

Hopwood Hall College St Mary's Gate, Rochdale Enabling works Flood Risk Assessment

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Job Number: 24365
Document Reference: **FE0012-ROS-XX-XX-T-D-0051**

Date	Revision	Notes/Amendments/Issue Purpose
[July 2025]	P01	For Information
[July 2025]	P02	For Information

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Acronyms	
AEP	Annual Exceedance Probability
AOD	Above Ordnance Datum
CIRIA	Construction Industry Research and Information Association
DCG	Design and Construction Guidance
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
FEPP	Flood Emergency and Evacuation Plan
FRA	Flood Risk Assessment
LLFA	Lead Local Flood Authority
NPPF	National Planning Policy Framework
PPG	Planning Practice Guidance
SFRA	Strategic Flood Risk Assessment
SWMP	Surface Water Management Plan
UU	United Utilities

1.0 Introduction

Roscoe have been commissioned to undertake a Flood Risk Assessment (FRA) for the enabling works at Hopwood Hall College, Rochdale, OL12 6RY. This statement will be used to support the planning application for the proposed development.

The national Planning Policy Framework (NPPF) states that an appropriate FRA will be required for all development proposals of 1ha or greater in Flood Zone 1 and for any development within Flood Zone 2 or 3.

The EA's Flood Map for Planning shows that the site is located in Flood Zone 2 and 3, this assessment will therefore focus on the flood risk to the site from watercourses.

1.1 Relevant Policy

This FRA has been carried out in accordance with the NPPF and the accompanying Planning Practice Guidance (PPG) "Flood Risk and Coastal Change". This FRA also incorporates advice and guidance from the Environment Agency (EA), Manchester City, Salford city and Trafford Councils Strategic Flood Risk Assessment (SFRA) 2011 and CIRIA documents.

2.0 Site Description and Location

The site is located off Saint Marys Gate (A58), Rochdale. The postcode of the site is OL12 6RY, and can be further identified by grid reference 389339, 413366. The red line for the enabling works is detailed in Figure 1.1 below. The site generally slopes gently southwards from the northern site boundary and lowest point of elevation at 119.58m AOD along the southern site boundary. The highest elevation within the red line boundary for the enabling works is 119.65m AOD. There are no signs of movement or disturbance. There are residential developments to the north and a neighbouring further education facility to the south. A drawing displaying the existing and proposed enabling works site levels has been attached in Appendix A.

Current use:

The site is currently a college with associated car parking, outdoor leisure area and soft play area. A public restaurant and hair salon are also present and part of the Block B building. There are three existing buildings present on site including two multi-storey buildings associated with the college. Most of the site is hard standing with the northern part of the site covered by asphalt and concrete for the existing college buildings and associated car park area. The southern area of the site bordering the river has undergone soft landscaping.

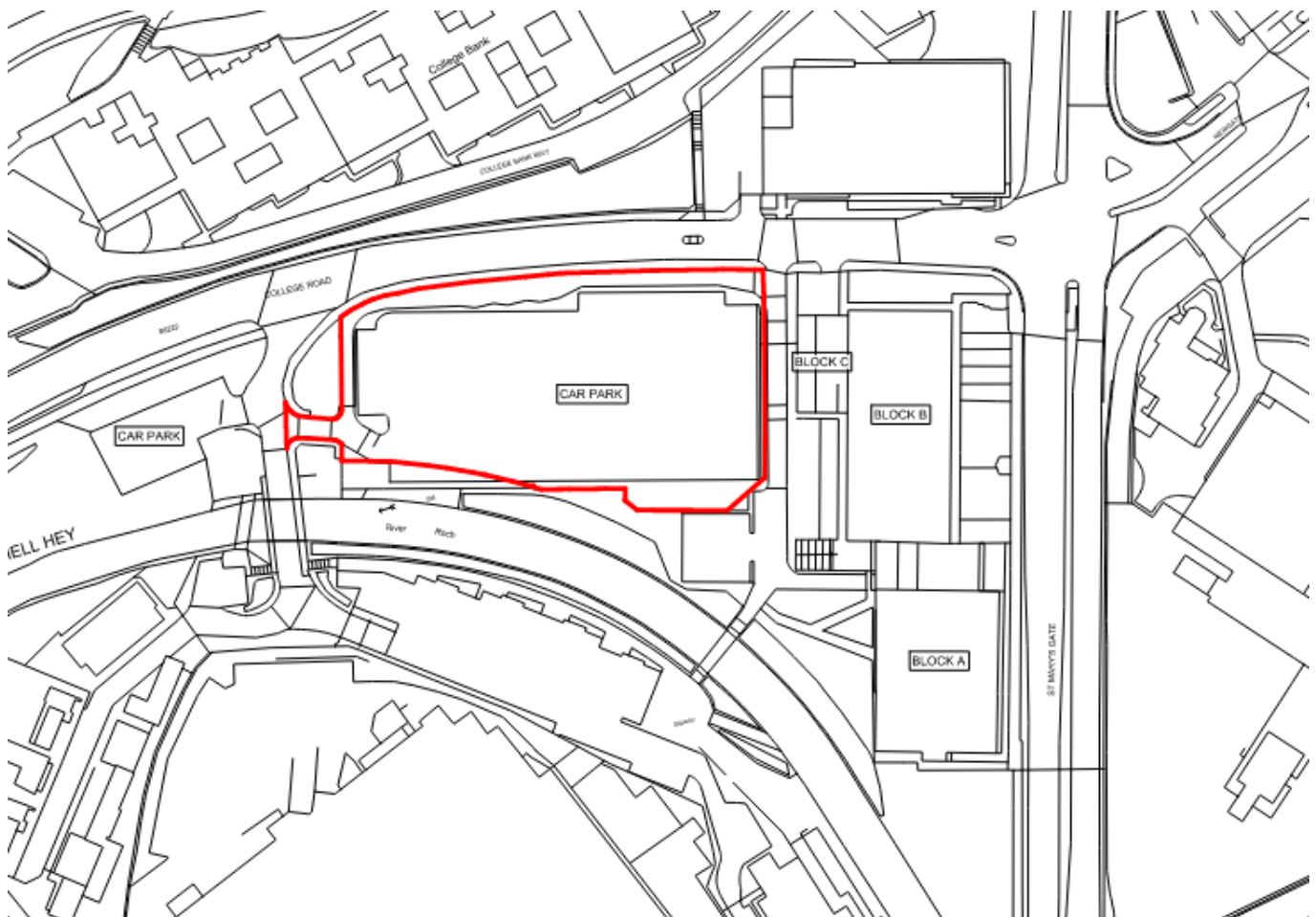


Figure 1.1: Enabling Works red line boundary

2.1 Development Proposal

This FRA relates solely to the enabling works associated with the early-stage preparation of the site. These works are temporary in nature and do not form part of the permanent development. A separate FRA will be submitted to support the full application.

The enabling works include the following activities:

- Site clearance, including removal of vegetation and debris;
- Removal of existing areas of hardstanding;
- Construction of temporary site access and haul roads to facilitate plant and vehicle movement;
- Installation of temporary site compounds and welfare facilities, such as cabins and storage areas.

Importantly, the enabling works will:

- Not alter existing ground levels;
- Not involve any deep excavations, basements, or piling;
- Not include any permanent drainage infrastructure at this stage.

All temporary structures will be located away from known flood flow paths and will be demountable in the event of a flood alert. The works are of limited duration and are expected to be completed within 13 weeks, 10 weeks from enabling works until Phase 1. A layout plan showing the location and extent of the enabling works is shown in Figure 2.1.

The welfare units and storage cabins are set above the design flood level, based on the latest EA flood data and climate change allowances, this is explored further in Section 3.8. No deep excavations, basements, or long-term ground lowering are proposed. A dedicated safe access and egress route has been identified and is shown in Figure 4.1, ensuring that personnel can evacuate safely from the site to higher ground. All equipment and materials will be stored on elevated hardstanding or removed from site during periods of elevated flood risk. All site works will be at least 10m away from the designated main river- the site plan to display this buffer has been included in Appendix B.

