



No.1 Lord Street, Manchester

Combined Drainage Statement and Strategy Stage 3 Report

November 2025

PREPARED FOR

Linear Living

Combined Drainage Statement and Strategy Stage 3 Report

Prepared By	Zakir Hafeji		
Reviewed By	Chris Kendrick CEng MICE		
Report Reference	NO1LOR-CIV-SI-XX-RP-C-30002-S3-P01_Combined FRA and Drainage Strategy Report		
Issuing Company	Civic Engineers Limited		
Issued	05/12/2025 – Draft Issue		
Revisions			
Date	Rev	Reason	Name
11/12/25	01	Initial Issue	Zakir Hafeji
15/01/25	02	Updated Layout and Drainage Strategy	Zakir Hafeji

This report is the copyright of the issuing Civic group company and is intended solely for the use of the individual or organisation to whom it is addressed. It may not be disclosed, reproduced, or referred to in whole or in part by any other party without the prior written consent of the relevant Civic group company. No liability is accepted by any Civic group company for any loss or damage arising from any unauthorised use of this report.

"Civic" is a trading name used by companies within the Civic Plus Limited group (registered number: 14208271), including Civic Engineers Limited (registered number 06824088), Civic Plus Limited (registered number: 752376), Civic Earth Limited (registered number 14897633), Civic Heritage Limited (registered number 15913145), Civic MEP Limited (registered number 09245443), Civic Rail Limited (registered number 15913179) and New Practice Limited (registered number SC623648). All are private limited companies registered in England at Carvers Warehouse, 77 Dale Street, Manchester M1 2HB. Except for Civic Plus Limited (registered number: 752376), which is registered in the Republic of Ireland at 36 Lad Lane, Baggot Street Lower, Dublin D02 T208 and New Practice Limited, which is registered in Scotland at 35 Virginia Street, Glasgow, G1 1TN.

© Civic 2026

Contents

Contents	2
1. Introduction	4
2. Site Details	5
2.1. Location	5
2.2. Site Historical and Current Use	5
2.3. Topography	5
2.4. Geology	5
2.5. Hydrology and Drainage Infrastructure	5
2.6. Existing Watercourses and Waterbodies	6
3. Planning Policy Context	7
3.1. Relevant Legislation, Policies and Guidance	8
3.2. National Planning Policy Framework (NPPF)	8
3.3. Manchester City Council Strategic Flood Risk Assessment (SFRA) and Manchester Core Strategy 2024	10
3.4. Places for Everyone Joint Development Plan 2024 Policy JP-S4	10
4. Flood Risk Assessment	11
4.1. Criteria for Assessment	11
4.2. Historical Flooding	12
4.3. Tidal/ Fluvial (Rivers and Sea) Flood Risk	12
4.4. Surface Water Flooding to the Site / Pluvial	13
4.5. Reservoir Flood Risk	14
4.6. Canals Flood Risk	14
4.7. Sewer Flood Risk	14
4.8. Impacts of Climate Change	14
4.9. Summary of Flood Risk	14
5. Drainage Strategy	15
5.1. Surface Water Management	15

5.2.	Surface Water Drainage Design.....	16
5.3.	Foul Water Drainage Strategy.....	16
6.	Conclusion	17
Appendix A: Proposed Development – Site Layout.....		18
Appendix B: Topographical Survey.....		19
Appendix C: Geo-Environmental Report.....		20
Appendix D: Existing Sewer Records.....		21
Appendix E: Environment Agency’s Flood Map.....		22
Appendix F: Drainage Strategy.....		23

1. Introduction

Civic Engineers Ltd. has been appointed by Linear Living to prepare a Drainage Statement in support of a new planning application for the proposed development (the 'Site') at Lord Street, Manchester.

The development comprises a residential multi-storey tower block of 23 storeys with a ground floor, accommodating 251 units. The scheme is intended to be low-car in nature, with an area of public realm and landscaping adjacent to the boundary with the existing petrol station.

The Site is located approximately 450m to the north of Manchester Victoria Station. Bounded by an elevated section of Cheetham Hill Road to the west, Lord Street to the north, Fernie Street to the east and an existing petrol station to the south.

