upper Mersey)	75	1
Sett	44	2
Derwent from Westend to Wye	37	3
Randall Carr Brook	36	4

1.6.4 Area of proposed development

HPBC and neighbouring authorities provided shapefiles of promoted development sites and the total area of new development in each catchment was measured, as a percentage of catchment area. There are no site allocations within the current Local Plan for the Peak District National Park Authority which covers a large area of High Peak Borough and the neighbouring authority areas within the cross-boundary catchments. As such, there are very limited site allocations currently within the study



area. Due to the small scale of proposed developments in comparison to the catchment areas, catchments with more than 2% of their area earmarked for development were considered high risk.

Table 1-7: Catchments with the highest percentage cover of proposed development.

Catchment	Area of proposed development (ha)	Area of proposed development as percentage of catchment area	Rank
Glossop (Shelf) Brook (Source to Long Clough Brook)	49.8	2.81	1
Glossop Brook (Long Clough Brook to Etherow)	10.6	2.55	2
Wye from Source to Monk's Dale	172.5	2.20	3
Randall Carr Brook	34.9	2.01	4

1.7 Overall rankings

For each assessment, catchments were given a score of 3 (high), 2 (medium), or 1 (low) risk. The fluvial and surface water flood risk assessments were excluded for those catchments where a considerable area was not covered by the NRD (listed in Section 1.4.1). These scores were then averaged across the assessment to give a combined score. Table 1-8 provides a summary of the rankings for each catchment for the individual assessments and the combined scores.

Table 1-8: Catchment rankings and combined scores.

Waterbody name	Development	Historic flooding	Fluvial flooding	Surface water flooding	Average score
Alport Catchment (trib of Ashop)	1	1	1	1	1.00
Ashop from Alport to Derwent	1	1	1	1	1.00
Ashop from Source to Alport	1	1	1	1	1.00
Black Brook (Upper Mersey)	2	3	1	2	2.00
Crowden Great Brook	1	1	1	1	1.00
Dane (Source to Clough Brook)	1	1	N/A	N/A	1.00



Waterbody name	Develop-ment	Historic flooding	Fluvial flooding	Surface water flooding	Average score
Derwent from Source to Westend	1	1	1	1	1.00
Derwent from Westend to Wye	1	3	N/A	N/A	2.00
Dove from Source to River Manifold	1	1	N/A	N/A	1.00
Etherow (Glossop Brook to Goyt)	2	2	1	3	2.00
Etherow (Source to Woodhead Reservoir)	1	1	1	3	1.50
Etherow (Woodhead Res. to Glossop Bk.)	2	2	1	2	1.75
Glossop (Shelf) Brook (Source to Long Clough Brook)	3	2	3	2	2.50
Glossop Brook (Long Clough Brook to Etherow)	3	2	1	2	2.00
Goyt (Source to Randall Carr Brook)	2	1	2	1	1.50
Heyden Brook	1	1	1	1	1.00
Highshore Clough Catchment (trib of Derwent)	1	1	1	1	1.00
Hood Brook Catchment (Trib of Derwent)	1	1	1	1	1.00
Hurst Brook	1	2	1	2	1.50
Lathkill from Source to Bradford	1	1	N/A	N/A	1.00
Long Clough Brook	2	2	2	3	2.25
Monk's Dale Catchment (trib of Wye)	1	1	2	2	1.50
Noe from Peakshole Water to Derwent	1	1	N/A	N/A	1.00



Waterbody name	Develop-ment	Historic flooding	Fluvial flooding	Surface water flooding	Average score
Noe from Source to Peakshole Water	1	1	1	3	1.50
Peakshole Water Catchment (trib of Noe)	1	1	2	2	1.50
Randall Carr Brook	3	3	3	2	2.75
River Goyt (Sett to Etherow)	2	2	3	2	2.25
River Goyt (Sett to Etherow)	2	1	1	3	1.75
Sett	2	3	2	3	2.50
Todd Brook	1	1	N/A	N/A	1.00
Westend Catchment (trib of Derwent)	1	1	1	1	1.00
Wye from Source to Monk's Dale	3	2	1	2	2.00

A Red-Amber-Green (RAG) rating was then applied to the catchments, with red being high risk, amber being medium risk and green being low risk. The RAG ratings are shown in Figure 1-3. The catchments with an average score of greater than or equal to 2.25 were deemed high risk and are shown in Table 1-9.

