

Pendle Level 2 Strategic Flood Risk Assessment Main Report

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This report describes work commissioned by Pendle Borough Council by an instruction dated 27 June 2024. The Client's representative for the contract was John Halton of Pendle Borough Council. Laura Thompson of JBA Consulting carried out this work.

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Abbreviations

AEP	Annual Exceedance Probability
BGS	British Geological Survey
DTM	Digital Terrain Model
EA	Environment Agency
FMfP	Flood Map for Planning
FRA	Flood Risk Assessment
FRCC-PPG	Flood Risk and Coastal Change Planning Practice Guidance
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
NaFRA2	National Flood Risk Assessment 2
NFM	Natural Flood Management
NPPF	National Planning Policy Framework
OS	Ordnance Survey
PBC	Pendle Borough Council
PPG	Planning Policy Guidance
RFM	Reservoir Flood Map
SFRA	Strategic Flood Risk Assessment
SuDS	Sustainable Drainage Systems
UU	United Utilities
WwNP	Working with Natural Processes

1 Introduction

A Level 2 Strategic Flood Risk Assessment (SFRA) is required by Pendle Borough Council (PBC) as all identified potential development sites cannot be allocated outside areas of medium or high flood risk, as identified through the Pendle Level 1 SFRA (2021) and through additional assessment carried out by PBC.

The Level 1 SFRA entailed the high-level flood risk screening of 303 potential development site allocations. Eight of these sites were shown to be at medium or high flood risk yet considered important to PBC's Local Plan ambitions. A Level 2 SFRA is therefore required to help determine whether these sites can be allocated in the Pendle Local Plan.

Using the outputs from the Level 1 SFRA, PBC has performed the sequential test on all available sites using the administrative area of Pendle as the search area. The outcomes of the sequential test found that there were no reasonably alternative sites within the search area at lower risk of flooding, hence the necessity for a more detailed assessment of flood risk through this Level 2 SFRA.

This Level 2 SFRA consists of the following documents:

- This main 'front end' report summarising the Level 2 SFRA process and methodologies;
- Eight detailed site assessment reports (Appendix A); and
- A technical report on the delineation of the functional floodplain and future functional floodplain (Appendix B); and

This Level 2 SFRA has been prepared with full consideration of the latest government and Environment Agency (EA) guidance on flood risk and planning policy, namely:

- National Planning Policy Framework¹ (NPPF) 2023,
- Flood Risk and Coastal Change Planning Practice Guidance² (FRCC-PPG) 2022,
- How to Prepare a Strategic Flood Risk Assessment³ guidance 2022,
- Strategic Flood Risk Assessment Good Practice Guide⁴ 2021,
- Flood Risk Assessments: Climate Change Allowances⁵ 2022.

At the time of writing, this Level 2 SFRA has assessed and considered flood risk in the Borough of Pendle at a specific point in time. This Level 2 SFRA has been developed using the most up-to-date data and information available at the time of publication. The Level 2 SFRA has been future proofed as far as possible though the reader should always confirm

¹ National Planning Policy Framework | UK Government | 2023

² Flood Risk and Coastal Change Planning Practice Guidance | UK Government | 2022

³ How to Prepare a Strategic Flood Risk Assessment | Environment Agency | 2024

^{4 &}lt;u>Strategic Flood Risk Assessment Good Practice Guide | Association of Directors of</u> <u>Environment, Economy, Planning & Transport | 2021</u>

⁵ Flood Risk Assessments: Climate Change Allowances | Environment Agency | 2022

with the source organisation (PBC) that the latest information is being used when decisions concerning development and flood risk are being considered.

This SFRA uses the EA's Flood Map for Planning (FMfP) version issued in August 2024 to assess fluvial risk, and the Risk of Flooding from Surface Water (RoFSW) dataset to assess surface water flood risk from June 2024.

At the time of writing, the EA is planning to publish a new National Flood Risk Assessment (NaFRA2) in early 2025. NaFRA2 will provide a single picture of current and future flood risk from rivers, the sea and surface water, using both existing detailed local information and improved national data and surface water flood risk will be incorporated into the Flood Map for Planning.

