

Flood Risk Assessment

14 Lockett Street
Manchester
M8 8EE

July 2025

1. Introduction

This **Flood Risk Assessment (FRA)** has been prepared to support the proposed change of use of the existing one-storey warehouse at **14 Lockett Street** into a food production facility. The proposal involves converting an existing wholesale warehouse into a food production facility which will serve other food providers.

This FRA has been prepared in line with the national guidance and requirements set out in the National Planning Policy Framework (NPPF) and National Planning Policy Guidance (NPPG), which provide clear guidance for preparing site-specific flood risk assessments.

The assessment has also been prepared in accordance with local guidance requirements, including Manchester City Council's Local Development Framework (2012), and the Manchester, Salford and Trafford Councils' Level 1 and Level 2 Strategic Flood Risk Assessments (SFRA) dated March 2010 and March 2011 respectively.

The purpose of this FRA is:

- To consider all potential flood risks to the site.
- To identify measures to reduce those risks to acceptable levels.
- To ensure that the development will not increase flood risk elsewhere.

(References: NPPF, NPPG, MCC Local Development Framework, Manchester-Salford-Trafford SFRA)

2. Site Setting and Description

2.1 Site Location

The site is situated within a predominantly commercial area of Strangeways, close to the junction of Bury New Road and Lockett Street.

The co-ordinates to the centre of the site are approximately: Easting 383454 and Northing 399696.

A site location plan is included in Appendix A, with the site boundary edged in red.

2.2 Existing Site

The site is already developed and contains a 1-storey property previously used as a wholesale warehouse. There is a courtyard opening in the south acting as a back entrance to the property.

Existing floor plans and elevation drawings are included in Appendix B.

2.3 Proposed Development

The proposed development comprises the change of use of the building from a wholesale warehouse into a single food production facility serving other food providers.

There are no extensions or alterations proposed to the building footprint.

Proposed floor plans and elevation drawings are included in Appendix C.

2.4 Topography

Ordnance Survey mapping indicates that the local topography gently falls towards the west and south-west towards the River Irwell.

Ground levels across the site are in the region of 27.3m AOD (Above Ordnance Datum).

A digital OS plan with AOD levels is included in Appendix A.

2.5 Coast / Rivers / Canals and Artificial Water Bodies

The nearest waterbody to the development site is the River Irwell, classified as a main river, which flows generally southwards and passes approximately 250m to the south-west of the site.

There are no known canals or artificial water bodies in the immediate vicinity.

2.6 Drains and Sewers

The exact locations of any public water mains or drains within the development site are to be confirmed prior to commencing works. Due to the urban nature of the site, it is assumed that public drains and water mains are located nearby.

The proposed development will not involve any new connections to the existing drainage system.

2.7 Ground Conditions

According to information obtained from the British Geological Survey (BGS), the site is underlain by superficial deposits of Alluvium (comprising clay, silt, sand and gravel) and Glacial Till, overlying Triassic Chester Formation sandstone bedrock.

Due to the relatively low permeability of the superficial deposits and the urban characteristics of the site, the majority of surface water runoff will discharge to the urban drainage network.

The proposed change of use does not involve any external alterations or extensions.

3. National and Local Policy and Water Management Guidance

3.1 National and Local Policy and Water Management Guidance

The National Planning Policy Framework (2019) sets out the Government's national policy on development and flood risk. It provides clarity on what is required at regional and local levels to ensure that flood risk is considered at all stages in the planning process, to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk.

NPPF Paragraphs 149 to 150 set out that plans should take a proactive approach to mitigating and adapting to climate change, taking account of the long-term implications for flood risk.

NPPF Paragraphs 155 to 165 provide guidance on planning and flood risk. Plans should apply a sequential, risk-based approach to the location of development, taking into account current and future impacts of climate change, ensuring that flood risk is not increased elsewhere as a result of the development, and incorporating sustainable drainage systems where appropriate.

NPPG Paragraph 030 outlines that the objectives of this FRA are to establish whether the proposed development is likely to be affected by current or future flooding from any source, whether it will increase flood risk elsewhere, whether the measures proposed to deal with these effects and risks are appropriate, whether there is sufficient evidence for the Local Planning Authority to apply the Sequential Test, and whether the development will be safe and pass the Exception Test, if required.

3.2 Flood and Water Management Act

The Flood and Water Management Act takes forward proposals from previous strategy documents published by the UK Government, Future Water (2008), Making Space for Water (2008), and the Government's response to the Sir Michael Pitt Review of the 2007 floods. The Act gives the Environment Agency a strategic overview role for flood risk and gives local authorities responsibility for preparing and implementing strategies for managing flood risk from groundwater, surface water, and ordinary watercourses in their areas.

3.3 Strategic Flood Risk Assessment (SFRA)

The Manchester, Salford and Trafford Councils' Level 1 (2010) and Level 2 (2011) SFRAs assess

flood risk from all sources, including rivers, surface water, drains and groundwater, providing evidence for Local Planning Authorities to apply the Sequential and Exception Tests.