Table 1-9: High risk catchments as shown in Figure 1-3.

Waterbody name	Average score
Randall Carr Brook	2.75
Glossop (Shelf) Brook (Source to Long Clough Brook)	2.50
Sett	2.50
Long Clough Brook	2.25
River Goyt (Sett to Etherow)	2.25
Glossop Brook (Long Clough Brook to Etherow)	2.00
Wye from Source to Monk's Dale	2.00

Despite scoring a combined score of 2, the Glossop Brook (Long Clough Brook to Etherow) catchment was increased from medium to high risk on the account of ranking high for development increase, and medium for historic flood risk and surface water risk.



The Wye from Source to Monk's Dale catchment was also increased from medium to high risk despite its score of 2. It ranked high risk for development increase and although it ranked medium risk for surface water and low risk for fluvial flood risk this catchment has the largest number of properties located within it, meaning there are a considerable number of properties within this catchment at both fluvial and surface water risk.

The catchments classified as medium and low risk are shown in Table 1-10 and Table 1-11 respectively.

Table 1-10: Medium risk catchments.

Waterbody name	Average score
Black Brook (Upper Mersey)	2.00
Derwent from Westend to Wye	2.00
Etherow (Glossop Brook to Goyt)	2.00
Etherow (Woodhead Res. to Glossop Bk.)	1.75
River Goyt (Sett to Etherow)	1.75

Table 1-11: Low risk catchments.

Waterbody name	Average score
Etherow (Source to Woodhead Reservoir)	1.50
Goyt (Source to Randall Carr Brook)	1.50
Hurst Brook	1.50
Monk's Dale Catchment (trib of Wye)	1.50
Noe from Source to Peakshole Water	1.50
Peakshole Water Catchment (trib of Noe)	1.50
Alport Catchment (trib of Ashop)	1.00
Ashop from Alport to Derwent	1.00
Ashop from Source to Alport	1.00
Crowden Great Brook	1.00
Dane (Source to Clough Brook)	1.00
Derwent from Source to Westend	1.00
Dove from Source to River Manifold	1.00
Heyden Brook	1.00
Highshore Clough Catchment (trib of Derwent)	1.00
Hood Brook Catchment (Trib of Derwent)	1.00
Lathkill from Source to Bradford	1.00
Noe from Peakshole Water to Derwent	1.00
Todd Brook	1.00



Waterbody name	Average score
Westend Catchment (trib of Derwent)	1.00

1.8 Discussion of risk rankings

It should be noted that this assessment provides a relative assessment of risk between catchments within the study area and that the risk within High Peak Borough is generally low.

As shown in Figure 1-3, the catchments designated high risk are within the western side of the borough, which is more urbanised and as expected shows a higher proportion of properties at fluvial and surface water flood risk, more incidents of historic flooding, and more proposed development.

The National Park is shown to be generally low risk due to its rural nature. There are also no planned site allocations within the National Park. If development is proposed in the National Park in future, it is recommended that further assessment of the potential downstream impacts is undertaken, particularly within the cross-boundary catchments which were not fully represented within this assessment as a result of the missing NRD data coverage.