This statement intends to provide an overview of drainage proposals for the development, including information on:

- Existing drainage characteristics.
- Investigate all potential risks of flooding to the site.
- Consider the impact the development may have elsewhere regarding flooding.
- Consider proposals to mitigate any potential risk of flooding determined to be present; and,
- Consider drainage proposals to mitigate flood risk from the site.

This document is based on currently available information held by Civic Engineers Ltd. and all comments and conclusions contained within are based upon the assumption that the sourced data is reliable. Civic Engineers Ltd. accepts no liability for any inaccurate conclusions or assumptions resulting from inaccurate information. Proposals presented in this report represent the design intent and may be subject to alteration or adjustment in finalising the detailed design for this project.

2. Site Details

2.1. Location

The location of the proposed development is shown in Figure 1.

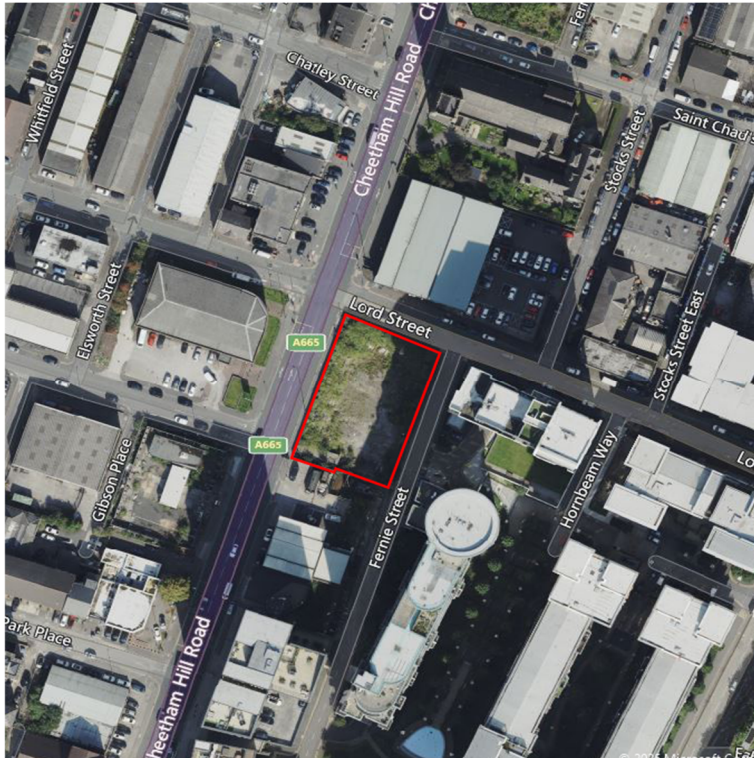


Figure 1: Site location with an indicative red line boundary

The Site is located approximately 450m to the north of Manchester Victoria Station, centred at an approximate National Grid Reference of 384139, 399432. The nearest postcode to the Site is M4 4EX.

The total area encompassed by the red line boundary of the proposed development is 0.161ha. A site location plan (NO1LOR-AEW-XX-00-DR-A-21000-P03-Proposed GA Plan – Ground) is included in Appendix A of this statement.

2.2. Site Historical and Current Use

Historical mapping indicates that the site was originally open ground or fields before being developed with unidentified buildings, likely terraced housing. Over time, these buildings were gradually removed, with only a few structures remaining in the northern corner in later records.

In its more recent configuration, the site contained a warehouse building situated in the south-eastern corner, with access from both Cheetham Hill Road and Fernie Street, as well as a dilapidated skeletal-framed structure located in the north-eastern corner. These structures have since been demolished. The site now consists predominantly of tarmac hardstanding, areas of rough ground, and patches of dense vegetation.

Access to the land in the immediate surrounding of the Site is restricted by a 2.4m high hoarding. Vehicular access is facilitated through two swing gates located on Fernie Street, which are further obstructed by two temporary barriers.

2.3. Topography

A topographical survey was carried out by N D Oliver & Co. in January 2025, with full survey data included in Appendix B of this statement. The findings indicate that approximately 80% of the site is impermeable, primarily due to areas of existing hardstanding such as tarmac and rough ground surfaces. The survey also provides detailed elevation data across, which has been used to assess surface water flow and inform drainage and flood risk considerations.

