



The Nurture Project CIC  
Low Hall  
Haydon Bridge

## Flood Risk Assessment

Report Ref: JCC23-078-C-01  
Revision: 00, April 2023

Civil Engineering  
Structural Engineering  
Geo-Environmental Engineering

## Document Control Sheet



The Nurture Project CIC  
Low Hall, Haydon Bridge

### FLOOD RISK ASSESSMENT

**Client:** The Nurture Project CIC

**Client Address:** Low Hall  
Haydon Bridge  
Northumberland  
NE47 6AF

**Project Reference:** JCC23-078

**Report Reference:** JCC23-078-C-01-00

**Status:** Planning

**Author:** A Short

#### Revision Record:

Rev.	Date	Status	Prepared	Signed	Checked	Signed	Approved	Signed
00	10/04/2023	Planning	A Short		T Holland		K Haigh	

## CONTENTS PAGE

1	BACKGROUND .....	1
1.1	BRIEF .....	1
1.2	REPORT SCOPE .....	1
2	RELEVANT POLICY, LEGISLATION AND GUIDANCE .....	2
2.1	OVERVIEW .....	2
2.2	NATIONAL PLANNING POLICY FRAMEWORK .....	2
2.3	THE FLOOD AND WATER MANAGEMENT ACT 2010 .....	3
2.4	NORTHUMBERLAND COUNTY COUNCIL STRATEGIC FLOOD RISK ASSESSMENT – LEVEL 1 .....	3
2.5	LOCAL FLOOD RISK MANAGEMENT STRATEGY FOR NORTHUMBERLAND .....	3
3	SITE AND SURROUNDINGS .....	4
3.1	SITE LOCATION AND DESCRIPTION .....	4
3.2	TOPOGRAPHY .....	4
3.3	HYDROLOGY .....	4
3.4	DRAINAGE .....	4
3.5	FLOOD DEFENCE .....	4
3.6	RESERVOIR .....	4
3.7	GEOLOGY AND HYDROLOGY .....	4
4	CURRENT SITE FLOOD CLASSIFICATION .....	5
4.1	FLOOD RISK AND PROBABILITY .....	5
4.2	FLOOD RISK VULNERABILITY AND FLOOD ZONE COMPATIBILITY .....	5
4.3	FLOOD ASSESSMENT .....	6
4.4	TIDAL FLOODING .....	6
4.5	RIVER (FLUVIAL) FLOODING .....	7
4.6	GROUNDWATER FLOODING .....	7
4.7	OVERLAND/SURFACE WATER (PLUVIAL) FLOODING .....	8
4.8	SEWER FLOODING .....	9
4.9	CANALS AND ARTIFICIAL WATERWAYS .....	9
4.10	RESERVOIRS AND LAKES .....	9
4.11	CLIMATE CHANGE .....	9
5	CONCLUSIONS AND RECOMENDATIONS .....	12
5.1	CONCLUSIONS .....	12
5.2	RECOMMENDATIONS .....	12
	LIST OF APPENDICES .....	13