The EA is therefore pausing updates to the flood zones of the Flood Map for Planning until Spring 2025. During this period, where new flood zone information becomes available in the study area, a comment will appear on the current Flood Map for Planning service stating - *"Our understanding of flood risk from rivers and the sea has changed since this information was published"*. Any new information must be used instead of the flood zones published on the Flood Map for Planning service, when preparing or updating the SFRA, when requesting planning application flood risk assessments (FRA), and when applying the sequential and exception tests.

The NPPF (December 2023) is also, at the time of writing, undergoing a reform with the advent of the new Labour Government. A consultation period is ongoing with draft reforms to the NPPF due early 2025.

The FRCC-PPG (August 2022), alongside the NPPF, is referred to throughout this SFRA, being the current primary development and flood risk policy and guidance available at the time of the finalisation of this SFRA.

The EA's SFRA guidance states a review of a SFRA should be carried out when there are changes to:

- The predicted impacts of climate change on flood risk,
- Detailed flood modelling such as from the EA or LLFA,
- The spatial development strategy or relevant local development documents,
- Local flood management schemes,
- Flood risk management plans,
- Local flood risk management strategies, and
- National planning policy or guidance.

The SFRA should also be reviewed after a significant flood event. It is in any authority's interest to keep the SFRA as up to date as possible.

Ideally, the SFRA should be kept as a 'live' entity and continually updated when new information becomes available. The EA requests for reports and maps to be published online and be easily updateable, when required.

2 Limitations

This Level 2 SFRA has been prepared under several limitations associated with the Local Plan programme and budget meaning it was not possible to update EA flood models with the latest information. These limitations have been subject to consultation with council officers whereby alternative approaches have been agreed to enable the Level 2 SFRA to be prepared using available existing information. The limitations include the following:

- The latest available EA flood models provided for use in the Level 2 SFRA are not up to date with the latest hydrology, therefore they may not be fully representative of current hydrological conditions. Model survey and digital terrain model data may also not be based on the latest information. The EA models used in the assessment are listed in Section 4.1.
- The scoping stage of this Level 2 SFRA found that each river model required updating with the latest EA climate change allowances for peak river flows. However, the impacts of climate change on fluvial flood risk have not been modelled for this SFRA due to reasons stated. Therefore, in the absence of modelled climate change information, a proxy approach has been applied whereby the 0.1% annual exceedance probability (AEP) undefended event (used to represent Flood Zone 2) has been used as a conservative proxy for Flood Zone 3 plus climate change.
- Residual flood risks from flood risk management infrastructure should be assessed through the Level 2 SFRA. However, due to the reasons stated, updating the available EA models to represent any residual risk scenarios was not achievable.

Any future SFRA update should look to include updates to the EA models with the latest information that is available at the time, including up to date hydrology inputs, channel and bank survey, LIDAR terrain data, and using the latest modelling software to update and run the models. The latest climate change allowances should be modelled and used to update the SFRA. Any SFRA update should also use any detailed culvert information available from the LLFA to more robustly define the functional floodplain and any residual risk modelling of culvert blockage scenarios.

In the absence of an update to the SFRA ahead of any planning application for allocated sites, the site-specific FRA should address all these limitations to the satisfaction of the LPA, the EA, and the LLFA, where required.



The aim of a Level 2 assessment is to build on the findings of the Level 1 SFRA, focussing

assessment. These locations usually include significant development and / or regeneration areas that are at medium or high risk of flooding from main rivers, ordinary watercourses, or surface water whilst also accounting for the impact of climate change. Flood risk data such

sustainability of these areas. Appropriate mitigation measures and achievable site layouts

This detailed information should support further application of the sequential test, the sequential approach to development management, inform on whether sites can pass the exception test, where applicable, and allow for flood risk indicators to be produced for use

on identified sites or communities at high and medium flood risk that are considered important to Local Plan development. This allows the SFRA process to be time efficient

using detailed modelling techniques only where they are required in the Level 2

as modelled flood extents, depths, velocities and hazards are used to assess the

• Enable the LPA to decide if development can be made safe without increasing flood risk elsewhere.