The site features an elevated section along its western boundary adjacent to Cheetham Hill Road, with ground levels reaching approximately 45.30m AOD. From this point, there is an abrupt drop of approximately 3metres. Beyond this, the site slopes gradually from the northwest to the southeast, falling from approximately 42.60m AOD to 40.20m AOD along Fernie Street.

2.4. Geology

A ground investigation was conducted by Enzygo, and the findings are detailed in the geo-environmental report prepared in May 2019. For a more detailed assessment of the ground conditions and any potential contamination, please refer to document SHF.258.002.GE.R.01, included within Appendix C of this statement.

2.5. Hydrology and Drainage Infrastructure

The United Utilities public sewer records that have been obtained by N D Oliver & Co. and dated January 2025, indicate that the site and surrounding area are

served by a combined sewer network.



Figure 2: United Utilities Public Sewer Records

A 400mm diameter discharging into a 375mm x 400mm egg-shaped combined sewer, and an existing 900mm x 1350mm egg-shaped sewer, are located in the northern part of the Site, running along Lord Street.

Additionally, a 600mm concrete combined sewer runs south along Cheetham Hill Road, while a 375mm combined sewer continues south along Fernie Street

All public and adopted sewers are subject to sewer easements, which are legal rights attached to the land. These easements ensure that the local water authority retains access to inspect, maintain, repair, renew, or replace sewers located within private property. They also impose restrictions on development or activities within the easement zone to safeguard the integrity of the sewer infrastructure. The sewer records are enclosed within Appendix D and illustrated in Figure 2.

2.6. Existing Watercourses and Waterbodies

The nearest water body is the River Irk, which flows southeast, approximately 250m from the Site. Any proposed discharge to this water body must be agreed in advance with the Environment Agency (EA).

3. Planning Policy Context

The Environment Agency's (EA) Flood Map for Planning has been consulted and the Site is shown to lie within Flood Zone 1. A copy is enclosed within Appendix E of this statement and shown in Figure 3.

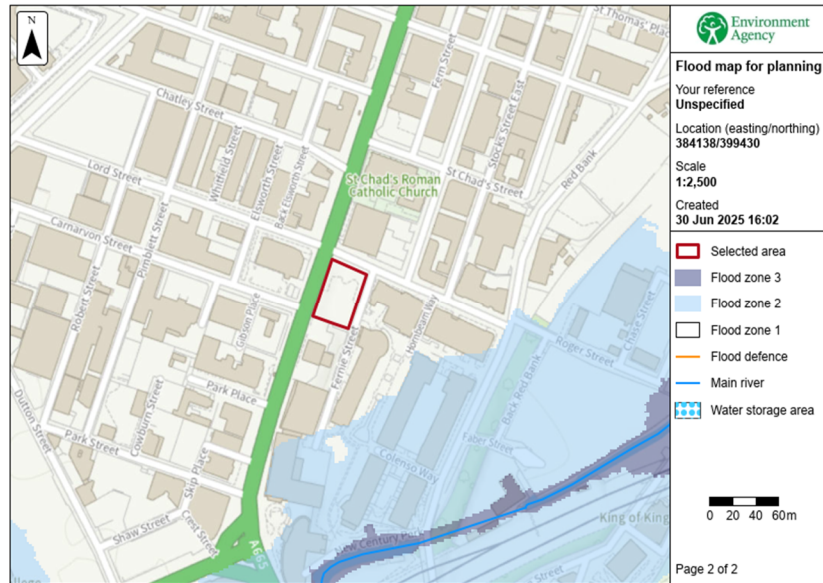


Figure 3: EA Flood Map for Planning

The National Planning Policy Framework (NPPF) 2024 states that a Flood Risk Assessment (FRA) is only required for sites within Flood Zone 1 where one or more of the following points apply:

- The development has a site area of 1 ha or more.
- The site lies within an area with critical drainage problems (areas of critical drainage problems are currently only located within Devon and Cornwall).
- The local planning authority's Strategic Flood Risk Assessment (SFRA) shows it will be at increased flood risk in future.
- The site is at risk from other sources of flooding and its development would increase its vulnerability classification.