## 1 BACKGROUND

### 1.1 BRIEF

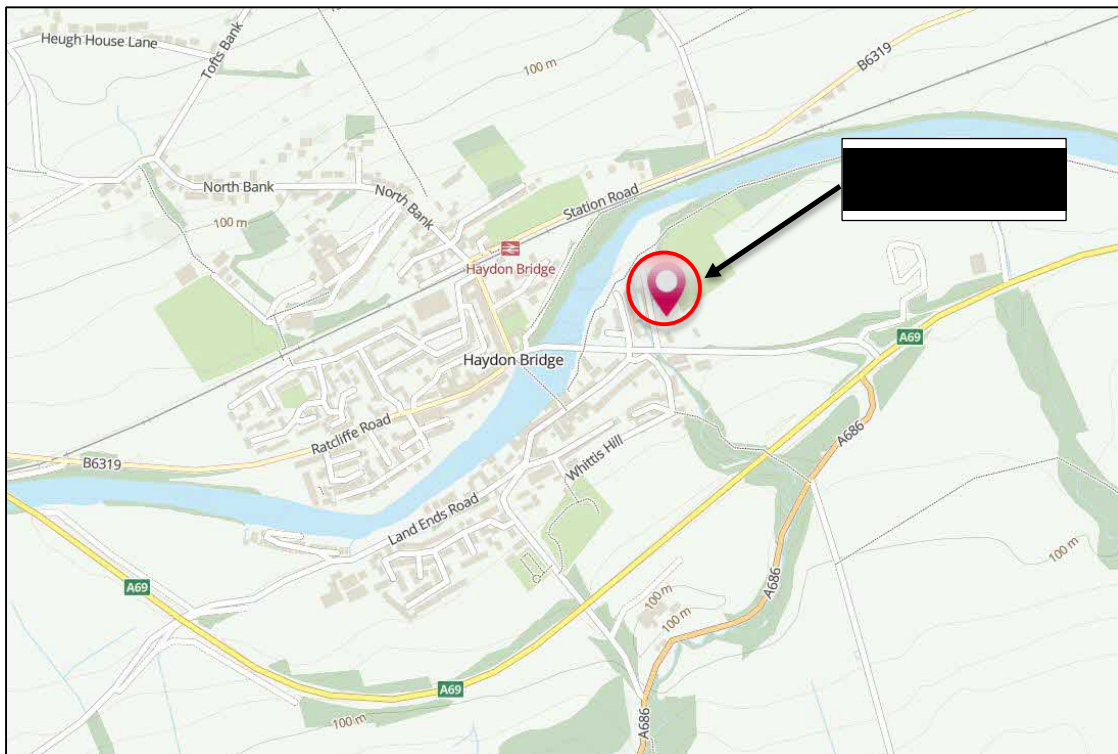
JC Consulting have been commissioned by The Nurture Project CIC to undertake a Level 1 Flood Risk Assessment (FRA) for the development of a Community Garden, which will involve the redevelopment of unused agricultural land to a community garden, refer to Appendix A for the Proposed Plan. This site-specific FRA has been completed to support the planning application.

A site location plan is shown in Figure 1.1. The site is located at Ordnance Survey Grid Ref: NY 84585 64430.

Developments have the potential to be at risk of a range of flooding mechanisms and increase the potential flood risk to the development and the surrounding area. As such flood risk is assessed with respect to damage to properties, risk to human life, and the effect the development may have on surrounding bodies of water and drainage systems. This Level 1 FRA has been prepared to examine the possible sources of flooding, within the context of the National Planning Policy Framework (NPPF) and Technical Guidance.

Consultation will be undertaken with the Environment Agency (EA), Northumbrian Water (NWL) and Northumberland County Council (NCC) as part of the planning application. Data has also been gathered from a number of other sources including National Soil Research Institute (NSRI), local ground investigations, aerial photographs, Ordnance Survey (OS), evidence obtained from the EA online tools and anecdotal evidence.

Figure 1.1 - Ordnance Survey Map – Site Location



### 1.2 REPORT SCOPE

The objectives of this report are as follows: The Level 1 FRA is based on readily available existing information, including reference to the Northumberland County Council Strategic Flood Risk Assessment (SFRA) to confirm the extent of flood risk at the site. The report includes the review of site information and likely extent of any flood risk at the site; identification of whether there are any flooding or surface water management issues related to the development that may warrant further consideration; identification and scoping of other flood risks as required i.e. groundwater flooding; and determining whether further assessment is required i.e. a Level 2 FRA.

An FRA should consider a range of flooding mechanisms to satisfy the following three key objectives:

To assess flood risk to the proposed development and to demonstrate whether any residual risk to the development and its user would be acceptable;

To assess the potential impact of the proposed development on flood risk elsewhere and to demonstrate that the development would not increase flood risk elsewhere; and

To satisfy the requirements of national planning policy.