The SFRA identifies areas at greatest risk and set out guidance for flood risk mitigation for new development and redevelopment proposals.

3.4 Manchester City Council's Local Development Framework

The Core Strategy (Adopted July 2012) sets out local planning policies for 2012 to 2027. Policy EN14 (Flood Risk) states that, in line with the sequential approach in PPS25, development should be directed away from sites at the greatest risk of flooding and towards sites with little or no risk. This assessment should take account of all sources of flooding identified in the Manchester - Salford - Trafford SFRA.

In addition to the requirements for site-specific Flood Risk Assessments set out in PPS25, an appropriate FRA is also required for all development proposals, including changes of use, on sites greater than 0.5 hectares within Critical Drainage Areas (CDAs) and Canal Hazard Zones identified in the SFRA.

All new development should minimise surface water run-off, including through the use of Sustainable Drainage Systems (SUDS) and appropriate Green Infrastructure. Developers should have regard to surface water runoff rates in the SFRA User Guide. In CDAs, evidence to justify the surface water runoff approach and rates will be required.

The City of Manchester includes many sections of rivers that are channeled or hidden. Where these are indicated in the SFRA beneath a proposed development site, further investigation may be required. Where feasible and appropriate, development should seek to open up culverted rivers to reduce the associated flood risk and risk of collapse, while enhancing biodiversity and Green Infrastructure.

4. Sources of Flooding

In accordance with the NPPF, flood risk must be assessed for all sources of flooding, and development of the site should mitigate any potential flood risk to the site and to surrounding property. The following are the principal possible sources:

4.1 Fluvial Flooding

Fluvial flooding arises from watercourses exceeding capacity and overtopping their banks.

4.2 Coastal Flooding

Coastal flooding results from high tides or storm surges. The site is inland and is not at risk from coastal flooding.

4.3 Pluvial Flooding

Pluvial flooding arises from rainfall-generated overland flow before runoff enters any watercourse, drain, or sewer. It is usually linked to high-intensity rainfall events (more than 30mm per hour) but can also result from lower-intensity rainfall when the ground is saturated or has low permeability, leading to ponding and overland flow.

In urban areas, pluvial flows often follow roads and surface routes to low spots, where flooding can occur. In some cases, flows can deviate into adjacent properties.

4.4 Groundwater Flooding

Groundwater flooding occurs when water emerges from sub-surface strata if the groundwater table rises above ground level. These events tend to have long durations, lasting days or weeks.

4.5 Flooding from Drains and Sewers

Flooding from drains and sewers happens when their capacity is exceeded, resulting in flooding from manholes and gullies.

4.6 Canals, Reservoirs, and Other Artificial Sources

Flooding from canals, reservoirs, or artificial sources can arise if capacity is exceeded or if there is infrastructure failure.

5. Sourced Data

Data has been obtained from the Environment Agency, the Strategic Flood Risk Assessments, and other relevant authorities to understand the flood risk at this specific site.