Local planning authorities may stipulate individual requirements for FRAs for Civic

developments within their administrative area. Policy EN14 (Flood Risk) of the Manchester Core Strategy 2012 requires that developments with an area of greater than 0.5ha residing in Critical Drainage Areas (CDA) identified in the Manchester, Salford, Trafford SFRA 2011 will require submission of an FRA.

Whilst the Site lies within the 'Conurbation Core' CDA, as the area of proposals encompasses only 0.161ha, an FRA is not required as part of this planning application.

Sections of Policy EN14 and Policy EN17 (Water Quality) of the Manchester Core Strategy have been superseded by Places for Everyone (PfE) Policy JPS4, outlined in the Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022 to 2039, which was adopted by Manchester City Council on 2nd March 2024.

The following points detailed in PfE Policy JP-S4 are relevant to this planning application:

- Locating and designing development so as to minimise the impacts of current and future flood risk, including retrofitting or relocating existing developments, infrastructure and places to increase resilience to flooding;
- Expecting developments to manage surface water run-off through sustainable drainage systems and as close to source as possible. Development should achieve greenfield run-off rates unless it is demonstrated to be impracticable. District local plans should consider setting more detailed surface water drainage policies to reflect local circumstances, including alternative surface water discharge rates, such as in areas with critical drainage issues;
- Ensuring that sustainable drainage systems:
 - i. Are designed to provide multifunctional benefits wherever possible, including for water quality, nature conservation and recreation;
 - ii. Avoid adverse impacts on water quality and any possibility of discharging hazardous substances to ground;
 - iii. Are delivered in a holistic and integrated manner, including on larger sites split into different phases; and
 - iv. Are managed and maintained appropriately to ensure their proper functioning over the lifetime of the development.

3.1. Relevant Legislation, Policies and Guidance

This statement has been produced following the requirements of the NPPF and Planning Practice Guidance (PPG), as well as complying with or referencing the following regional or local policy and documentation

- Greater Manchester Combined Authority (GMCA) Level 1 Strategic Flood Risk Assessment (SFRA) 2019
- GMCA Hybrid Level 2 SFRA 2021
- Greater Manchester Surface Water Management Plan 2012
- Manchester Core Strategy Development Plan 2024
- Places for Everyone (PfE) Policy JP-S4 Flood Risk and the Water Environment
- Policy EN8 Adapting to Climate Change

Particularly relevant aspects of these documents and frameworks are presented in the following sections.

3.2. National Planning Policy Framework (NPPF)

The NPPF outlines planning policies within England and provides information on their application. The framework is supported by the PPG, which includes advice on the assessment and management of flood risk during the planning and development process.

With regard to flood risk, the NPPF primarily aims to steer development away from areas with an unacceptable risk of flooding and relocate them in areas deemed more appropriate. The NPPF refers to the Flood Zones which are shown on the Environment Agency Flood Map, and establishes the range of uses which are appropriate, or compatible, land uses for each Flood Zone

Annex 3 of the National Planning Policy Framework (NPPF) lists these land uses in the context of their flood risk vulnerability. The following extract below outlines the NPPF Flood Risk Vulnerability Classifications and their associated land uses

ESSENTIAL INFRASTRUCTURE

- Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk.
- Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including infrastructure for electricity

supply including generation, storage and distribution systems; including electricity generating power stations, grid and primary substations storage; and water treatment works that need to remain operational in times of flood.

- Wind turbines.
- Solar farms.

HIGHLY VULNERABLE

- Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding.
- Emergency dispersal points.
- Basement dwellings.
- Caravans, mobile homes and park homes intended for permanent residential use.
- Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure'.)

MORE VULNERABLE

- Hospitals
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non-residential uses for health services, nurseries and educational establishments.
- Landfill* and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

LESS VULNERABLE

- Police, ambulance and fire stations which are not required to be operational during flooding.
- Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure.
- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill* and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.
- Car parks.

WATER-COMPATIBLE DEVELOPMENT

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.

- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

The Flood Zones can be summarised as follows:

- **Zone 1:** Low Probability. This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any one year. (<0.1%)
- **Zone 2:** Medium Probability. This zone comprises land assessed as having between 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year.
- **Zone 3a:** High Probability. This zone comprises land assessed as having 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
- **Zone 3b:** Functional Flood Plain. This zone comprises land where water must flow or be stored in times of flood. Strategic Flood Risk Assessments should identify this zone.

The flood risk vulnerability and flood zone 'compatibility' has been summarised in Table 1 below. The EA presents a set of recommendations based on the level of vulnerability of a proposed structure and its flood zone.

Table 1: Flood Risk vulnerability and Flood Zone compatibility from NPPF Technical Guide

Flood Risk Vulnerability Classification		Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Flood Zone (See Table 1)	Zone 1	√	√	√	√	√
	Zone 2	√	Exception Test Required	√	√	√
	Zone 3a	Exception Test Required	x	Exception Test Required	√	√
	Zone 3b (functional floodplain)	Exception Test Required	x	x	x	√
√ Development is appropriate x Development should not be permitted.						

The flood zone categorisation for the site and evaluation of whether the development is appropriate is carried out in Section 32.2.

3.2.1. Sequential Test

A sequential test is one of the primary measures of mitigating flood risk and considers alternative available sites within the vicinity of a proposed development, assessing whether these have a lower risk of flooding than the currently proposed development location with the intention of prioritising development within areas with reduced flood risk. As the site is located in Flood Zone 1 the test is passed

3.2.2. Development Suitability

Where a sequential test has been passed or is not required, a comparison of a Site's flood risk probability and vulnerability, informed by the EA's Flood Map for Planning and a classification of vulnerability based on land use, determines the suitability of a development within a given location.

Flood Vulnerability Classification

The Planning Practice Guidance defines five classifications of flood vulnerability based on development usage: 'Water-Compatible', 'Less Vulnerable', 'More Vulnerable', 'Highly Vulnerable' and 'Essential Infrastructure'. Descriptions of developments encompassed by the classifications are provided in Section 3.2.

The development is categorised as more vulnerable based on its planned use (*'Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs, and hotels'*).

Assessment

To assess the suitability of a particular development within a given location, Table 1 is used to compare the proposed development's flood risk vulnerability classification with its Flood Zone and defines whether the development is considered appropriate, as well as outlining whether an Exception Test is required. A more vulnerable development within Flood Zone 1 is deemed appropriate

3.3. Manchester City Council Strategic Flood Risk Assessment (SFRA) and Manchester Core Strategy 2024

Manchester City Council SFRA states:

"Development should aim for a minimum reduction in surface water runoff rates of 50% for Brownfield sites, with an aim of reducing runoff to Greenfield rates up to a Civic

1 in 100 year storm event, considering climate change.

Development should be designed so that there is no flooding to the development in a 1 in 30 year event and so that there is no property flooding in a 1 in 100 year plus climate change event."

Policy EN 8 (Adapting to Climate Change) of the Manchester Core Strategy requires that:

- Expecting developments to manage surface water run-off through sustainable drainage systems and as close to source as possible.

Development should achieve greenfield run-off rates unless it is demonstrated to be impracticable. District local plans should consider setting more detailed surface water drainage policies to reflect local circumstances, including alternative surface water discharge rates, such as in areas with critical drainage issues.

3.4. Places for Everyone Joint Development Plan 2024 Policy JP-S4

The Places for Everyone Joint Development Plan is the Development Plan of nine Greater Manchester local authorities. It forms part of the council's statutory development plan following its adoption on 13th March 2024.

Policy JP-S4 (Flood Risk and the Water Environment) does not provide additional requirements for FRAs, however, the following aspects of the policy are relevant to the development of the drainage strategy for the proposed development.

- Developments are expected to utilise SuDS and source control, working with natural processes and adopting a natural flood management approach to slow runoff and intercept pollutants.
- SuDS should be designed to:
 - Provide multifunctional benefits (e.g., for water quality, nature conservation and recreation), wherever possible,
 - Be delivered in a holistic and integrated manner, including on larger sites split into separate phases, and
 - Be managed and maintained appropriately over the lifetime of the development.
- Developments should achieve greenfield runoff rates unless it is demonstrated to be impracticable.