Flood risk should be considered alongside other spatial planning matters such as transport, housing, economic growth, natural resources, regeneration, biodiversity, the historic environment and the management of other hazards. Policies should recognise the positive contribution that avoidance and management of flood risk can make to the development of sustainable communities, including improving local amenities and better overall quality of life.

An FRA should be carried out to an appropriate degree at all levels of the planning process. It should assess the risks of all forms of flooding to and from the development, considering climate change, and should inform the application of the sequential approach if applicable.

CIRIA C624 “Development and Flood Risk – Guidance for the Construction Industry” recommend a phase approach with three levels of assessment as define below:

Level 1: Screening Study to identify whether there are any flooding or surface water management issues related to a development site that may warrant further consideration. The screening study will ascertain whether a Level 2 or 3 FRA is required.

Level 2: Scoping Study to be undertaken if the Level 1 FRA indicates that the site may lie within an area that is at risk of flooding, or that the site may increase flood risk due to increase run-off. This study should confirm the sources of flooding which may affect the site.

Level 3: Detailed Study to be undertaken if the Level 2 study concludes that the quantitative analysis is required to assess the flood risk related to the development site.

## 2 RELEVANT POLICY, LEGISLATION AND GUIDANCE

### 2.1 OVERVIEW

The Level 1 FRA has been undertaken using the following legislation and guidance:

National Planning Policy Framework

Flood and Water Management Act

Northumberland County Council Strategic Flood Risk Assessment – Level 1

Local Flood Risk Management for Northumberland

### 2.2 NATIONAL PLANNING POLICY FRAMEWORK

The NPPF published in July 2018 and updated in February 2019, is a key part of the government’s reform to make the planning system less complex and more accessible; to protect the environment and to promote sustainable growth.

In addition, the Technical Guidance to the NPPF published by the Department for Communities and Local Government has also been reviewed in relation to flood risk. This document provides additional guidance to ensure the effective implementation of the planning policy set out in the NPPF on development in areas at risk of flooding.

The NPPF aims to prevent inappropriate development in areas at risk of flooding and to ensure that, where development is necessary in areas at risk of flooding, it is safe without increasing flood risk elsewhere. Local Authorities should only consider development in flood risk areas appropriate where informed by a site-specific FRA, based upon the EA’s Standing Advice on flood risk.

The NPPF requires that a site-specific FRA is required for proposals of 1 hectare or greater in Flood Zone 1; all proposals for new development (including minor development and change of use) in Flood Zones 2 and 3, or in an area within Flood Zone 1 which has critical drainage problems (as notified to the local planning authority by the EA); and where proposed development or a change of use to a more vulnerable

class may be subject to other sources of flooding. This means that the FRA should identify and assess the risks of all forms of flooding to and from the development and demonstrate how flood risks will be managed so that the development remains safe throughout its lifetime, taking climate change into account.

Development should be directed as far as practicable towards Flood Zone 1 areas (Low Probability (<0.1% Annual Exceedance Probability (AEP) of fluvial/ sea flooding)) to avoid fluvial flood risks wherever this is possible. For development proposed in Flood Zone 1, if the development area is greater than 1 hectare a FRA will still be required to address design issues related to the control of surface water runoff and climate change, as well as considering any other potential sources of flood risk for the development site.

### 2.3 THE FLOOD AND WATER MANAGEMENT ACT 2010

The Flood and Water Management Act 2010 determined the need for flood risk to be managed within the framework of National Strategies for England and Wales and within Local Strategies for each Local Flood Authority Area. The national strategy for England sets out the principles for flood risk management and which organisations are responsible for implementation.

In accordance with the national strategy for England, Lead Local Flood Authorities (LLFAs) have been allocated responsibility for developing independent Local Flood Risk Management Strategy's (LFRMS's) to address sources of local flooding. Each LFRMS identifies which local organisation is accountable for managing flood risk and establishes partnership agreements, as well as undertaking an assessment of flood risk and developing plans / actions, for tackling these risks.