5.1 Environmental Agency Flood Map for Planning

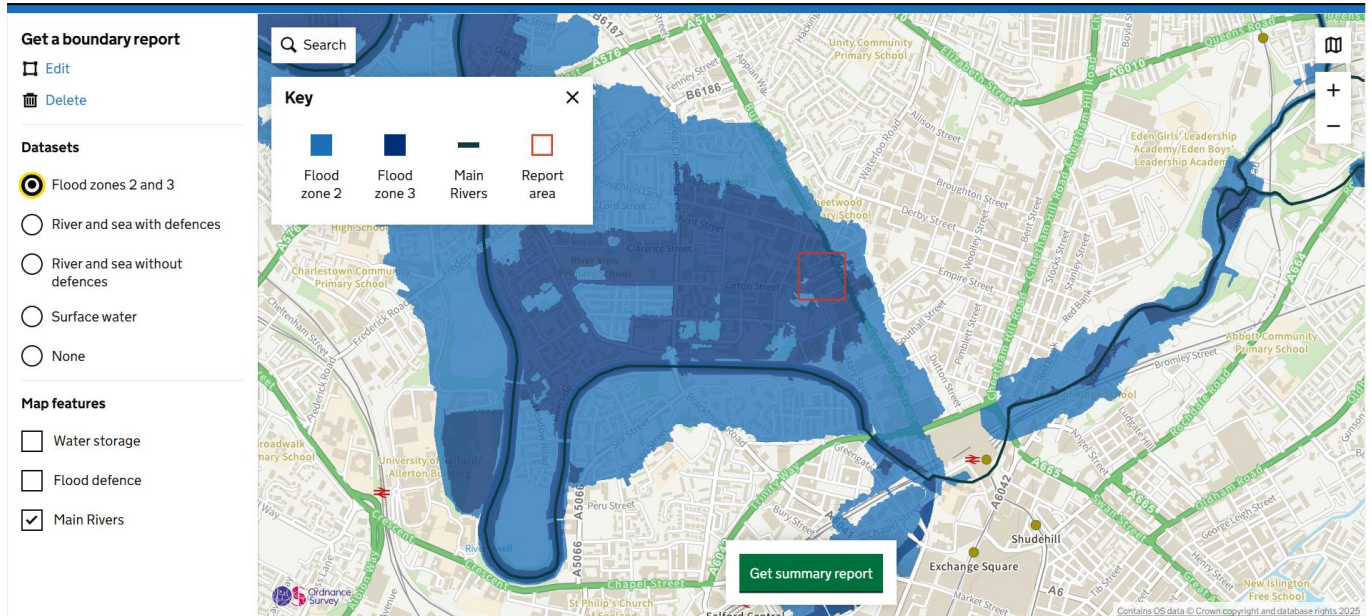


Figure 1 – EA Risk Map of the site in Zone 2-3

The Environment Agency's Flood Map shows that 14 Lockett Street lies within Flood Zone 3, indicating a high probability of fluvial flooding from the River Irwell. This means there is more than a 1% annual chance of flooding in any given year.