4. Flood Risk Assessment

4.1. Criteria for Assessment

4.1.1. Design Flood

Estimation of probable flood levels across the site following a flood event is based on the 'design flood'. This is considered to be the following flood events with associated annual probabilities:

- River flooding with an annual probability of 1 in 100 (1%) in any given year.
- Tidal flooding with an annual probability of 1 in 200 (0.5%) in any given year.
- Surface water flooding with an annual probability of 1 in 100 (1%) in any given year.

The above events should include an allowance for climate change, as discussed in Section 4.1.2.

As the Site is located in Flood Zone 1 and has less than 1 in 1000 (<0.1%) annual probability of flooding from rivers and seas, the design flood is considered to be the 1 in 100-year surface water flood event (incorporating the relevant climate change allowance).

4.1.2. Climate Change Allowances

To account for changes to peak river flow, peak rainfall intensity, sea level rise, offshore wind speed and extreme wave height as a result of climate change, the EA publishes climate change allowances to enable future flood risk to sites to be assessed and to facilitate resilient design of developments.

The site is located within the Irwell Management Catchment, as defined by the Department for Environment, Food and Rural Affairs (Defra) Peak Rainfall Climate Change Allowances map.

The proposed development is expected to have a minimum lifespan of 100 years, as it is a residential development, which means that the 2070s epoch applies. To comply with the guidance, the surface water drainage system will be designed with a 45% climate change allowance for the 1% annual exceedance rainfall event, ensuring there is no increase in flood risk elsewhere and that the development is protected from surface water flooding.

EA guidance on the application of climate change allowances provides the following recommendations:

- Residential development should be considered to have a minimum lifetime of 100 years.
- FRAs should assess the upper-end allowances for peak rainfall for events with an annual probability of 1 in 30 (3.3%) and 1 in 100 (1%) in any given year.
- Assessment of peak river flow allowances is not required where a development is located in Flood Zone 1 and is not at an increased risk of flooding from rivers and seas in the future.
- Developments should be designed to be safe from surface water flooding and not increase flood risk elsewhere based on the upper-end allowance for peak rainfall for events with an annual probability of 1 in 100 (1%) in any given year.

The peak river flow (supplied for reference) and rainfall allowances for the site are provided in Table 2 and Table 3 below, respectively.

An upper-end allowance of 40% is adopted for peak rainfall in the assessment of surface water flood risk in the 1 in 30-year event, with an upper-end allowance of 45% adopted for peak rainfall in the assessment of surface water flood risk in the 1 in 100-year event.

Furthermore, an upper-end allowance of 45% is adopted for peak rainfall in the design of the proposed drainage system for the 1 in 100-year.

Table 2: Peak river flow allowances for the Irwell Management Catchment.

ALLOWANCE CATEGORY	TOTAL POTENTIAL CHANGE ANTICIPATED FOR THE '2020S' (2015 TO 2039)	TOTAL POTENTIAL CHANGE ANTICIPATED FOR THE '2050S' (2040 TO 2069)	TOTAL POTENTIAL CHANGE ANTICIPATED FOR THE '2080S' (2070 TO 2115)
Upper	24%	43%	75%
Higher	15%	26%	46%
Central	12%	19%	35%

Table 3: Peak rainfall allowances for the Irwell Management Catchment

ALLOWANCE CATEGORY	TOTAL POTENTIAL CHANGE ANTICIPATED FOR THE '2050S' (UP TO 2060)	TOTAL POTENTIAL CHANGE ANTICIPATED FOR THE '2070S' (2061 TO 2125)
3.3% AEP rainfall event		
Upper end	35%	40%
Central	25%	30%
1% AEP rainfall event		
Upper end	40%	45%
Central	25%	30%

Environment Agency datasets and mapping contained within the SFRA have been consulted to provide a brief overview of the Site's existing flood risk. The potential sources of flooding to the development have been assessed and are discussed below.