Be detailed enough for the LPA to identify which potential development allocation

It should enable the LPA to:

can then be informed.

•

3

- Apply the sequential approach by identifying the severity and variation in risk within medium and high-risk flood areas,
- Establish whether proposed allocations or windfall sites, on which your local plan will rely, are capable of being made safe throughout their lifetime without increasing flood risk elsewhere,
- Apply the exception test, where relevant.

in the Sustainability Appraisal of the Local Plan.

EA guidance³ states that a Level 2 SFRA should:

Level 2 SFRA requirements

A site-specific FRA will be required at the development planning stage which will assess risk to each site in greater detail than this Level 2 SFRA. The Level 2 SFRA is a strategic assessment that is not intended to replace the requirement of a site-specific FRA.

Note, this SFRA has been produced under the limitations stated in Chapter 2.

3.1 Objectives

In accordance with the latest national policy and guidance, and the individual requirements of PBC, and with consideration of the limitations stated in Chapter 2 the key objectives of this Level 2 SFRA are to:

- Assess present day flood risk from all sources (fluvial, surface water, groundwater, canals and reservoirs),
- Update the functional floodplain (Flood Zone 3b) using the latest fluvial modelling outputs available from the EA. A 3.3% flood event (1 in 30-year) would normally be the starting point for delineation, where available,
- Document potential residual risk from potential defence breaches and culvert blockages (no modelling),
- Assess detailed modelled outputs including flood depths and hazards, where information is available,
- Assess the impact of climate change on fluvial flood risk based on a proxy approach, using the 0.1% AEP undefended event as a conservative proxy for the 1% AEP undefended event plus climate change,
- Assess existing flood warnings and advise on required emergency planning procedures and safety of site access and escape routes in times of flood,
- Provide site-specific advice on mitigation options i.e. developable / nondevelopable areas; blue / green infrastructure and open spaces; maintenance of fluvial and / or surface water flow routes; land raising and compensatory storage; and advice on minimum finished floor levels; SuDS,
- Assess any catchment-wide or strategic solutions, e.g. upstream opportunity areas for flood management (storage solutions) to mitigate against the risk of flooding downstream and elsewhere the Natural Flood Management (NFM) and Working with Natural Processes (WwNP) datasets,
- Demonstrate whether the second part of the exception test (part b) can be passed for the potential development site allocations, where applicable, and
- Provide recommendations for additional and future works required following on from, or to supplement the Level 2 SFRA i.e. further fluvial or surface water modelling including for climate change, modelling of site layout / design options including provisions for safe access and escape routes, development optioneering (land raising, compensatory storage, flow routes / rates), drainage strategies and site-specific FRA requirements.

4 Available data and information

The data and information described in this chapter has been used in the Level 2 SFRA to assess the risk to each potential development site allocation as required, as described in Chapter 5.

4.1 EA models

The following EA hydraulic river models have been used in the assessment:

- Earby Beck 2018 model,
- Earby Beck Phase 2 2021 model,
- Sefton Street 2021 model,
- Hendon Brook 2021 model.

4.2 EA Open Data

Additional to the EA modelling information, the following datasets, available from the EA's Open Data online portal, have been reviewed and considered:

- Most recent LIDAR digital terrain model (DTM) data
- Flood Map for Planning Flood Zones 2 and 3,
- Flood storage areas,
- Risk of Flooding from Surface Water extents, depths, and hazards for 3.3%, 1% and 0.1% AEP events,
- Spatial Flood Defences,
- Historic Flood Map,
- Recorded Flood Outlines,
- Flood Warning Areas,
- Flood Alert Areas,
- Reservoir Flood Map,
- Working with Natural Processes
 - Riparian Woodland Potential
 - Wider Catchment Woodland Potential
 - Floodplain Woodland Potential
 - Floodplain Reconnection Potential
 - Runoff Attenuation Features 3.3% AEP
 - Runoff Attenuation Features 1% AEP

4.3 Other datasets

Other datasets and information used in the Level 2 SFRA include:

- JBA 5m Groundwater Flood Risk Map,
- Modelled surface water climate change depths and hazards,



- Functional floodplain dataset this dataset has been updated through the Level 2 SFRA (see Appendix B), and
- OS Open Data Zoomstack base mapping.