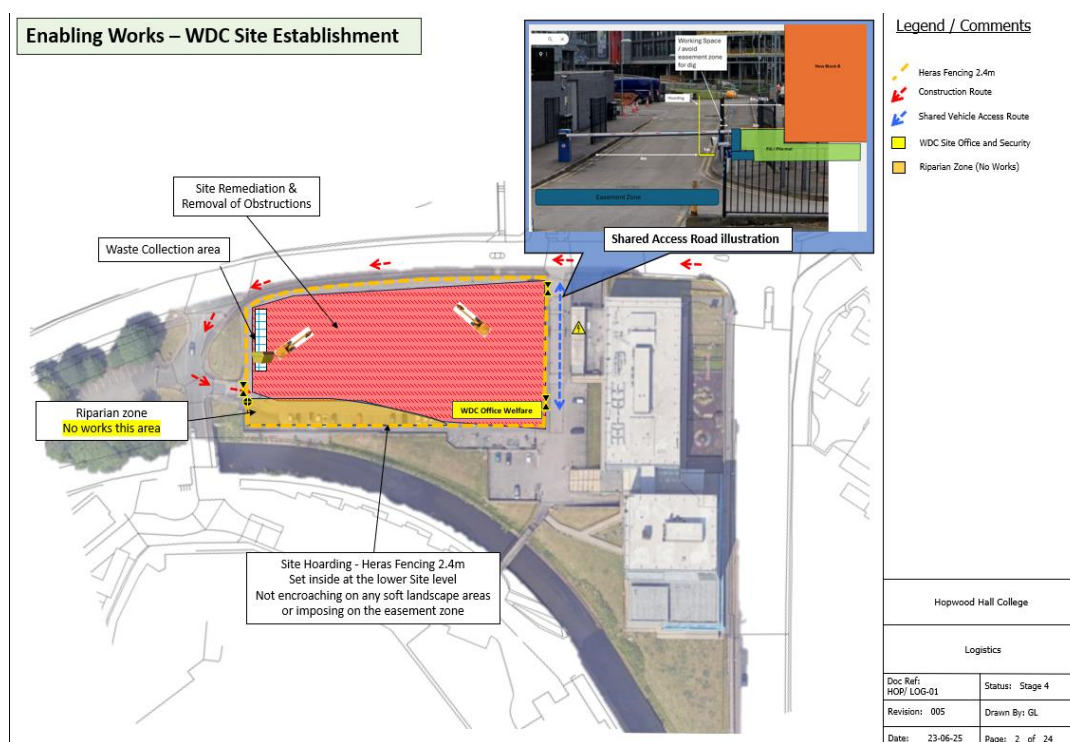


Figure 2.1: from EA Flood Map for Planning 2025

3.0 Flood Risk Assessment

3.1 Flood Risk from Watercourses

The EA's flood map for planning shows that the site is located in Flood Zone 2/3 and is at risk of flooding from the River Roch. The river Roch is located directly south of the site. It continues westward as a minor watercourse, running along the southern boundary of the site. Land in this flood zone is assessed as having annual probability of river flooding greater than 1%. The EA's maps suggests that the site is not located in an area which benefits from flood defences however the EA's website also states that not all defences are shown on the map.

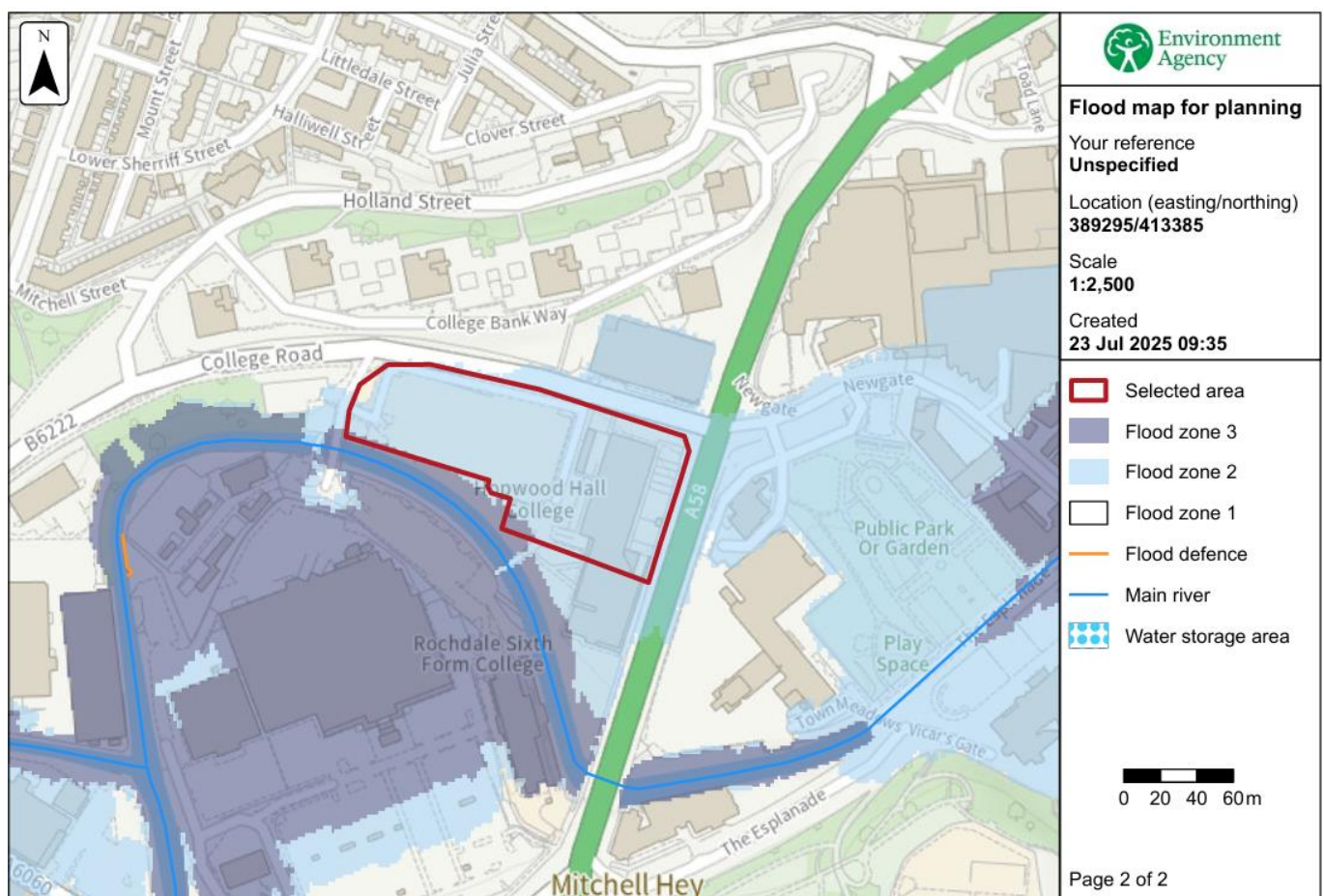


Figure 3.1: from EA Flood Map for Planning 2025

To further evaluate the fluvial and tidal flood risk at the site related to the River Roch and determine the potential extent of flooding, Roscoe contacted the EA to obtain site specific Product 4 flood data, however the LLFA confirmed that there were no recorded flood outlines at the site, they did however provide historic flooding details of the wider area.

- *The outlines do not include flooding from drainage, where rainfall had led to surface water ponding or overland runoff,*
- *and, artificial, water-bearing sewer, water supply and wastewater treatment pipelines*

Mapping provided by the EA identifies a history of recorded fluvial flooding within the inside of this river bend. The mapped flood extent confirms that the areas subject to historic flooding are confined within the bend and do not extend into the proposed development site.

Importantly, the enabling works area is located outside the bend of the river and beyond the identified flood extent as shown on the EA flood risk map (see Figure 3.2). The EA mapping indicates that the site is within Flood Zone 2/3 but it is not within the recorded extent of previous flood events, nor is it within functional floodplain (Flood Zone 3b) based on currently available data.

As no ground level changes are proposed as part of the enabling works, and all temporary site compounds, access routes and materials storage will be located outside of the recorded flood area, the enabling works will not:

- Obstruct flood flows,
- Reduce floodplain storage; or
- Increase flood risk to third parties

While the proximity of the river is acknowledged, the location of the enabling works outside the area of historic fluvial flooding means that the flood risk to and from the enabling phase is low. Nonetheless, a precautionary approach will be adopted, including monitoring river levels during high-risk periods and ensuring that all temporary site infrastructure remains demountable and relocatable in the event of a flood warning.