### 2.4 NORTHUMBERLAND COUNTY COUNCIL STRATEGIC FLOOD RISK ASSESSMENT – LEVEL 1

The Level 1 Strategic Flood Risk Assessment (SFRA) was undertaken to provide a robust assessment of the extent and nature of the risk of flooding and its implications for land use planning. The principle aim is to set out flood risk constraints to help inform the preparation of the Local Development Framework for Northumberland.

### 2.5 LOCAL FLOOD RISK MANAGEMENT STRATEGY FOR NORTHUMBERLAND

The Local Flood Risk Management Strategy (LFRMS) for Northumberland was prepared to meet the requirements of the Flood risk Regulations. Northumberland County Council has a duty to develop, maintain, apply and monitor a strategy for local flood risk management that encompasses all sources of flooding. This strategy aims to provide a framework for how they will manage local flood risk.

## 3 SITE AND SURROUNDINGS

### 3.1 SITE LOCATION AND DESCRIPTION

The proposed development has an approximate site area of 3,880m<sup>2</sup>. The site is currently used for agricultural land. The site is accessed from the south eastern corner, approximately 40m north of the B6319.

a previously developed brownfield site with an existing hall and landscape gardens, situated approximately 75m to the south of The Field adopted highway. The site is bounded by drystone walls to the north, east and west with a masonry wall to the south. To the north of the site is Low Hall Park, playing fields used by Haydon Bridge United Football Club, beyond this is Langley Burn and the River South Tyne. To the east of the site is Low Hall Park and agricultural land beyond this. To the south of the site are residential dwellings and gardens, with the B6319 beyond this. To the west of the site are residential dwellings, with Langley Beck and further residential dwellings beyond this.

### 3.2 TOPOGRAPHY

A topographical survey for the site has not been carried out. Following a review of the ordnance survey plans for the area, the site generally falls from west to east, from a level of approximately 63.0m to 62m respectively. The gradient slope across the site is approximately 1:60.

### 3.3 HYDROLOGY

The Ordnance Survey maps, and EA maps show that the site is within the River South Tyne Catchment, approximately 100m to the north. Langley Beck flows from south to north approximately 30m to the west of the site, beyond residential dwellings. There are no other watercourses within the vicinity of the site.

### 3.4 DRAINAGE

Northumbrian Water have been contacted to assess if they have any sewerage assets within the vicinity of the site, see Appendix B for NWL Sewerage Plan. There is a 150mm diameter combined water sewer within the western edge of the site, flowing from south to north. There is also a 150mm diameter combined sewer connection to the sewer from Low Hall Cottage to the south of the site. To the north of the site within the grounds of Haydon Bridge United Football Club is a sewage pumping station with a rising main heading in an easterly direction, and a combined sewer overflow with a discharge to Langley Burn.

### 3.5 FLOOD DEFENCE

There are 3 No. flood defence structures to the north and north west of the site boundary identified on the EA flood maps. The flood defences appear to be flood embankments to protect the area from flooding from the River South Tyne.

### 3.6 RESERVOIR

There are no reservoirs within 1km of the site boundary.

### 3.7 GEOLOGY AND HYDROLOGY

A Site Investigation has not yet been carried out for the site.

However, with reference to BGS Geology of Britain Viewer (2020) the bedrock geology are shown to be Stainmore Formation, mudstone, sandstone and limestone, with superficial deposits of Alluvium, clay silt, sand and gravel.

## 4 CURRENT SITE FLOOD CLASSIFICATION

### 4.1 FLOOD RISK AND PROBABILITY

The risk framework outlined in the SFRA defines the flood risk using the categories in Table 4.1. The EA flood map defines the geographical extent of fluvial flooding for Flood Zones 1, 2, 3a and 3b.