5 Methodology

This chapter present the methodology used in each stage of the Level 2 SFRA. The sitespecific reports (Appendix A) contain further information.

5.1 Functional floodplain update

Table 1 of the FRCC-PPG² states the following regarding the definition of the functional floodplain:

- This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters.
- Functional floodplain will normally comprise:
 - Land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or
 - Land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding.

The EA's SFRA guidance³ also states the following:

- You may not need to designate the functional floodplain in locations where evidence shows flooding would be prevented by existing:
 - Flood defences
 - Flood risk management features or structures
 - Solid buildings
- The functional floodplain should show land that would normally form the river channel
- The footprints of existing buildings may be removed from functional floodplain extents. However, it may be simpler to include existing buildings and use local policies to control the redevelopment or changes of use that may be acceptable
- Use local policies or guidance to explain the approach you will take when buildings are demolished in functional floodplain. It may be reasonable to assume that sites revert to functional floodplain when buildings have been demolished for more than a year.

With consideration of the above guidance, the functional floodplain has been updated for the whole of the Pendle LPA area, where data and models are available. In summary, this has entailed:

- Updating the existing 2021 functional floodplain extent, delineated through the Level 1 SFRA, with the most appropriate, available modelled flood outline:
 - o Brun Calder 2021 3.3% Defended
 - Clough Spring 2015 3.3% (no defences exist)

- Colne Water 2021 3.3% (no defences exist)
- Earby Beck 2018 3.3% (no defences exist)
- o Earby Beck Phase 2 2021 3.3% Defended
- Edge End Brook 2021 3.3% (no defences exist)
- Hendon Brook 2018 3.3% (no defences exist)
- o Hollin Mill 2021 3.3% (no defences exist)
- North Stream Valley 2021 3.3% (no defences exist)
- o Pendle Water 2021 3.3% Defended
- Primet Bridge 2021 3.3% (no defences exist)
- Sefton Street 2021 3.3% (no defences exist)
- Swindon Clough 2021 3.3% (no defences exist)
- o Trawden Brook 2010 2% Defended
- Walverden Water 2021 3.3% Defended
- o Wider Calder Padiham 2017 1.3% Defended
- Reviewing the EA Flood Storage Areas dataset for inclusion in the functional floodplain extent,
- Using Flood Zone 3 of the Flood Map for Planning where modelled information is unavailable,
- Using OS Open Data watercourse mapping to enable the inclusion of river channels as a 16 metre buffer zone of the channel (8 metres either side of the channel centreline), and
- Identifying and 'filling in' dry islands within the model outputs, assuming that any dry areas surrounded by functional floodplain, that are located within Flood Zone 3 of the Flood Map for Planning, should be considered as functional floodplain.

The technical note in Appendix B details the modelled events, datasets, and scenarios used to define the functional floodplain.

5.2 Climate change allowance modelling

5.2.1 Fluvial

EA SFRA guidance states that the SFRA should assess the effects of climate change on all sources of flooding, including the functional floodplain, to help inform the sequential test. However, the impacts of climate change on fluvial flood risk have not been modelled for this SFRA for reasons stated.

Therefore, in the absence of modelled climate change information, a proxy approach has been used. The 1% AEP defended event (where available) has been used as a conservative proxy to produce a functional floodplain plus climate change (the future functional floodplain). The 0.1% AEP undefended event has been used as a conservative proxy for Flood Zone 3 plus climate change.