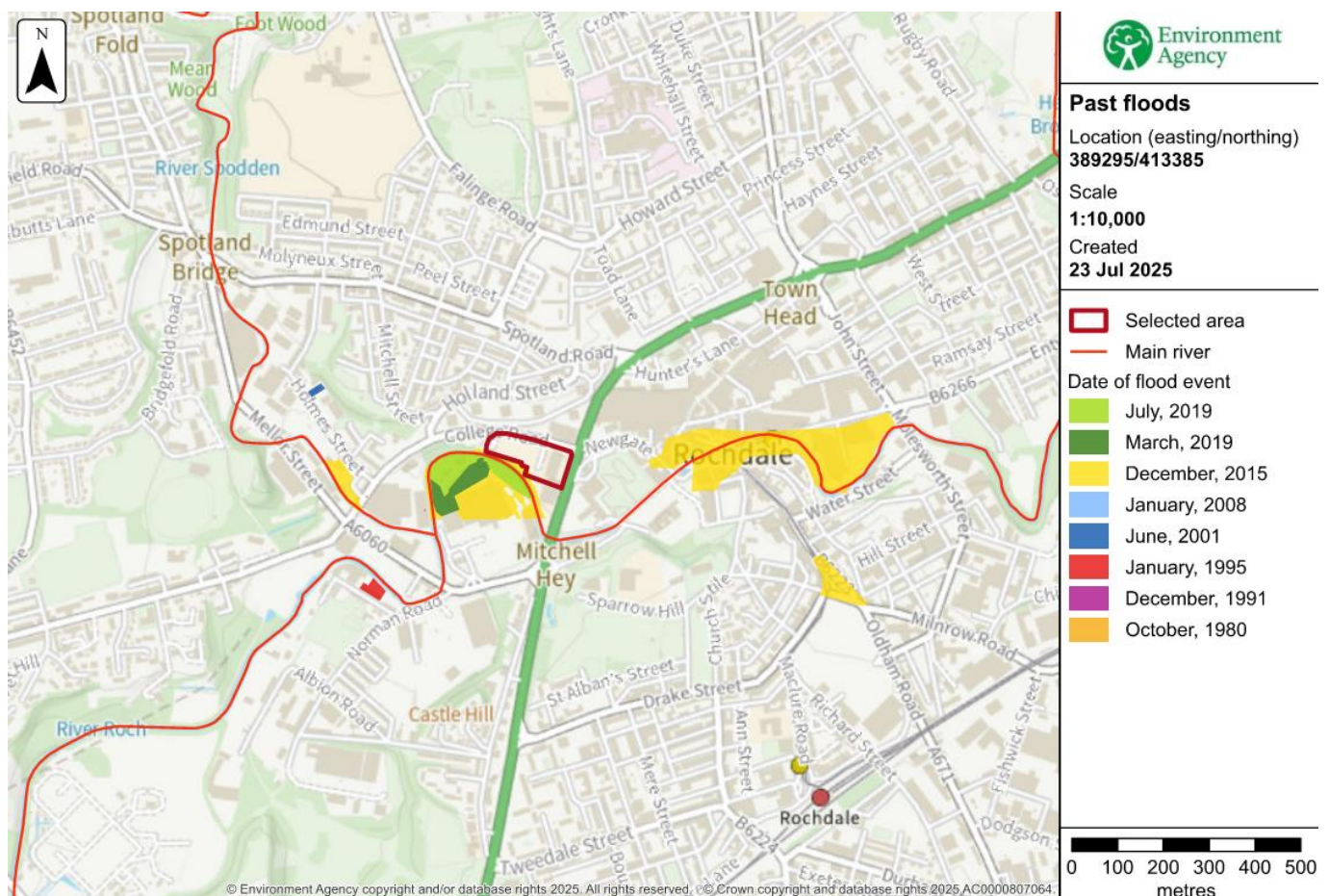


Figure 3.2: EA Historic Flooding Map

3.2 Flood Risk from pluvial flooding

Pluvial flooding typically occurs when surface water drainage systems are overwhelmed during periods of intense or prolonged rainfall, resulting in overland flow and potential ponding in low-lying areas. This is a particular concern where existing drainage infrastructure is inadequate, poorly maintained, or absent.

Based on the Environment Agency's online surface water flood mapping (see Figure 3.3), large areas of the site are identified as being at low to medium risk of surface water flooding, particularly during rainfall events with a 1% to 3.33% Annual Exceedance Probability (AEP), equivalent to 1 in 100 to 1 in 30-year events. The topography, supported by LiDAR data, indicates a general slope from north to south, with higher ground located along College Road to the north and the A58 to the south. This suggests an overland flow route may pass through the site, particularly during extreme rainfall.

Surface water flood risk also appears to concentrate along adjacent roads, particularly to the north and east, where 1 in 100-year flood events (1% AEP) could result in localised flooding. The data suggests potential flow paths from St Mary's Gate to the east, and a notable overland flow route to the west of the site, both of which may pose a risk of surface water entering the site boundary.

However, several mitigation measures are already in place to manage this risk:

- The site is currently served by a positive surface water drainage system, which is designed to collect and discharge surface water efficiently, reducing the likelihood of standing water on site.
- Following historic flooding events in December 2017 and multiple incidents in 2019, significant flood protection improvements were implemented, including:
 - Installation of internal flood barriers and external flood walls to help prevent ingress of surface water;
 - Fitting of non-return valves in June 2020 to prevent river water surcharging into the surface water network;
 - Upgrades to the on-site pump station to manage excess water, particularly in the undercroft area (although specific location records for this asset are currently unavailable).

These measures collectively reduce the site's vulnerability to both pluvial and fluvial flooding, by preventing backflow from the river system and facilitating controlled drainage of surface water runoff.

Given the existing infrastructure and site management measures, the overall risk of pluvial flooding during the enabling works is considered to be low, although overland flow from extreme rainfall will continue to be monitored, and all temporary structures will be positioned to avoid identified flow paths.