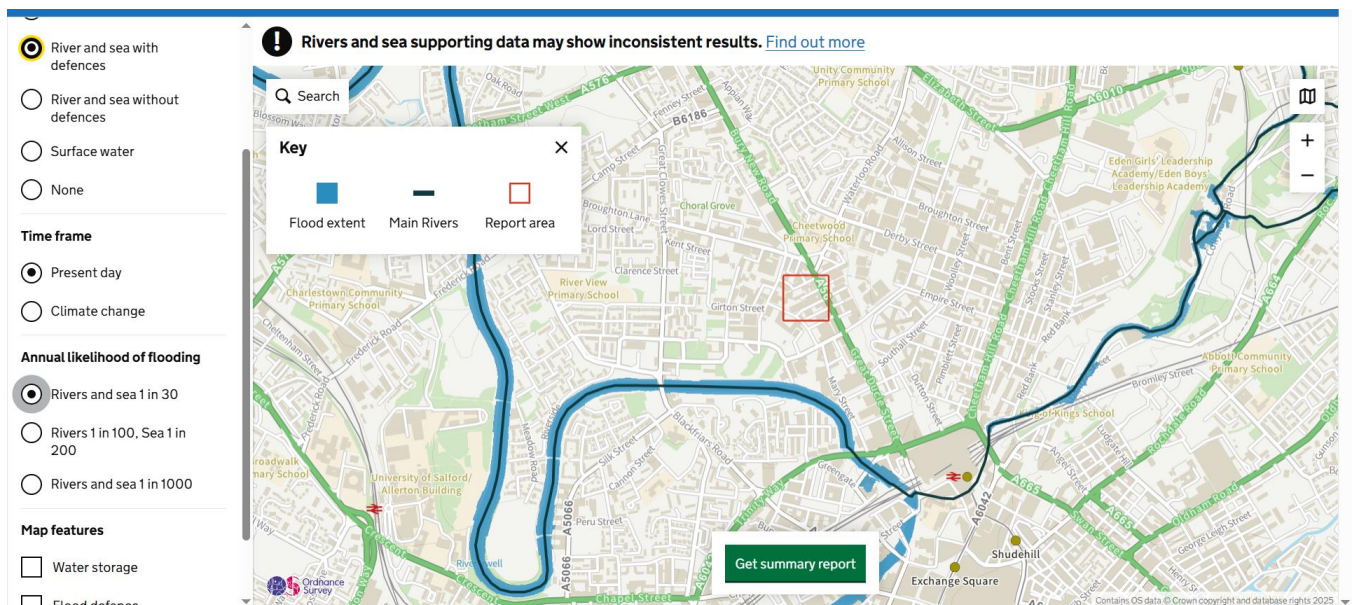


Figure 2 – River and sea with defences showing likelihood as 1 in 30

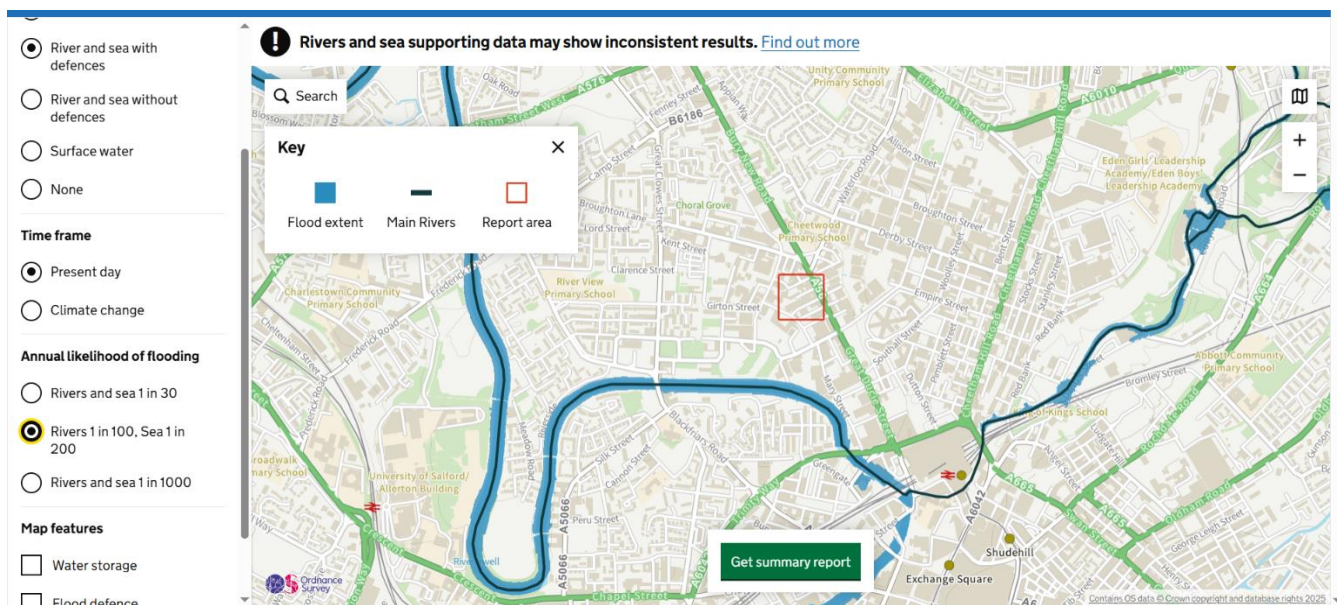


Figure 3 – River and sea with defences showing likelihood as 1 in 200

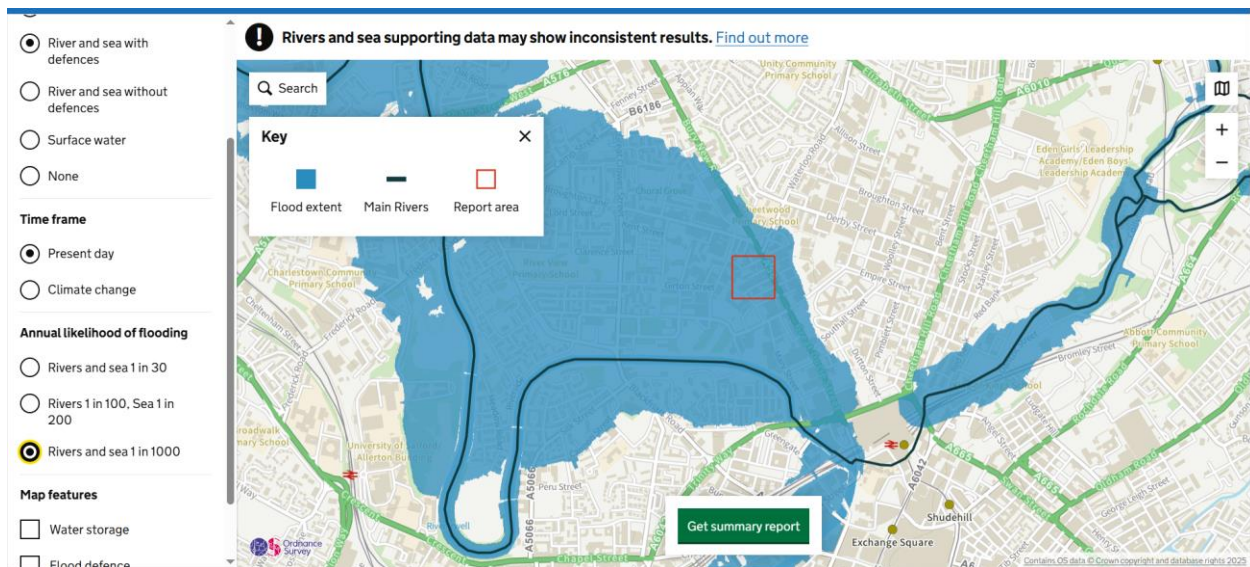


Figure 4 – River and sea with defences showing likelihood as 1 in 1000

Flood Mapping with Defences – Summary

Figures 2, 3, and 4 (<https://flood-map-for-planning.service.gov.uk/map>) illustrate the Environment Agency flood mapping for rivers and the sea, taking into account the presence of existing flood defences. The mapping shows varying levels of likelihood depending on the severity of the flood event:

In the 1 in 30 year event (approximately a 3.3% annual probability), the site is predicted to be affected by flooding despite the presence of defences.

In the 1 in 200 year event (a 0.5% annual probability), the extent and depth of flooding increase significantly across the area.

In the 1 in 1,000 year event (a 0.1% annual probability), the flood mapping indicates widespread inundation, with the site at risk of deep and extensive flooding.

This information confirms that although flood defences reduce the likelihood of flooding in more frequent, lower magnitude events, the residual risk remains significant during extreme events, and appropriate mitigation and management measures must be incorporated into the development proposals.