5.2.2 Surface water

EA climate change guidance⁵ states that, for SFRAs, the upper end allowance on peak rainfall for the 2070s should be modelled for the 3.3% and 1% AEP events.

For Pendle this entails:

- 3.3% AEP rainfall event + 40%
- 1% AEP rainfall event + 50%

Both scenarios have been modelled for this SFRA and assessed appropriately against the Pendle Local Plan sites.

Note: The national Risk of Flooding from Surface Water map is, at the time of writing, undergoing a significant update. However, the EA will not be publishing the updated map until early 2025.

5.3 Residual risk

5.3.1 Defence breach and structural blockages

Para 004 of the FRCC-PPG states the requirement in plan making to account for residual flood risks from flood risk management infrastructure. Potential residual risk from structure blockages and raised defence breaches have not been modelled, due to reasons stated.

Therefore, for this Level 2 SFRA simple checks using OS Open Data basemapping on the potential for a site to be impacted by a defence breach, canal breach or structural blockage have been documented. The potential residual risk has been flagged within the site reports with the recommendation that this is fully explored through a site-specific FRA at the planning application stage. The site reports in Appendix A show there to be four sites at risk from a canal breach or structural blockage, namely P014 (Land at South Woodclough Platts), P052 (Former Railway Sidings), P257 (Giles Street, Nelson) and P309 (Land at Jackdaw Road).

For sites documented to be at potential residual risk, the FRCC-PPG includes the following information:

- Areas of residual risk should be included in the sequential approach to risk avoidance when sequential testing or through development management.
- Where avoidance is not shown to be feasible through appropriate sequential testing, flood resistance and resilience measures should be in place, including for finished floor levels to be place above the design flood level plus a minimum of 300mm.
- Adequate flood warning and emergency plans should be available to site users. Residual risks will need to be safely managed to ensure people are not exposed to hazardous flooding. This includes the ability of residents and site users to safely access and escape a building during the design flood and to evacuate before an extreme flood event which is defined as the 0.1% AEP event with an

allowance for climate change (note it was not possible to model this event for this SFRA),

- The likelihood of defences keeping pace with climate change should be considered e.g. is funding available and what are the funding options (e.g. Community Infrastructure Levy, planning obligations / S106 agreements, or Partnership Funding). This should inform the nature of residual risk to be considered,
- Local planning authorities should use information on identified residual risk to state in strategic policies their preferred mitigation strategy for ensuring development will be safe throughout its lifetime in relation to urban form, risk management and where flood mitigation measures are likely to have wider sustainable design implications,
- A site-specific FRA will be required for all sites to be at residual risk. The FRA would need to show that appropriate evacuation procedures and flood response infrastructure are in place to manage the residual risk associated with an extreme flood event.

5.3.2 Assessing flood risk from reservoirs

The EA's SFRA guidance requests for the assessment of risk from reservoir dam failure using the EA's Reservoir Flood Map (RFM). The RFM shows the credible worst-case scenarios from dam failure in a dry day scenario. Para 046 of the FRCC-PPG states the following in relation to the risk of flooding from a reservoir:

The local planning authority will need to evaluate the potential damage to buildings or loss of life in the event of dam failure, compared to other risks, when considering development downstream of a reservoir. Local planning authorities are also advised to consult with the owners/operators of raised reservoirs, to establish constraints upon safe development.

Local planning authorities should also consider any implications for reservoir safety and reservoir owners and operators caused by new development located downstream of a reservoir, such as the cost of measures to improve the design of the dam to reduce flood risk, the operation of the reservoir, and general maintenance costs, by consulting with reservoir owners and operators on plan and development proposals. Local authorities, as category 1 responders, can access more information about reservoir risk and reservoir owners using the Resilience Direct system. Developers should be expected to cover any additional costs incurred, as required by the National Planning Policy Framework's 'agent of change' policy (paragraph 187). This could be through Community Infrastructure Levy or section 106 obligations for example.