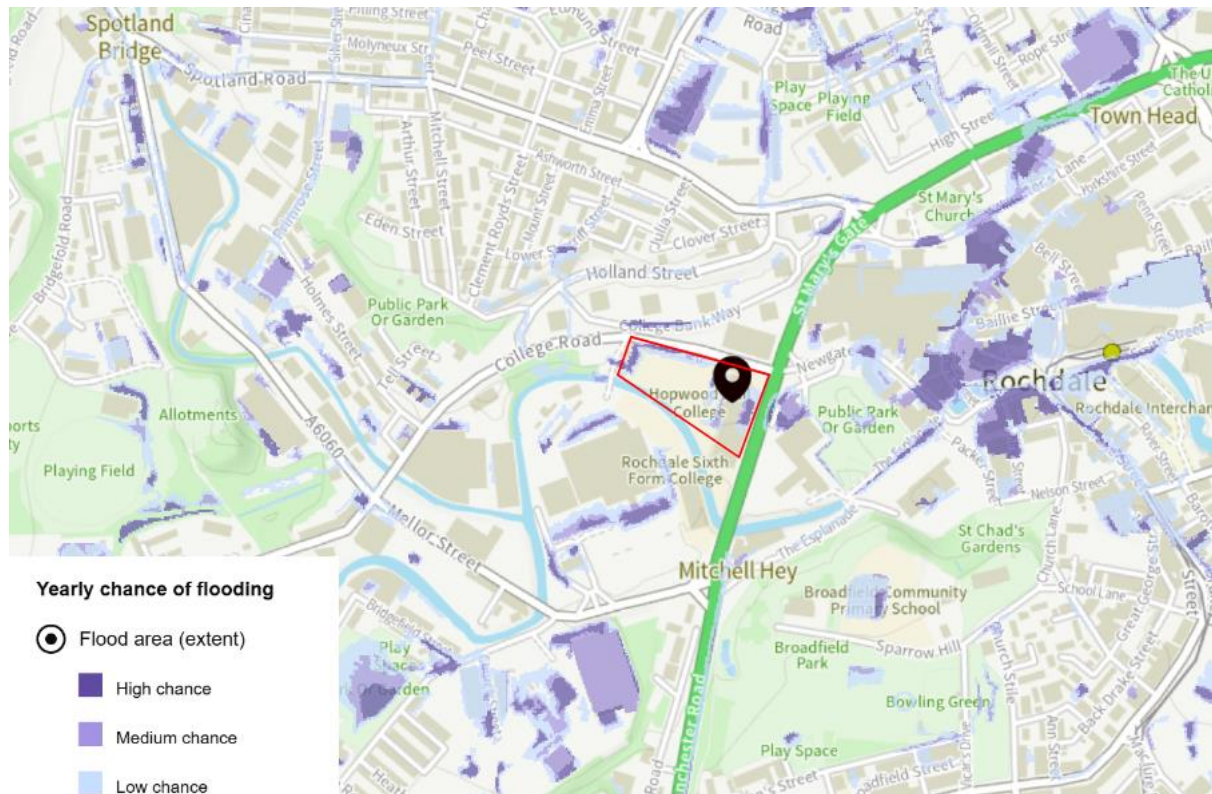


Figure 3.3: EA Historic Pluvial Flood Map 2021

3.3 Flood Risk from Overland Flows

Overland flow can occur when adjacent developments or infrastructure become overwhelmed or fail during periods of extreme rainfall, particularly when rainfall exceeds the design capacity of highway or site drainage systems, or where blockages occur. Overland flow is largely influenced by local topography, directing water across surfaces toward lower-lying areas.

Based on topographic data and a review of the surrounding area, potential overland flow routes have been identified that could direct water toward the site, particularly from surrounding roads. The most notable potential flow path originates from College Bank Way, where failure or exceedance of the highway drainage system could result in surface water spilling onto the site. Flow paths are expected to be relatively shallow and limited in volume, with any runoff crossing the site likely to continue southward and discharge into the nearby River Roch.

As shown in Figure 3.4, these flow routes are predicted to affect only a small portion of the site boundary. Given that the enabling works do not involve changes to ground levels, deep excavations, or disruption to existing drainage patterns, and that any temporary infrastructure will be located away from known low spots, the overall risk from overland flow is considered to be low and manageable during the enabling phase.

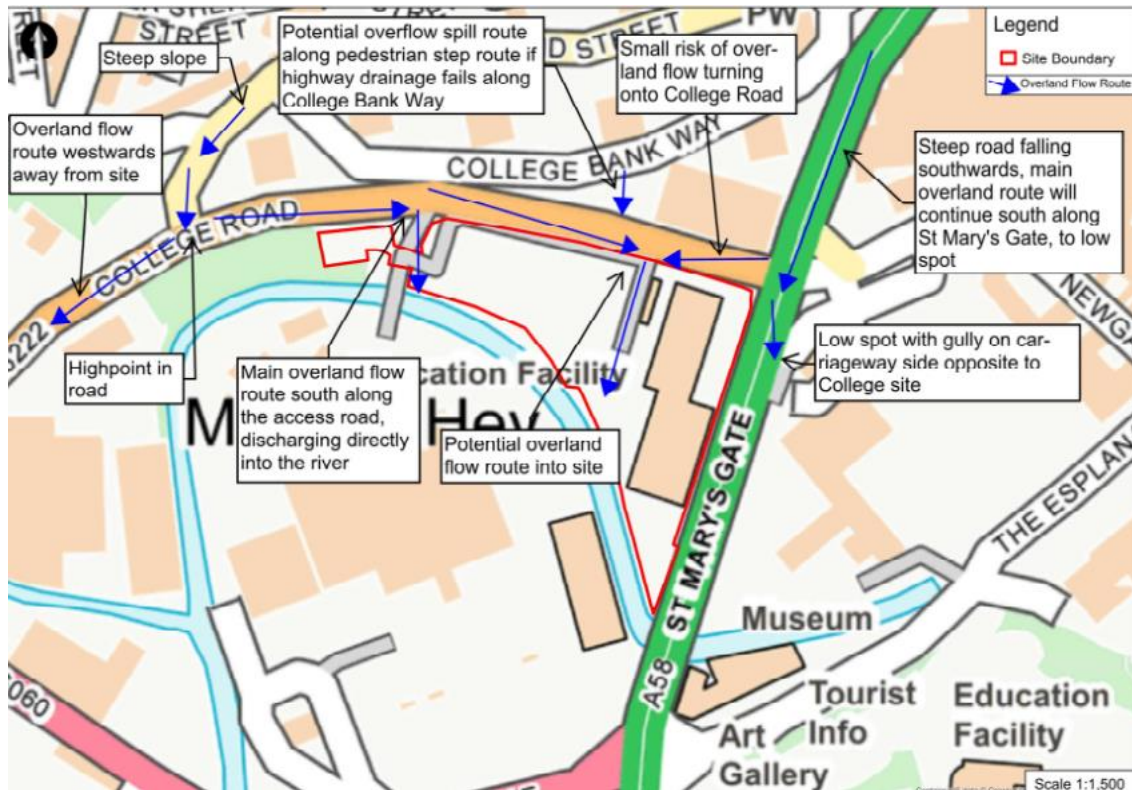


Figure 3.4: Predicted Overland Flow Routes- Mott MacDonald 2021

3.4 Sequential and Exception Tests

The enabling works are temporary in nature and do not involve changes in land use, the construction of permanent structures, or any increase in flood vulnerability. As such, the Sequential Test and Exception Test are not considered applicable to this stage of works.

3.5 Flood Risk from Groundwater

Groundwater flooding occurs when water originating from sub-surface permeable strata emerges from the ground, typically after prolonged rainfall.

The nearest BGS borehole records are located adjacent to the southeastern corner of the site. These records show that below thin topsoil deposits, Made Ground was encountered at depths of between 1.7m below ground level comprising brick, clay, silt, and ash. Beneath the Made Ground, natural deposits were encountered comprising of predominantly fine to coarse sand and gravel to depths of between 3.7m bgl and 4.8m bgl. Groundwater strikes were noted on the records varying from Ground Level to 4m bgl. This suggests that the site may be susceptible to groundwater emergence under certain conditions, particularly during periods of prolonged rainfall or elevated water tables.

However, the proposed enabling works:

- Do not involve any changes to existing ground levels;
- Do not include any basement or deep foundations
- Are limited to temporary, above ground activities

As such, the risk of groundwater flooding during the enabling phase is considered low. No dewatering or specialist groundwater control measures are anticipated. Standard site management practices will be sufficient to mitigate any minor or localised groundwater related issues that may arise during the works.

3.6 Flood Risk from Reservoirs

According to the Environment Agency's flood mapping for reservoirs, the site is located within an area identified as being at risk in the extremely unlikely event of a reservoir failure. The reservoirs that could potentially affect this area are:

- Kitcliffe Reservoir
- Hollingworth Lake
- Spring Mill Reservoir

All three are situated upstream of the site and discharge into or interact with the local river system. Based on the EAs reservoir flood risk mapping, a failure of one or more of these reservoirs could result in a rapid release of water affecting the surrounding area.

Crucially, this form of flood risk is not linked to high river levels, the site is considered at risk from a hypothetical reservoir breach even when the river levels are at normal flow. This is a result of the potential hydraulic pathways from the reservoirs to the site as modelled by the EA.

While the probability of reservoir flooding is extremely low, due to robust inspection and maintenance procedures under the Reservoir Act 1975, the consequences could be significant. The flood extent mapping provided by the EA assumes a worst-case uncontrolled release and does not account for operational response or downstream attenuation. This map is attached as Figure 3.4.

For these enabling works applications:

- No alteration to ground levels will occur;
- No permanent structures are proposed;

All temporary infrastructure (e.g. welfare cabins, material storage) will be sited away from known flow paths;

Site personnel will be briefed on flood response procedures, and a temporary Flood Emergency and Evacuation Plan (FEED) will be in place during the enabling phase.

Given the low likelihood and short- term nature of the enabling works, with appropriate site management measures in place, the residual risk from reservoir flooding is considered acceptable for this phase of development. Furthermore, a series of plans and measures are being developed through the Greater Manchester Civil Contingencies and Resilience Unit to ensure an appropriate response is put in place for managing such risk. Much of the reservoir network is owned and managed by UU, who monitor and maintain reservoirs as required to ensure their structural integrity and safety.