4.2. Historical Flooding

The Environment Agency has provided historical flood risk information. Recordings indicate that flooding occurred in Salford, near Strangeways, during the floods of January 1946 and December 2015. This area is located approximately 750 meters to the west of the site. The annual probability of flooding in this region ranges from 0.1% to 1%, which is equivalent to a chance of flooding between 1 in 1,000 and 1 in 100 years.

A copy of the Environment Agency Historic Flood Map for Planning is provided in Figure 4 below.

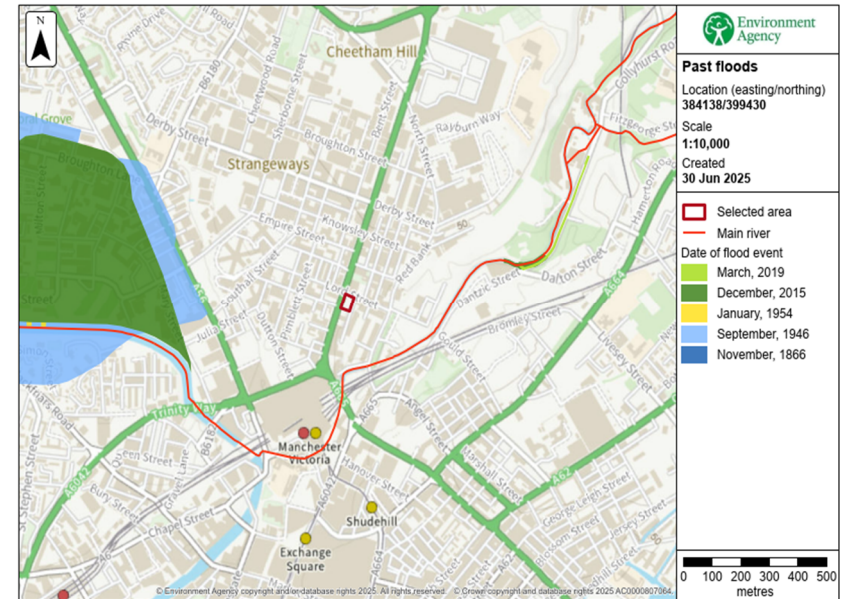


Figure 4: EA's Historic Flood Map

4.3. Tidal/ Fluvial (Rivers and Sea) Flood Risk

Fluvial (main river) flooding occurs when the capacity of a main river is exceeded, resulting in water overtopping its banks. Heavy or prolonged rainfall, melting of ice and snow and – in rivers subjected to tidal processes – high tides and storm surges are the primary causes of this source of flooding. The EA Flood Map for Planning (Rivers and Sea) highlights the risk of flooding to the site from fluvial sources:

Where a site is located in a dark blue shaded zone, this indicates that the site is within Flood Zone 3 where there is a chance of flooding of 1 in 100 (1%) or greater.

Where a site is located in a light blue shaded zone; this indicates that the site is within Flood Zone 2 where there is a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%).

Where a site is located in a white (unshaded) area, it is generally deemed to be classified as Flood Zone 1 where there is a chance of flooding of less than 1 in 1000 (0.1%).

The nearest river to the Site is the River Irk (250m away). The EA's Risk of Flooding from the Rivers and Sea map shows the Site is at very low risk (i.e., less than 0.1% annual chance) from fluvial flooding (Figure 5).