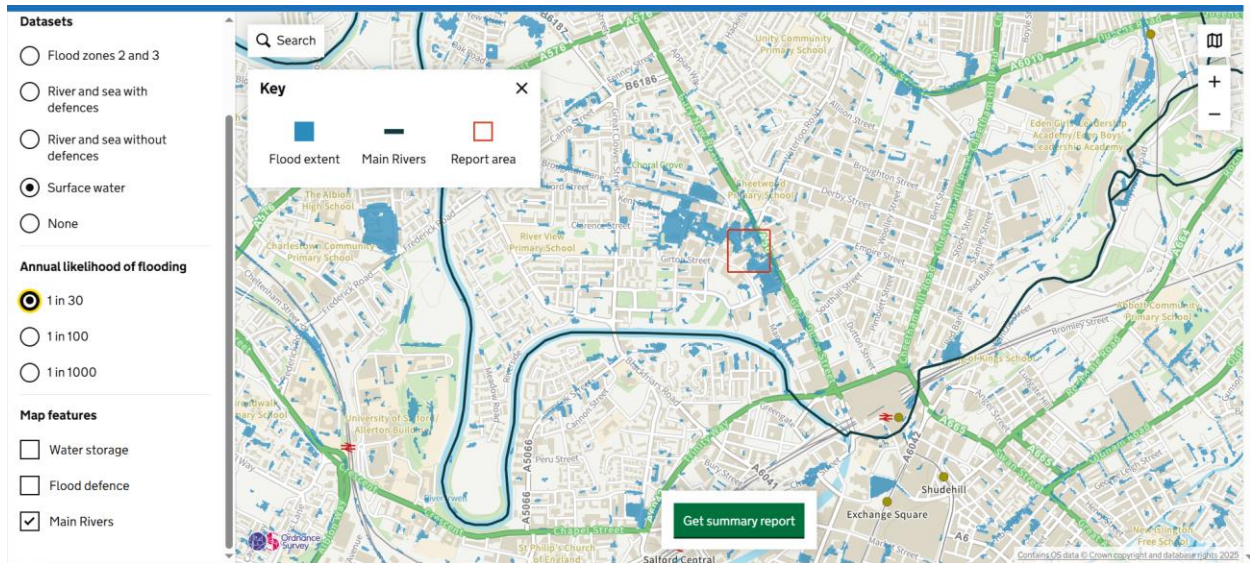


Figure 5 – Surface water showing likelihood as 1 in 30

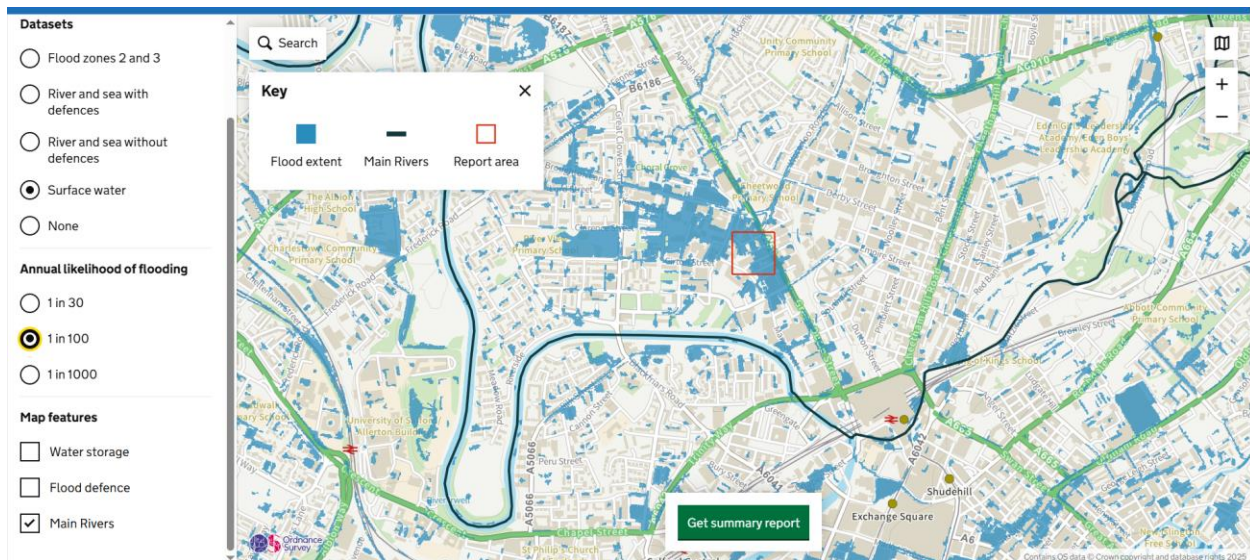


Figure 6 – Surface water showing likelihood as 1 in 100

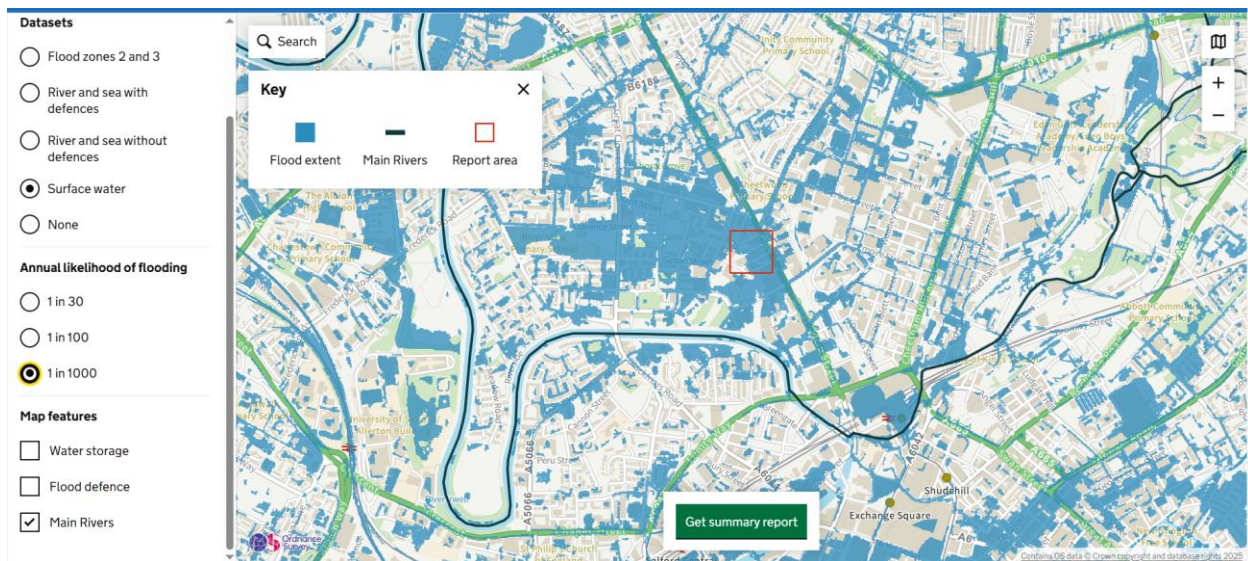


Figure 7 – Surface water showing likelihood as 1 in 1000

Figures 5, 6, and 7 illustrate (<https://flood-map-for-planning.service.gov.uk/map>) the predicted likelihood of surface water flooding across the site. The mapping shows that in the 1 in 30 year event (approximately a 3.3% annual chance), parts of the site could experience shallow surface water accumulation. During the 1 in 100 year event (1% annual chance) and the 1 in 1,000 year event (0.1% annual chance), the extent and depth of surface water flooding increase, although such events remain infrequent. Overall, while there is some potential for surface water flooding during intense rainfall, it is considered a relatively rare occurrence.

5.2 Environment Agency Climate Change Allowances

The Environment Agency’s guidance (February 2016) for the North West river basin requires a central allowance of 30% and a higher central allowance of 35% for increases in peak river flow due to climate change. The proposed development is classified as “Less Vulnerable,” and these allowances have been applied in assessing predicted flood levels.

5.3 Strategic Flood Risk Assessment (SFRA)

The Level 2 SFRA shows that the wider area, including this site, is subject to residual flood risk. The SFRA mapping indicates that during a 1 in 100 year event with climate change allowances, defences could overtop to the west, with flooding depths up to 1m in some locations.

In the 1 in 1000 year event, parts of the site could experience flooding exceeding 2m in depth.