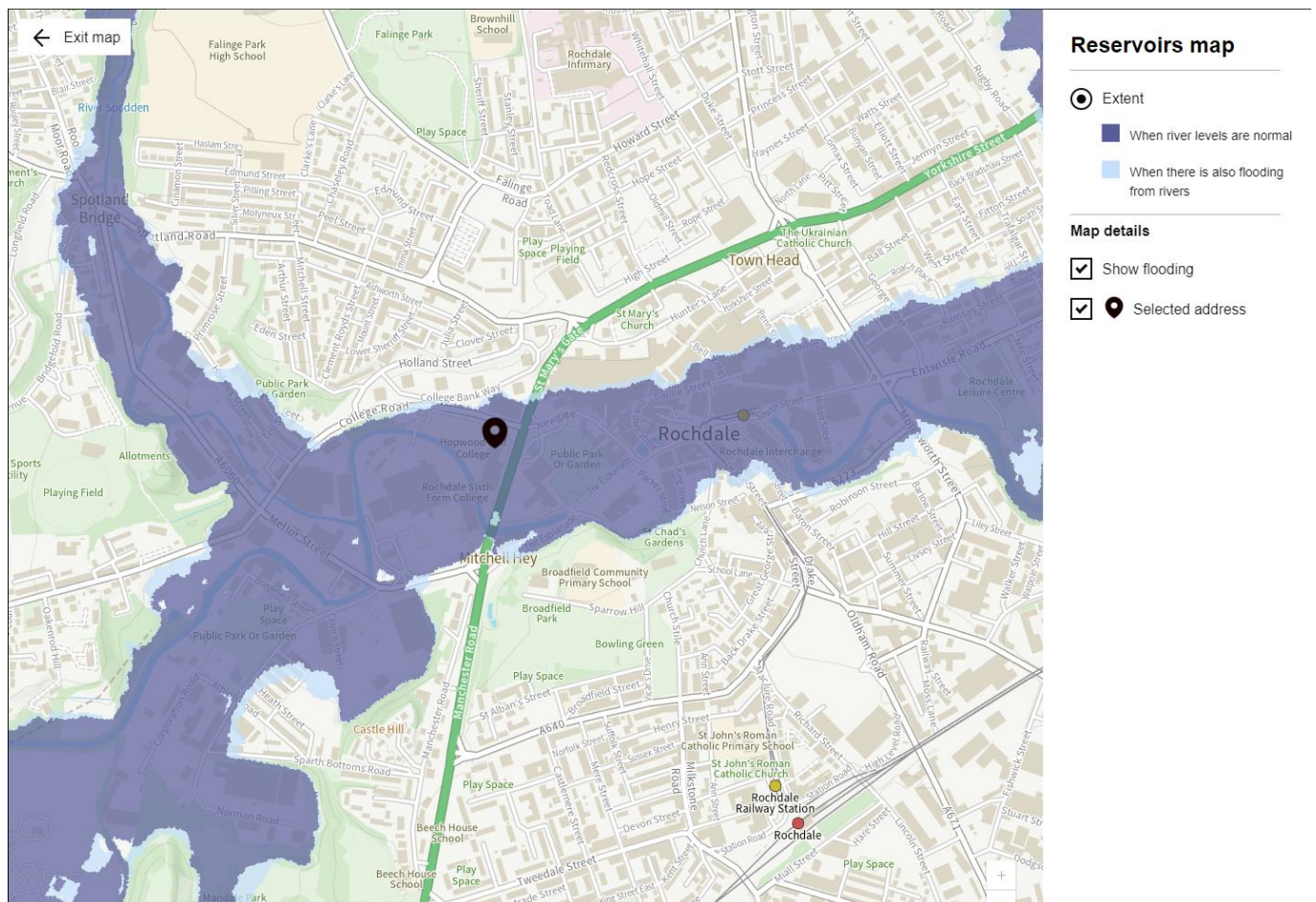


Figure 3.1 Environment Agency Risk of Reservoir Flooding Map 2025

The EA's information states that reservoir flooding is extremely unlikely to happen and there has been no loss of life in the UK from reservoir flooding since 1925. The Reservoir Act of 1975 ensures that reservoirs are inspected regularly, and essential safety work is carried out.

3.7 Flood Risk from Sewers

Sewer flooding can occur when the capacity of the public sewer network is exceeded due to intense rainfall, blockages, or hydraulic restrictions. According to publicly available data from Rochdale Borough Council, there have been historic incidents of sewer flooding within the wider Rochdale area, including locations in the vicinity of the site (see Figure 3.5). These records highlight the potential for sewer surcharge during extreme weather events, particularly as climate change increases the likelihood of intense rainfall.

Although the enabling works do not involve the installation of permanent drainage systems, the site currently discharges to the public foul and surface water sewer network, which may already be sensitive to surcharge under storm conditions. Existing infrastructure, including a non-return valve system and upgraded pump station, was introduced following previous flooding incidents (notably in December 2017 and 2019) to reduce the risk of water backing up through the drainage system.

To mitigate the residual risk of sewer flooding during the enabling works phase:

- All temporary compounds, welfare units, and material storage will be sited away from existing manholes or known low spots.
- No direct connection to the public sewer network will be made as part of the enabling works.

- The existing drainage infrastructure will remain operational, including non-return valves that prevent sewer backflow into the site during surcharge conditions.

Given these measures and the temporary nature of the proposed works, the risk of flooding from public sewer surcharge is considered to be low and will be monitored throughout the enabling phase.

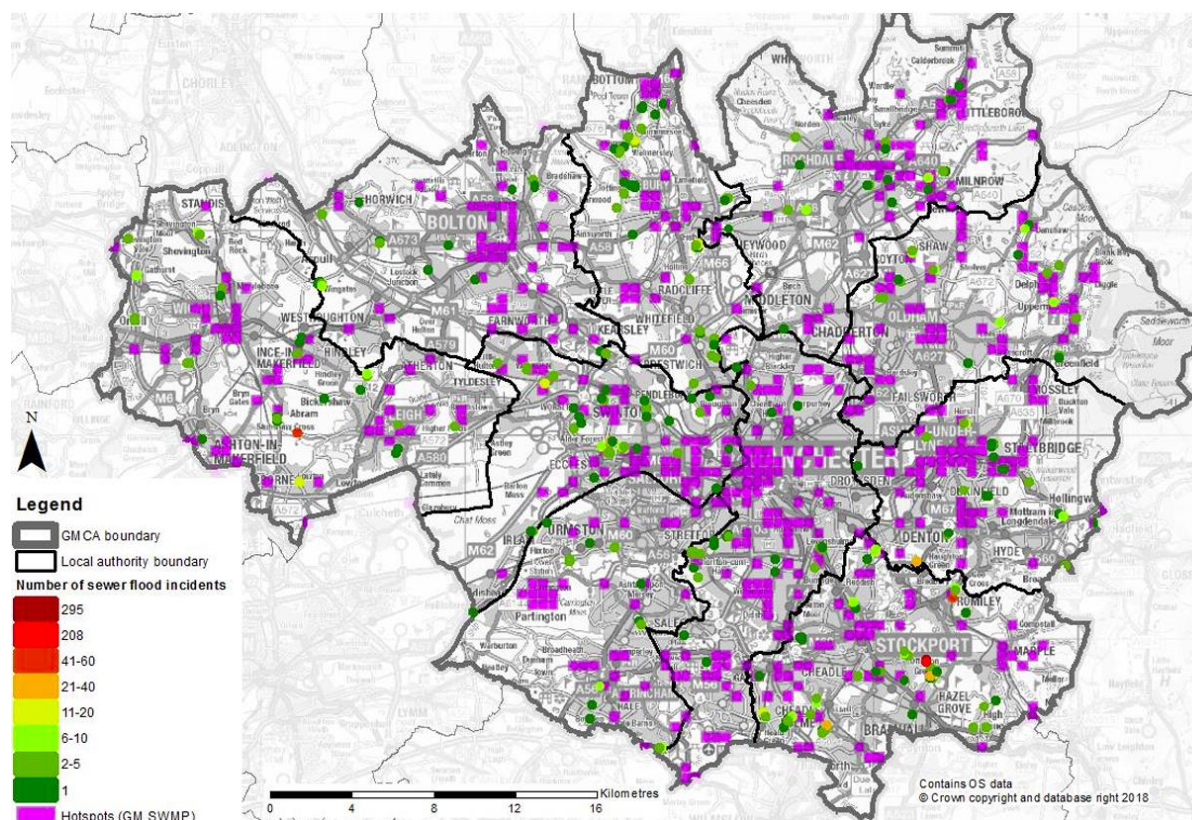


Figure 3.5 Rochdale Borough Council Sewer flooding Map

3.8 Climate Change

In accordance with the National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG), this Flood Risk Assessment considers the potential future impacts of climate change, including both central and upper-end allowances, despite the temporary nature of the proposed enabling works.