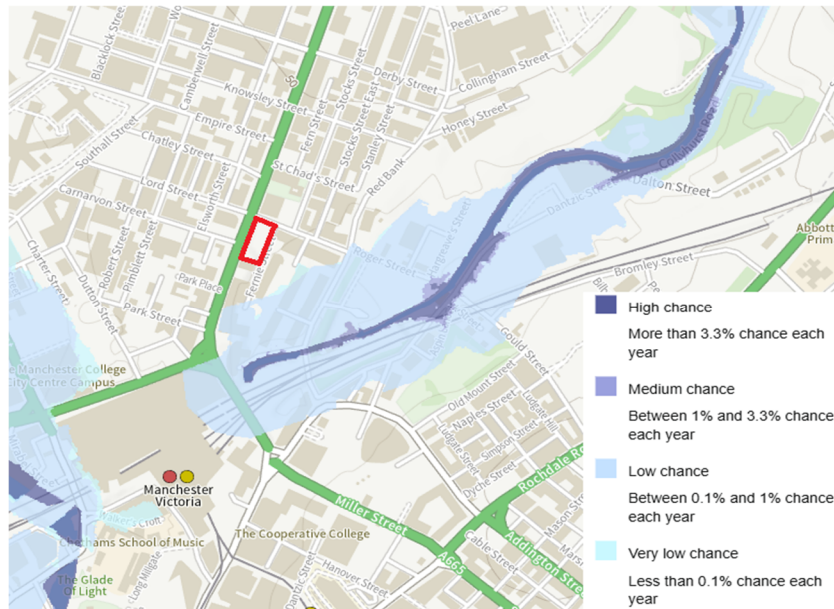


Figure 5: Flood Risk Map from rivers or sea

4.4. Surface Water Flooding to the Site / Pluvial

Surface water flooding can be caused when rainwater, during extreme rainfall events, does not drain away through the normal drainage system or soak into the ground. Surcharging sewers can result in overland flows which if originating at a higher elevation than a development site can potentially pose a flood risk.

Surface water flooding is dependent primarily on topography, which dictates either the flow path of overland flow which is not contained within public sewers, or areas in which ponding may occur. Surface water flooding is more difficult to predict than the risk of flooding from Rivers or Sea as it is dependent on the amount of rain which will fall in a very localised area, the specific topography of that region and the capacity and functionality of the drainage network within that section.

From the UK Government's Flood Risk from Surface Water (extent of flooding) map.

- Where a site is in a dark blue shaded zone, this indicates that the site is at high risk of flooding where there is a chance of flooding of greater than 1 in 30 (3.3%).
- Where a site is in a mid-blue shaded zone, this indicates that the site is at medium risk of flooding where there is a chance of flooding of between 1 in 100 (1%) and 1 in 30 (3.3%).
- Where a site is in a light blue shaded zone; this indicates that the site is at low risk of flooding where there is a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%).
- Where a site is in a white (unshaded) area; this indicates that the site is at very low risk of flooding where there is a chance of flooding of less than 1 in 1000 (0.1%).

The EA's Risk of Flooding from Surface Water map (Figure 6) shows the Site is at very low risk of pluvial flooding. An area of low surface water flood risk (i.e., between 0.1% and 1% annual chance) is shown within the adjacent Cheetham Hill Road, however, any flooding within this area is anticipated to be contained within the carriageway.

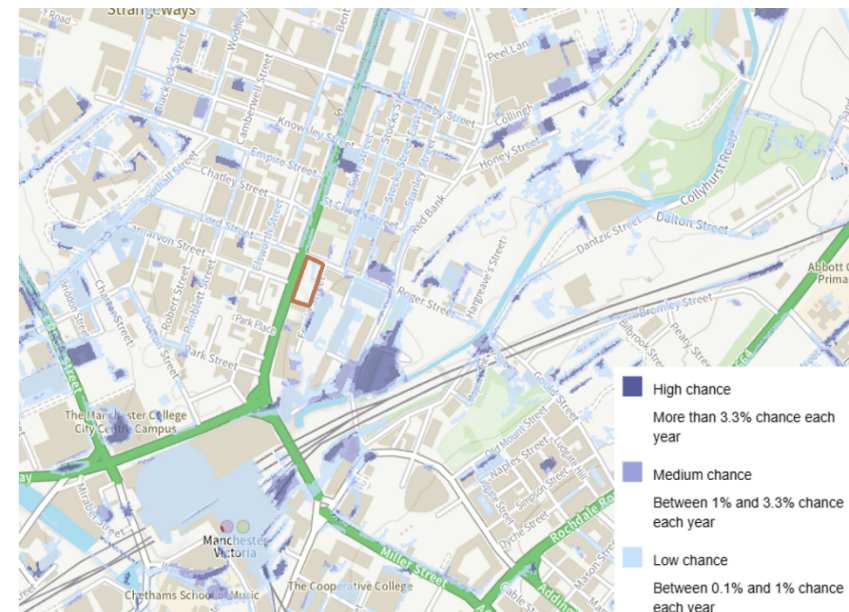


Figure 6: Surface Water Flood Risk Map