Table 4.1 Fluvial Flood Zone Definition

Flood Zone	Definition	Probability
Flood Zone 1	At risk from flood event greater than the 1 in 1000 year event (greater than 0.1% annual probability).	Low Probability
Flood Zone 2	At risk from flood event between the 1 in 100 and 1 in 1000 year event (between 1% and 0.1% annual probability)	Medium Probability
Flood Zone 3a	At risk from a flood event less than or equal to the 1 in 100 year event.	High Probability
Flood Zone 3b	Land which would flood with an annual probability of 1 in 20 (5%) or greater in any year or is designed to flood in an extreme (0.1%) flood or otherwise defined by the Local Planning Authority. This zone also comprises land where water has to flow or be stored in times of a flood.	Functional Flood Plain

Flooding is a natural process that can present a range of different risks depending on its form. Flood practitioners and professionals define the risks presented by flooding according to an Annual Exceedance Probability (AEP), or as having a 'return period'.

Flood Risk includes the statistical probability of an event occurring and the scale of the potential consequences. Flood risk is estimated from historical data and expressed in terms of the expected frequency of a flood of a given magnitude. The 10 year, 50 year and the 100 year floods have a 10%, 2%, and 1% chance of occurring in any given year, respectively. However, over a longer period the probability of flooding is considerably greater.

For example, for the 100 year return period flood:

- There is a 1% chance of the 100 year flood occurring or being exceeded in any single year;
- A 26% chance of it occurring or being exceeded in a 30 year period; and
- A 51% chance of it occurring or being exceeded in a 70 year period.

Table 4.2 below provides a summary of the relevant AEP and corresponding return period events of a particular severity.

Table 4.2 Definition of AEP and Return Period Flood Events

AEP	Definition
100%	1 in 1 Year
10%	1 in 10 Years
2%	1 in 50 Years
1%	1 in 100 Years
0.5%	1 in 200 Years
0.1%	1 in 1000 Years

### 4.2 FLOOD RISK VULNERABILITY AND FLOOD ZONE COMPATIBILITY

In terms of flood risk vulnerability, the proposed development is classified as 'Water-Compatible Development' in the NPPF and SFRA which includes amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.



The SFRA states that the suitability of all sites in flood risk terms will be subject to ratification by the EA, a detailed site-specific FRA being prepared to support any planning application and demonstration that surface water runoff from the development will pose no detrimental impact to off-site areas.

The proposed site is 'Water-Compatible Development' and as such is suitable for Flood Zones 1, 2 & 3. The site is classified by the EA as being in Flood Zone 1; therefore, the proposed development is suitably located. See Appendix C for the EA Flood Map for Planning.

### 4.3 FLOOD ASSESSMENT

Potential sources of flooding and associated mechanisms for review are as follows:

- Tidal Sources - Potential flooding resulting from tidal sources;
- River (Fluvial and Tidal) Sources - Potential flooding resulting from watercourses near to the site or from the sea;
- Groundwater Flooding- Potential flooding as a result of rising groundwater levels;
- Overland/Surface water (Pluvial) Flooding - Potential flooding as a result of surface water flows from adjacent land;
- Sewers and Drains - Potential flooding resulting from sewers or drains;
- Canals and Artificial Waterways - Potential flooding resulting from failure or overtopping canal networks;
- Reservoir/Lake Flooding - Potential flooding resulting from overtopping or bursting of reservoirs or lakes;
- Infrastructure - Potential flooding as a result of failed or burst water mains; and
- Climate Change – Potential rise in sea levels and estimated peak flows of watercourse.