Product 4 data has been obtained from the Environment Agency for the River Roch. While no model nodes are located directly within the site boundary, two nearby fluvial model nodes positioned along the river corridor adjacent to the site provide the most representative flood levels. These levels were provided under a “defences removed” scenario, representing a conservative approach. The climate changed modelled fluvial node locations and levels have been included in Appendix C.

The modelled flood levels are as follows:

- 1% AEP +35% climate change (central allowance): 119.01 m AOD
- 1% AEP +70% climate change (upper-end allowance): 119.35 m AOD

Topographic data confirms that the site slopes gently from north to south, with ground levels ranging from approximately 125 m AOD at the northern boundary to a minimum elevation of 119.58 m AOD along the southern boundary near the River Roch. The site levels are not expected to change during enabling works so will remain the same as what is present on the topographic data sheet. A full comparison of existing and proposed site levels has been included in Appendix A.

When compared to the climate change flood levels:

- The lowest point on site (119.58 m AOD) is 0.57 m above the 1% +35% level.
- The same location is 0.23 m above the 1% +70% level.

Although marginal, this difference indicates that the site is not expected to flood even under upper-end climate change scenarios, assuming model accuracy. Nonetheless, a precautionary approach has been adopted given the site's proximity to the River Roch and history of fluvial flooding.

Mitigation measures include:

- Locating temporary welfare units and compounds on higher ground away from the southern boundary,
- Avoiding below-ground works such as basements or deep excavations,
- Implementing a site-specific Flood Warning and Evacuation Plan,
- Ensuring site operatives are registered with the Environment Agency's Flood Warning Service.

This approach ensures that the enabling works are resilient to predicted future flood levels, and do not pose additional flood risk to surrounding areas under climate change conditions.

4.0 Safe Access, Warning and Evacuation Plan

In accordance with the Planning Practice Guidance (PPG), safe access and egress to and from an area outside the floodplain should be provided for all developments. Safe access should remain available at all times, including during flood events and accounting for the effects of climate change over the lifetime of the development.

Although the enabling works are temporary in nature and do not introduce a permanent increase in vulnerability, the site lies within an area of known flood risk, including fluvial, pluvial, and potential reservoir sources. Therefore, a site-specific Flood Emergency and Evacuation Plan (FEEP) will be implemented for the duration of the enabling phase.

Key measures include:

- Site operatives will be registered with the Environment Agency's Flood Warning Service.
- Safe access and egress routes will be identified and maintained throughout the works.
- All staff will be briefed on site-specific evacuation procedures.
- Welfare units will be located in areas of lowest flood risk on site.
- Materials, equipment, and plant will be stored securely and positioned to avoid damage or displacement during a flood event.

Figure 4.1 A Safe Access and Egress Plan has been prepared to support this FRA, which identifies designated access routes across the site relative to the modelled flood level of 119.35 m AOD (1% AEP event with +70% climate change allowance). The drawing clearly illustrates the areas of the site that remain above this flood level, ensuring that dry routes are available for site operatives during a flood event. This plan demonstrates that, even under extreme flood scenarios, safe refuge and evacuation routes can be maintained, in accordance with NPPF and EA guidance.

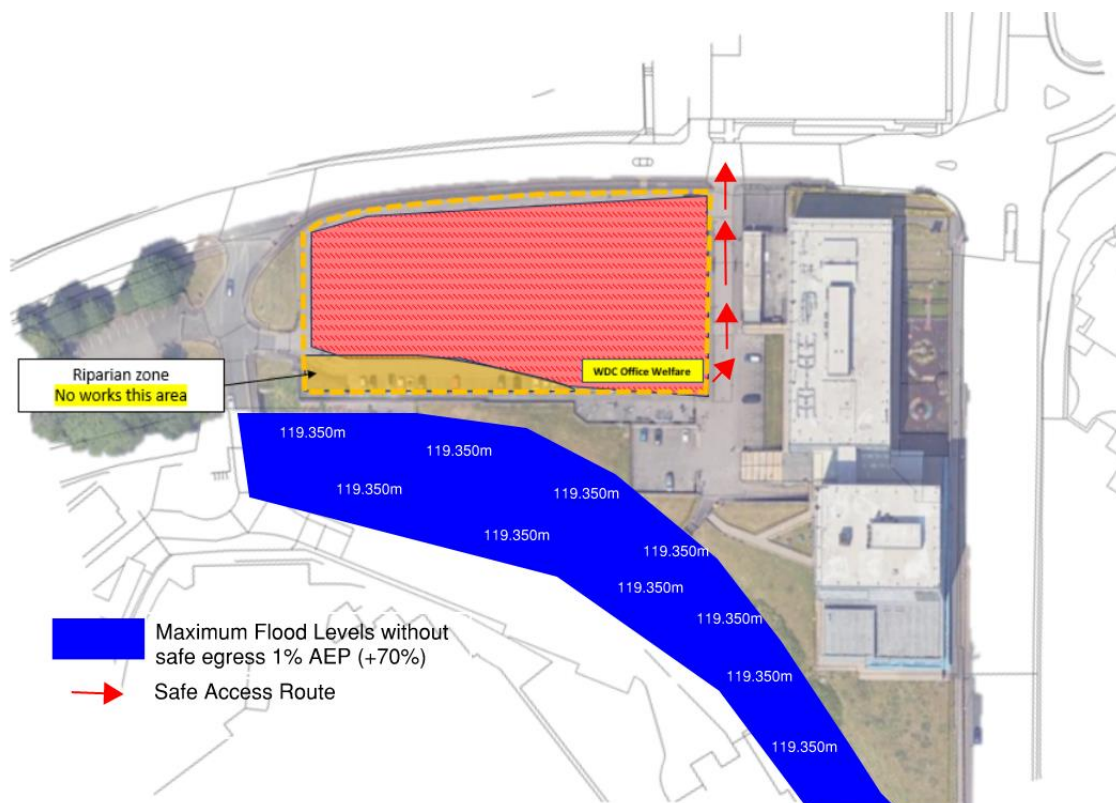


Figure 4.1 Safe Access and Egress Routes

The Environment Agency is responsible for monitoring river conditions and issuing flood alerts and warnings. It operates a four-stage coded warning system, which provides time for those at risk to take appropriate action. The triggers and corresponding response procedures are summarised in Table 4.1.

While site personnel will register for the Environment Agency's Flood Warning Service, reliance on this system alone is not assumed. A formal Flood Warning and Evacuation Plan (FWEP) will be implemented, with trained staff on site at all times. Emergency response procedures will be rehearsed and triggered based on on-site monitoring (e.g. rising river levels or heavy rainfall), not solely on EA alerts. Welfare units will be located in areas of lowest risk and will be easily and safely evacuated. There will be no sleeping accommodation or public access to the site during enabling works.

Flood Alert - Prepare: Flooding is possible. Be prepared	
 Is used from two hours to twelve hours in advance of flooding.	Following Actions: • Check your flood risk • Sign up for flood warnings • Keep up to date with the latest situation - call Floodline on 0345 988 1188 • Be ready to follow your flood plan • Have insurance documents and any medications ready • Avoid walking, cycling or driving through any flood water • Move any livestock and farming equipment away from areas likely to flood
Flood Warning - Act: Flooding is expected. Immediate action is required	
 Is used from half an hour to two hours in advance of flooding.	Following Actions: As with Flood Alert plus; • Protect yourself and your loved ones • Move your loved ones, pets and valuables to a safe place • Move to higher ground or the upper floor of a building • Turn off the gas, electricity and water in your home if it's safe • Put flood protection equipment in place • Do as the emergency services tell you • Help others if it's safe to do so
Severe Flood Warning - Survive: Severe flooding. Danger to life	
 issued when flooding threatens life and communities	Following Actions: As with Flood Warning plus; • Stay in a safe place • Be ready to evacuate your home • Do as the emergency services tell you • Call 999 if you are in immediate danger • If you are caught in a flash flood move to higher ground or the upper floor of a building if it's safe.