SFRA records confirm that:

- Local canals are not considered a significant flood risk.
- The site is within a Critical Drainage Area due to the potential for overland flow and sewer exceedance.
- No recorded groundwater flooding has been reported in this location.

Conclusion

The data obtained from the Environment Agency, the Strategic Flood Risk Assessments, and other sources confirm that the primary flood risk to 14 Lockett Street arises from fluvial flooding associated with the River Irwell, especially during extreme events. There is also a residual but much lower probability of surface water flooding and reservoir failure. Overall, the information indicates that although the existing flood defences reduce risk in moderate events, the site remains vulnerable to flooding during more severe return periods and therefore requires appropriate mitigation and management measures.

6. Probability of Flooding

Based on the data reviewed, the probability of flooding from each source is assessed as follows:

6.1 Fluvial Flooding (River Irwell) – Probability: Medium

The River Irwell is approximately 250m to the southwest. The site is within Flood Zone 2, indicating medium probability (between 0.1% and 1% annual probabilities). Climate change allowances could increase flood levels to approximately 27.95m AOD.

The site ground level is around 27.3m AOD, indicating that in extreme flood events (such as the 1 in 1000 year event), significant flood depths could occur.

6.2 Groundwater Flooding – Probability: Low

While the SFRA mapping shows potential susceptibility to groundwater flooding, there are no records of such events affecting the site, and no basement development is proposed. The probability is therefore considered low.