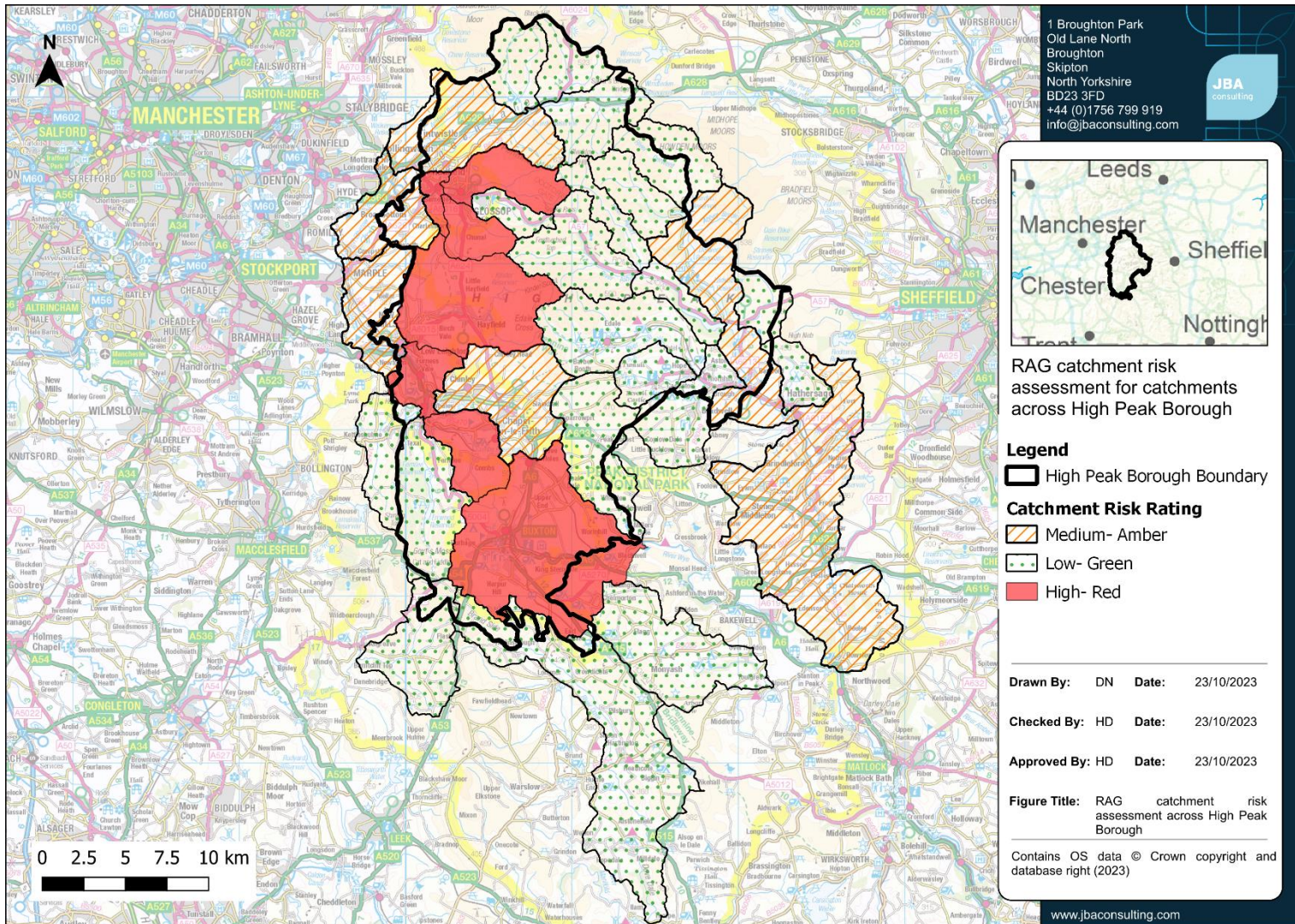


Figure 1-3: Results of the ranking assessment showing high (red), medium (amber) and low (green) risk catchments across High Peak Borough.



2 Level 1 SFRA Policy recommendations

2.1 Broadscale recommendations

All developments are required to comply with the NPPF and demonstrate they will not increase flood risk elsewhere. Therefore, providing developments comply with the latest guidance and legislation relating to flood risk and sustainable drainage, and appropriate consideration is given to surface water flow paths and storage proposals should normally not increase flood risk downstream.

The high-level CIA for High Peak Borough has highlighted areas where there is the potential for development to have a cumulative impact on flood risk. Catchments have been identified as high, medium, or low risk, relative to the other catchments within the borough.