Table 4.1: Environment Agency Flood Warning System

8.0 Conclusions

This FRA relates solely to the enabling works associated with the early-stage preparation of the site. These works are temporary in nature and do not form part of the permanent development. A separate FRA will be submitted to support the full application.

The site is located off Saint Marys Gate (A58), Rochdale. The postcode of the site is OL12 6RY, and can be further identified by grid reference 389339, 413366.

The EA mapping indicates that the site is within Flood Zone 2/3.

The overall risk of pluvial flooding during the enabling works is considered to be low, although overland flow from extreme rainfall will continue to be monitored, and all temporary structures will be positioned to avoid identified flow paths.

The overall risk from overland flow is considered to be low and manageable during the enabling phase.

The risk of groundwater flooding during the enabling phase is considered low, Standard site management practices will be sufficient to mitigate any minor or localised groundwater related issues that may arise during the works.

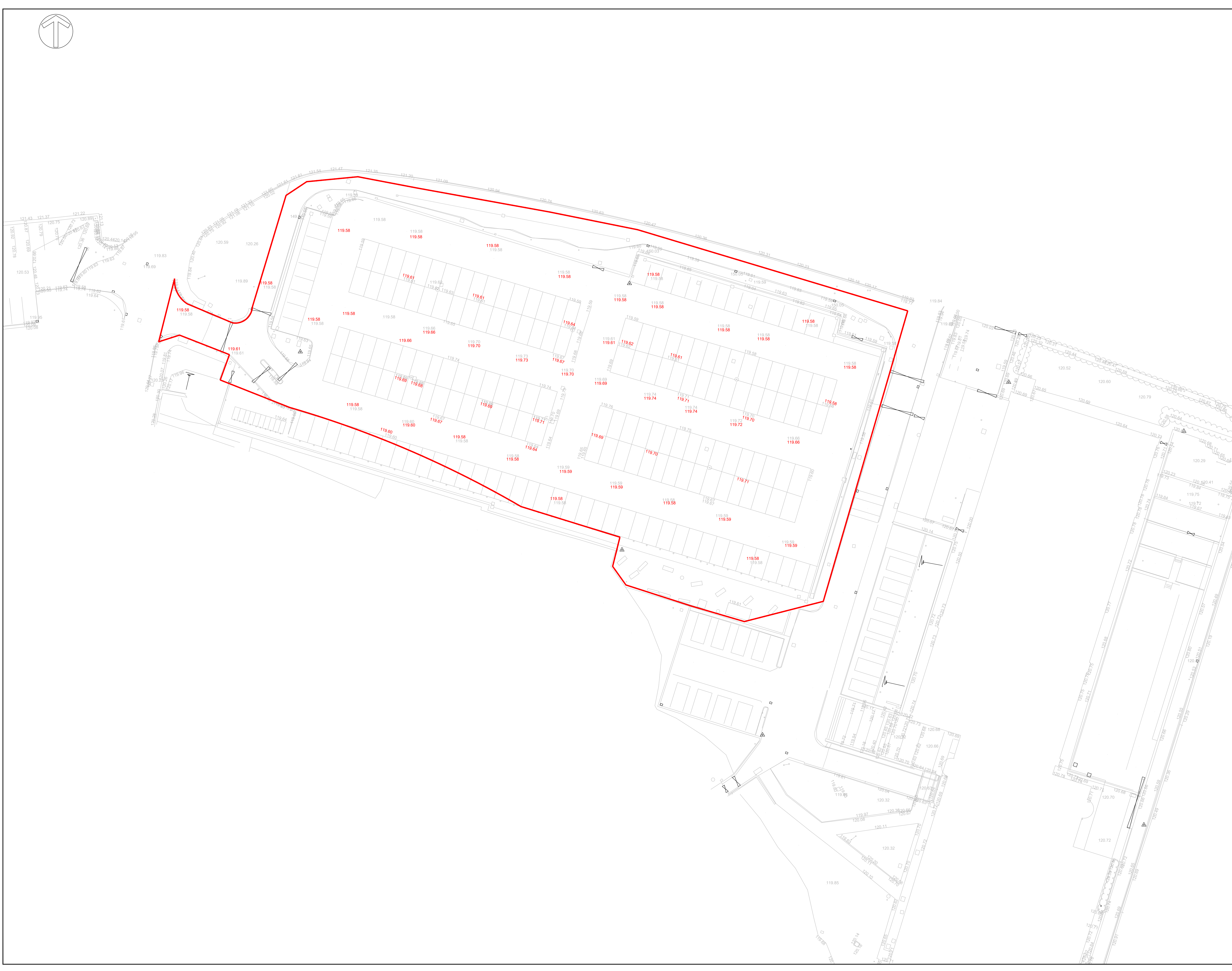
The residual risk from reservoir flooding is considered acceptable for this phase of development, given the low likelihood and short- term nature of the enabling works, with appropriate site management measures in place.

The risk of flooding from public sewer surcharge is considered to be low and will be monitored throughout the enabling phase.

A site-specific Flood Emergency and Evacuation Plan (FEED) will be implemented for the duration of the enabling phase.

Appendix A

Existing and Proposed Enabling Works Site Levels



KEY PLAN	
Existing Levels	119.59
Proposed Levels	119.59

EXISTING LEVELS AND PROPOSED LEVELS TO REMAIN THE SAME THROUGH ENABLING WORKS

P01	30.07.25	AY	FOR INFORMATION	JT	JC
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: **FOR INFORMATION**



CLIENT: WILL MOTT DIXON

ARCHITECT: SHEPPARD ROBSON

HOPWOOD HALL COLLEGE
ROCHDALE

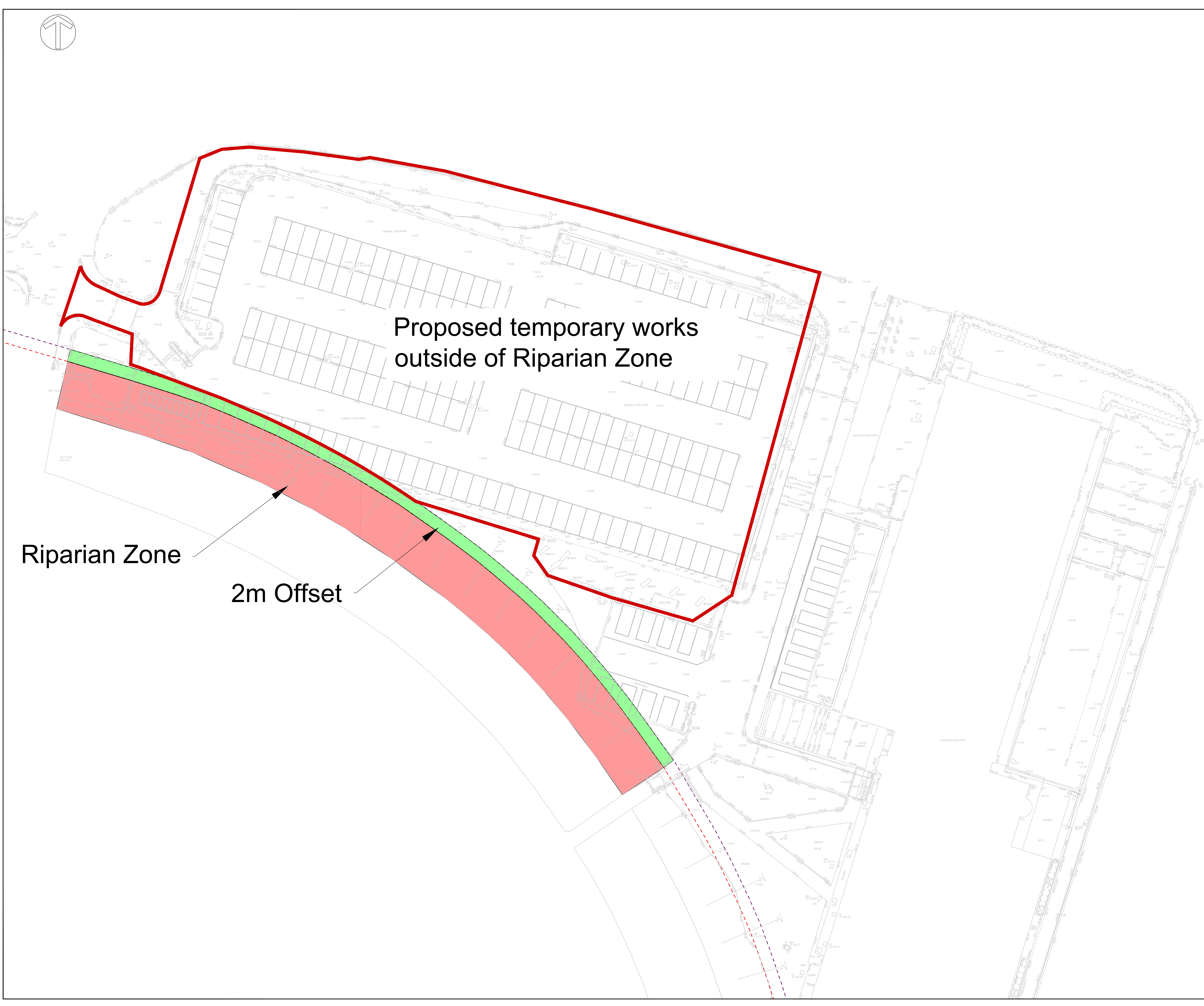
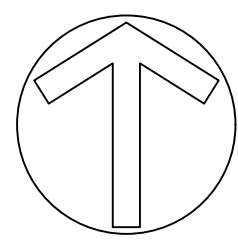
TITLE: ENABLING WORKS
EXISTING AND PROPOSED SITE LEVELS
PLAN