6.3 Flooding from Drains and Sewers – Probability: Low

Although the exact locations of drains and sewers on the site must be confirmed, the Level 1 SFRA does not identify this area as having reported drainage problems. Accordingly, the risk is low.

6.4 Flooding from Canals, Reservoirs, and Artificial Sources – Probability: Low

EA mapping shows that a reservoir failure could flood the site to depths over 2m. However, the likelihood of such failure is extremely low due to statutory inspections and controls. The residual risk is recognised but remains very unlikely.

Conclusion

Based on the assessment, the site has a medium probability of fluvial flooding (Flood Zone 3a) and a low probability of groundwater, sewer, or canal flooding. While surface water flooding could occur during intense rainfall, it is considered infrequent. The residual risk remains significant in extreme events exceeding the design standard, and the development must incorporate measures to manage and reduce flood risk to an acceptable level.

7. Flood Risk and Vulnerability

Based on the data reviewed, the probability of flooding from each source is assessed as follows:

7.1 Flood Zone

According to the EA mapping and SFRA, the site falls within Flood Zone 2, which has a medium probability of fluvial flooding.

Flood Zone	Definition
Zone 1 – Low Probability	Land having less than a 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map, all land outside Zones 2 and 3.)
Zone 2 – Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map.)
Zone 3a – High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map.)
Zone 3b – Functional Floodplain	Land where water has to flow or be stored in times of flood. Local planning authorities identify these areas in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map.)

7.2 Flood Risk Vulnerability Classification

The proposed development at 14 Lockett Street involves converting the existing wholesale warehouse into a food production facility serving other food providers. Under the National Planning Practice Guidance, this type of use is categorised as “Less Vulnerable” in terms of flood risk. Less Vulnerable uses include general industry, storage and distribution premises, shops, and other non-residential buildings that do not need to remain operational during times of flood.

This classification means that, while the development must still demonstrate appropriate resilience and mitigation measures, it is considered suitable for locations within Flood Zone 3a

provided that adequate precautions are taken. The proposed change of use does not involve more sensitive uses, such as residential or essential infrastructure, which would be subject to more restrictive planning controls.

7.3 Flood Risk Vulnerability and Flood Zone “Compatibility”

Flood Zone	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water-Compatible Development
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test Required	✓	✓	✓
Zone 3a	Exception Test Required	X	Exception Test Required	✓	✓
Zone 3b	Exception Test Required	X	X	X	✓

NPPG Table 7.3 confirms that “Less Vulnerable” development within Flood Zone 2 is appropriate and does not require the Exception Test.

7.4 Flood Warning and Evacuation Plan

The site operators will register with the Environment Agency’s flood warning service to receive alerts by phone, text, or email. A flood plan will be prepared before occupation, detailing evacuation procedures, equipment protection, and contact details. This will be provided to occupants and retained with site records.



Figure 8 – Quick actions when flooding is expected

<u>Flood Alert</u> 	Key Message: Flooding is possible. Be prepared Timing: 2 hours to 2 days in advance of flooding Actions: Be prepared for flooding Prepare a flood kit of essential items Monitor local water levels and flood forecasts <i>Flood Alerts are to warn people of the possibility of flooding and encourage them to be alert, stay vigilant and to make early preparations for flooding.</i>
<u>Flood Warning</u> 	Key Message: Flooding is expected. Immediate Action Required Timing: Half an hour to 1 day in advance of flooding Actions: Act now to protect your property Block doors with flood boards or sandbags and cover airbricks and other ventilation holes Move family, pets and valuables to a safe place Turn off gas, electricity and water supplies if safe to do so Keep a flood kit ready Move cars, pets, food, valuables and important documents to safety <i>Flood Warnings are to warn people flooding is expected and encourage them to take immediate action to protect themselves and their property.</i>
<u>Severe Flood Warning</u> 	Key Message: Severe flooding. Danger to life Timing: When flooding poses a significant threat to life and different actions are required Actions: Stay in a safe place with a means of escape Be ready should you need to evacuate from your home Co-operate with the emergency services Call 999 if you are in immediate danger <i>Severe Flood Warnings are to warn people of a significant risk to life or significant disruption to communities caused by widespread or prolonged flooding, and encourage them to take immediate action to protect themselves and follow the advice of the emergency services.</i>

Table 7.4 Flood Warning in stages with immediate actions

7.5 Surface Water Management

As no external alterations or extensions are proposed, there will be no increase in surface water run-off rates. Existing drainage connections will be retained.

7.6 Residual Risk

While it is not possible to remove all risk, appropriate design measures, flood warning registration, and management procedures will reduce the likelihood of damage from flooding events exceeding design levels.

7.7 Responsibilities

The building owner or occupier will be responsible for maintaining the drainage network to ensure effective management of flood risk over the lifetime of the development.