Flood risk can be affected by several different factors, which have been assessed as part of the CIA. As a result, incremental action and betterment in flood risk terms across all of the Borough should be supported where possible.

The following policy recommendations therefore apply to all catchments within the study area:

- HPBC should work closely with neighbouring local authorities to develop complementary Local Planning Policies for catchments that drain into and out of the area to other local authorities in order to minimise any cross- boundary issues of cumulative impacts of development.
- Developers should incorporate SuDS and provide details of adoption, ongoing maintenance, and management on all development sites. Proposals will be required to provide reasoned justification for not using SuDS techniques, where ground conditions and other key factors show them to be technically feasible. Preference will be given to systems that contribute to the conservation and enhancement of biodiversity and green infrastructure where practicable. Developers should refer to the relevant Lead Local Flood Authority (LLFA) guidance for the requirements for SuDS in High Peak Borough. Further guidance on SuDS can be found in Section 9 of the main report.
- DCC as LLFA will review Surface Water Drainage Strategies in accordance with their local requirements for major and non-major developments. These should consider all sources of flooding to ensure that future development is resilient to flood risk and does not increase flood risk elsewhere.
- Where appropriate, the opportunity for NFM in rural areas, SuDS retrofit in urban areas and river restoration should be maximised. Culverting should not be supported, and day-lighting existing culverts should be promoted through new developments.



- Runoff rates from all development sites must be limited to greenfield rates (including brownfield sites) unless it can be demonstrated that this is not practicable. If it is demonstrated that greenfield rates are not practicable then the runoff rates should be restricted to the closest rate that is practicable. Developers should refer to the relevant LLFA guidance for the requirements for SuDS in High Peak Borough.
- Where required, site-specific FRAs should explore opportunities to provide wider community flood risk benefits through new developments. Measures that can be put in place to contribute to a reduction in flood risk downstream should be considered. This may be either by the provision of additional storage on site e.g. through oversized SuDS, NFM techniques, green infrastructure and green-blue corridors, and/ or by providing a Partnership Funding contribution towards any flood alleviation schemes.

Section 8 of the main report details the local requirements for mitigation measures. Catchment-specific recommendations are made for high-risk catchments below.

2.2 Recommendations for high-risk catchments

High risk catchments are detailed in Table 1-9. From analysing the results produced above, high-level recommendations for flood storage and betterment have been proposed for sites in each of the high-risk catchments. These recommendations should be considered by developers as part of a site-specific assessment, but more detailed modelling must be undertaken by the developer to ascertain the true storage needs and potential at each site at the planning application stage. The FRA should consider the potential cumulative effects of all proposed development and how this affects sensitive receptors.

The following recommendations are made for high-risk catchments:

- Developers should include a construction surface water management plan to support the Construction Drainage Phasing Plan. This should provide information to the EA, the LLFA and the LPA regarding the proposed approach to surface water management in storm events during the construction phase.
- For developments in high-risk catchments, the LLFA and LPA should consult with Local Not-For-Profit organisations such as wildlife trusts, rivers trusts and catchment partnerships. This will help to understand ongoing and upcoming projects where NFM, flood storage and attenuation, and environmental betterment may be possible alongside developments and aid in reducing flood risk.
- LPAs should work closely with the EA and the LLFA to identify any areas of land that should be safeguarded for any future flood alleviation schemes and NFM features. Investigations should seek to determine where developments have the potential to contribute towards works to reduce flood risk and enable



regeneration in catchments as well as contributing to the wider provision of green infrastructure.

2.3 Development within medium risk catchments

Catchments that have scored an overall ranking of medium, but where development is proposed should also consider the following recommendations:

- LPAs should work closely with the EA and the LLFA to identify any areas of land that should be safeguarded for any future flood alleviation schemes and NFM features.
- There is the potential for development in these catchments to contribute towards works to reduce flood risk and enable regeneration as well as contributing to the wider provision of green infrastructure.

Medium risk catchments can be found in Table 1-10.