SCALE @ A0:	CHECKED:	APPROVED:
1:200	JT	JC
PROJECT NUMBER:	DESIGNED:	DRAWN:
24365	AY	AY
		DATE:
		JULY 2025

DRAWING No:		REV:
FE0012-ROS-XX-XX-D-C-01100		P01

Appendix B

Buffer Zone for Enabling Works



Riparian Zone

2m Offset

Proposed temporary works
outside of Riparian Zone

DO NOT SCALE

NOTES:

1. Do not scale this drawing. All dimensions must be checked/verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.

Legend

- Site Boundary
- Riparian Zone
- 2.0m Offset

PO1	30/07/25	JT	FOR INFORMATION	JT	JC
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: FOR INFORMATION



CLIENT: WILLMOTT DIXON

ARCHITECT: SHEPPARD ROBSON

PROJECT: HOPWOOD HALL COLLEGE
ROCHDALE

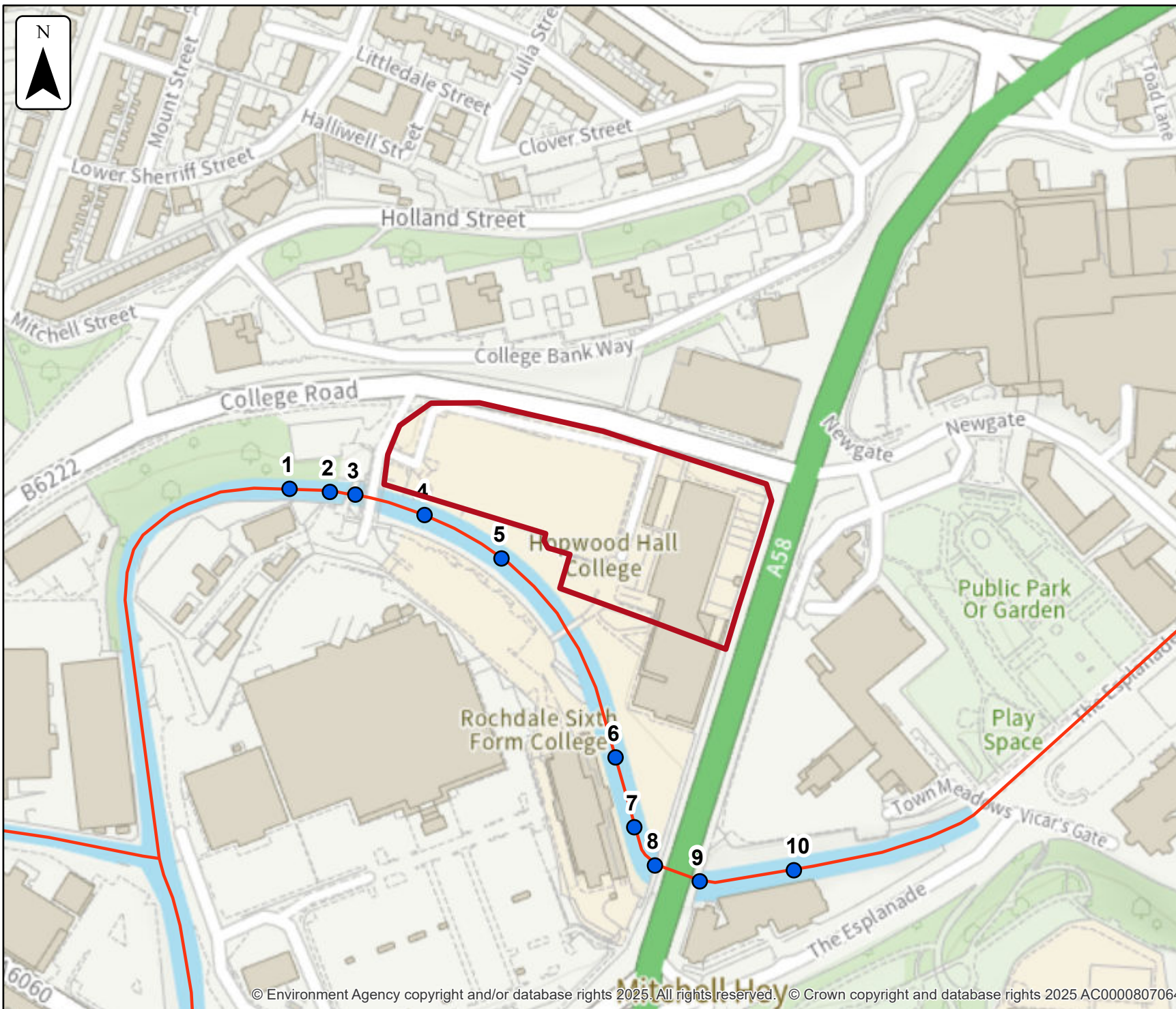
TITLE: BUFFER ZONE
FOR ENABLING WORKS

SCALE @ A0:	1:200	CHECKED:	JT	APPROVED:	JC
PROJECT NUMBER:	24365	DESIGNED:	AY	DATE:	JULY 2025

DRAWING NO:	FE0012-ROS-XX-XX-D-C-0555	REV:	P01
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Appendix C

Product 4 Data



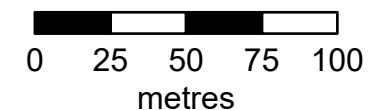
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
389295/413385

Scale Created
1:2,500 23 Jul 2025

Model name
**Rochdale and
Littleborough 2013**

- Selected area
- Modelled location
- Main river



Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+35%)	1% AEP (+70%)	1% AEP (+20%)	1% AEP (+35%)	1% AEP (+70%)
				Level	Level	Level	Flow	Flow	Flow
1	1674011	389146	413395	118.53	118.73	119.16	59.14	54.94	55.11
2	1673900	389165	413393	118.53	118.73	119.16	60.54	54.42	54.06
3	1673886	389178	413392	118.82	118.98	119.33	60.54	54.42	54.06
4	1674171	389211	413382	118.85	119.01	119.35	57.39	50.34	49.60
5	1673835	389248	413361	118.85	119.01	119.35	56.93	51.86	51.31
6	1674601	389304	413265	118.70	118.81	119.14	96.95	99.95	104.78
7	1674006	389313	413231	118.79	118.91	119.26	92.43	93.32	94.86
8	1674314	389323	413212	118.89	118.99	119.29	95.49	98.76	105.42
9	1674635	389345	413205	119.07	119.18	119.48	95.49	98.77	105.44
10	1674704	389390	413210	119.05	119.15	119.46	95.51	98.79	105.47

Data in this table comes from the Rochdale and Littleborough 2013 model.

Level values are shown in mAOD, and flow values are shown in cubic metres per second.

Any blank cells show where a particular scenario has not been modelled for this location.