Appendix A



1 Proposed Site Location & Plan
1 : 500

GENERAL NOTES
1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS OF THE DRAWINGS ISSUED AS READ ONLY. ALL DIMENSIONS AND LEVELS SHOULD BE READ ONLY FROM THESE VALUES STATED IN TEXT ON THE DRAWING.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND THEIR CORRESPONDING SPECIFICATIONS.
4. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT BUILDING REGULATIONS AND ALL RELEVANT BUILDING CODES OF PRACTICE.
5. ALL CONTRACTORS SHALL BE RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE WORKS ON SITE. CONTRACTORS MUST VISIT THE SITE AND BE RESPONSIBLE FOR TAKING AND CHECKING ALL DIMENSIONS RELATIVE TO THEIR WORK AND PRIOR TO FABRICATION OF MATERIALS.
6. ALL ARCHITECTS ARE TO BE ADVISED OF ANY VARIATION BETWEEN DRAWINGS AND SITE CONDITIONS.
7. COPYRIGHT OF THIS DRAWING IS RESERVED IN NAME ARCHITECTS AND IF MUST NOT BE COPIED OR REPRODUCED WITHOUT WRITTEN CONSENT. FIGURES DIMENSIONS ONLY ARE TO BE TAKEN FROM THE DRAWING. DO NOT SCALE OFF THIS DRAWING.
8. IN DOUBT ASK

P1 Issued for Planning 07-05-25
Rev Description By Date

MUSE
Architects

14 Lockett St
Proposed Site Location & Plan

DRAWING TITLE			
Planning			
DRAWING STATUS			
DRAWN: MJ	DESIGNED: MBM		
APPROVED: MBM	DATE: 25.04.25		
1 : 500	180_00_002	P1	(A2)
SCALE	DRAWING NUMBER	REV	

Appendix B



Appendix C

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

2. ELECTRONIC DATA DRAWINGS ISSUED AS READ-ONLY AND SHALL BE ARCHIVED FOR REFERENCE. ALL DIMENSIONS AND LEVELS SHOWN IN THIS ONLY FROM THOSE VALUES STATED IN TEXT ON THE DRAWINGS.

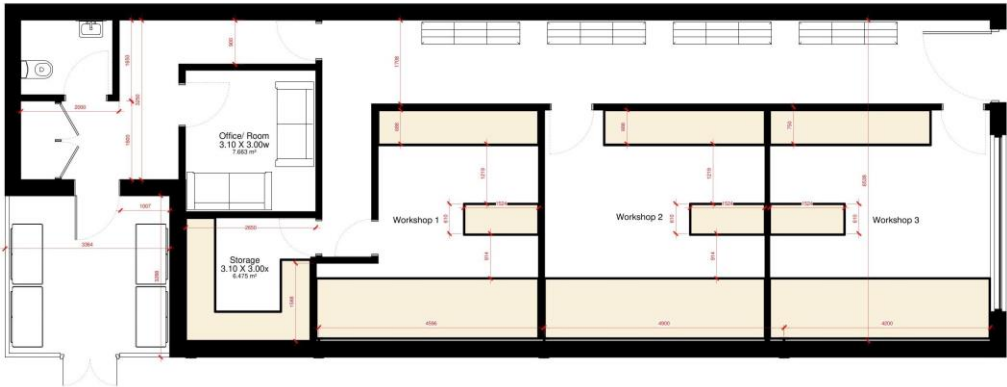
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND THEIR CORRESPONDING SPECIFICATIONS ACCORDING WITH CURRENT BUILDING REGULATIONS AND ALL RELEVANT METRIC CODES OF PRACTICE.

4. ALL WORK SHALL BE COMPLETED ACCORDING WITH THE BUILDING CODES OF PRACTICE.

5. ALL CONTRACTORS SHALL BE RESPONSIBLE FOR THE CORRECT SETTING OUT OF THE WORKS ON SITE. CONTRACTOR MUST VISIT THE SITE AND BE RESPONSIBLE FOR THE WORKS AND CHECKING ALL DIMENSIONS PRIOR TO THE START OF THE WORK.

6. MUSIC ARCHITECTS ARE TO BE ADVISED OF ANY VARIATION BETWEEN DRAWINGS AND SITE CONDITIONS.

7. COPYRIGHT OF THIS DRAWING IS RESERVED IN MUSIC ARCHITECTS AND IT MUST NOT BE COPIED OR REPRODUCED WITHOUT WRITTEN CONSENT. FURTHER DIMENSIONS ONLY ARE TO BE TAKEN FROM THIS DRAWING. DO NOT SCALE OFF THIS DRAWING. IF PLOTTED 50%.



1 Proposed Ground Floor
1 : 50

P1: Issued for Planning 07-05-25
Rev Description By Date

MUSE
Architects

14 Lockett St
PROJECT
Proposed Ground Floor Plan

DRAWING TITLE				
Planning				
DESIGNED BY	MM	CHECKED BY	MM	
DRAWN BY	MM	DATE	25.04.25	
SCALE	1:50	DRAWING NUMBER	P1	REV (A2)