Applications will need to include any evidence local planning authorities need to understand the impact of individual developments on reservoirs. In doing so, they need to refer to relevant guidance in the Institution of Civil Engineers publication Floods and Reservoir Safety (4th edition) and the Environment Agency's Guide to risk assessment for reservoir safety management. It may be necessary to seek expert advice, such as from an All

Reservoirs Panel Engineer, from the government accredited list under How to appoint a panel engineer.

Consideration should also be given to the potential impacts of development on the operation of reservoirs. This is particularly important where impacts could affect the management of flood risk or the supply of water.

The site reports in Appendix A show there to be three sites at risk from reservoir flooding according to the RFM, namely P013 (West Craven Business Park Extension), P081 (New Road Garage Site, Earby) and P257 (Giles Street, Nelson). The LPA may wish to follow the above guidance for these sites. However, this is for wider consideration within the local planning authority and emergency planning teams outside of the Level 2 SFRA.

5.4 Assessing flood risk from groundwater

Susceptibility of areas to groundwater flooding has been appraised at each potential site allocation using JBA's national 5m resolution Groundwater Flood Map which is much more refined that the British Geological Survey (BGS) datasets.

In creating this map, a team of hydrogeologists and flood risk specialists modelled how and where groundwater levels would rise following prolonged periods of rainfall, considering factors such as topography, groundwater recharge volumes and spatial variations in aquifer storage and transmission properties.

The model outputs were validated against recorded groundwater levels for past flood events and checked against areas historically affected by groundwater flooding. The high-resolution maps make it easier for users to pinpoint and report risks from groundwater flooding.

See the site-specific reports in Appendix A for groundwater flood risk to each potential site allocation.

5.5 Assessing flood risk from sewers

Recent historic sewer flooding incident data has not been provided for consideration within this Level 2 SFRA. Risk from nearby sewer and drainage networks must be assessed at the site-specific FRA stage.

5.6 Assessing historic flood risk

The EA's Historic Flood Map (HFM) and Recorded Flood Outlines (RFO) datasets have been considered.

5.7 Assessing access and escape routes, and emergency planning

EA Flood Warning Areas and Flood Alert Areas have been mapped and reviewed against the potential site allocations along with potential safe access and escape routes for each site during a flood event. Liaison with emergency planners and the local resilience forum may be required at the FRA stage. See Appendix A site reports.

5.8 Cumulative impacts

Cumulative impacts of development and land use change were assessed in the Level 1 SFRA. A joined-up approach should be adopted between developers at the FRA stage for any clusters of sites to ensure possible flood risk mitigation at one site does not increase risk to a neighbouring or downstream site as a result of loss of floodplain storage, the deflection or constriction of flood flow routes, or through inadequate management of surface water. Para 048 of the FRCC-PPG states that site-specific flood risk assessments should assess cumulative impacts and demonstrate how mitigation measures have addressed them.

The site reports in Appendix A recommend for any clusters of sites at significant risk to be combined into a wider drainage strategy and masterplanning process.

5.9 Working with Natural Processes

The national Working with Natural Processes (WwNP) mapping dataset has been assessed as to whether there is any potential for WwNP techniques, such as flood storage, that could benefit potential site allocations. See Appendix A site reports for any potential areas.

6 Level 2 site assessments

Eight individual detailed Level 2 site screening reports have been produced detailing the site-specific assessments carried out through this Level 2 SFRA. Table 6-1 summarises the outcomes from the Level 2 assessment at each site.

6.1 Summary of Level 2 outcomes

Site ID	Site name	How has main risk been identified?	Key messages from the Level 2 assessment	Main barriers to development	Further work / next steps
P013	Land north of West Craven Business Park	Earby Beck 2018 / Earby Beck Phase 2 2021 models. RoFSW including climate change modelling	Based on current information, this site could be allocated if development avoids the area at modelled fluvial risk in the modelled 1% AEP undefended event and the areas of the site at significant surface water risk. Were this site to be allocated based on current information, the LPA must make it clear that this site cannot be developed until the required information detailed in this SFRA on future flood risk from Earby Beck and the drain is fully ascertained.	Risk from Earby Beck. Surface water flood risk.	Updated modelling of Earby Beck including for climate change

Site ID	Site name	How has main risk been identified?	Key messages from the Level 2 assessment	Main barriers to development	Further work / next steps
P014	Land at South Woodclough Platts	Sefton Street 2021 model. RoFSW including climate change modelling	Updated climate change modelling on the Sefton Street model should be used to update this Level 2 SFRA or to inform the sites- specific FRA. Detailed drainage strategy required to ensure there is no increase in surface water flood risk offsite, including for detailed surface water modelling. Residual risk from the canal and culverted watercourse must be accounted for. Were this site to be allocated based on current information, the LPA must make it clear that this site cannot be developed until the required information detailed in this SFRA is fully ascertained.	Surface water flood risk. Potential residual risk.	Drainage strategy. Investigation into potential residual risk.
P052	Former Railway Sidings	Sefton Street 2021 model. RoFSW including climate change modelling	Updated climate change modelling on the Sefton Street model should be used to update this Level 2 SFRA or to inform the sites- specific FRA. Detailed drainage strategy required to ensure there is no increase in surface water flood risk offsite, including for detailed surface water modelling. Residual risk from the culverted watercourse must be accounted for. Were this site to be allocated based on current information, the LPA must make it clear that this site cannot be developed until the required information	Risk from Sefton Street Watercourse. Surface water flood risk. Potential residual risk.	Drainage strategy. Investigation into potential residual risk.

Site ID	Site name	How has main risk been identified?	Key messages from the Level 2 assessment	Main barriers to development	Further work / next steps
			detailed in this SFRA is fully ascertained.		
P060	Former Mansfield High School	RoFSW including climate change modelling	Detailed drainage strategy required to ensure there is no increase in surface water flood risk offsite, including for detailed surface water modelling.	Surface water flood risk.	Drainage strategy.
P068	Land at Barnoldswick Road / Colne Road	RoFSW including climate change modelling	It should be appropriate to develop this site for more vulnerable purposes given its location in Flood Zone 1 and manageable surface water flood risk.	Surface water flood risk.	Drainage strategy.
P081	New Road Garage Site, New Road	Earby Beck 2018 / Earby Beck Phase 2 2021 model. RoFSW including climate change modelling	Updated climate change modelling on the New Cut watercourse should be carried out at the FRA stage to provide a robust assessment of flood risk to this site and the surrounding areas. Were this site to be allocated based on current information, the LPA must make it clear that this site cannot be developed until the required information detailed in this SFRA on future flood risk from New Cut is fully ascertained.	Absence of modelled climate change information	FRA
P257	Land at Giles Street	Hendon Brook 2018 model. RoFSW including climate change modelling	Based on current information, the exception test cannot be passed for this site as it cannot, at this stage, be proven that the site can be safe for its lifetime, in the absence of updated modelled climate change information. The lead local flood authority must be consulted on the surface water flood risk.	Risk from Hendon Brook and Walverden Water. Surface water flood risk. Potential residual risk.	Updated modelling of Hendon Brook and Walverden Water including for climate change.

Site ID	Site name	How has main risk been identified?	Key messages from the Level 2 assessment	Main barriers to development	Further work / next steps
P309	Land at Jackdaw Road	RoFSW including climate change modelling	It should be appropriate to develop this site for less vulnerable purposes given its location in Flood Zone 1. A detailed drainage strategy will be required to ensure there is no increase in surface water flood risk elsewhere as a result of new development. Surface water flood risk should be retained onsite. This will require detailed surface water modelling based on layout plans and detailed design and full consultation with the LLFA on required runoff rates. The use of infiltration SuDS should be investigated. Residual risk from the canal must be accounted for. Were this site to be allocated based on current information, the LPA must make it clear that this site cannot be developed until the required information detailed in this SFRA is fully ascertained.	Surface water flood risk. Potential residual risk.	FRA





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