### 4.4 TIDAL FLOODING

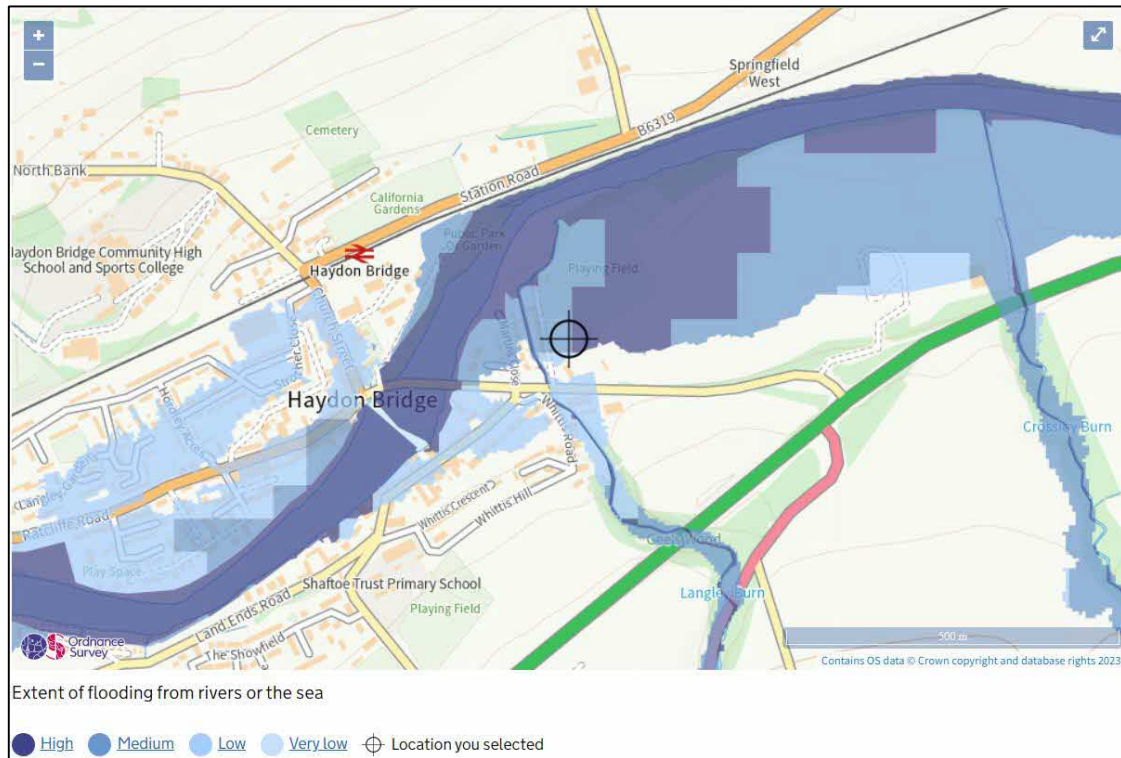
Coastal flooding occurs when sea levels rise above the normal tidal range. This can happen anywhere around the coast, including the estuaries. Tidal flooding is a result of one or a combination of high tides, storm or tidal surges, wave action and high sea levels combining with high river flows.

The site is located inland and does not lie within an area at risk of tidal flooding. Tidal flooding is therefore not a flood risk associated with this proposed development and requires no further consideration.

#### 4.5 RIVER (FLUVIAL) FLOODING

The EA flood map for the area shows the site is located within areas defined as being at high and medium risk of flooding from rivers or the sea, see figure 4.5.

Figure 4.5 Environment Agency – Fluvial Flood Map



According to the EA, where there is blue shading, this shows the area where flooding from rivers is possible in an extreme event. There is greater than a 1 in 30-year event (greater than 3.3% annual probability) chance of flooding for the site. Haydon Bridge has historically suffered from flooding with a number of incidents in recent years, with the SFRA confirming fluvial flooding. The SFRA also confirms that there are flood defences in place to offer protection to the area from fluvial flooding. Additionally, Haydon Bridge benefits from a flood warning service from the EA.

As the proposed development is for a Community Garden, there will be little change to the existing topography and there will be minimal change to the impermeable area, therefore, there will be no increase in flood risk to the surrounding area. Whilst the development will be at risk of flooding, based on the proposals, there will not be any risk of significant infrastructure damage to the development in the event of flooding.

For planning and development purposes, this is the same as Flood Zone 3. A comparison of Flood Risk Vulnerability and Flood Zone compatibility indicates that the development is appropriate as it is located in Flood Zone 3 and greater than 3.3 % risk annually of flooding; therefore there is no requirement for the sequential or exception tests in relation to fluvial flooding. It is recommended that the operators of the development subscribe to the EA flood warning service to ensure that there are no people in the vicinity of the Community Garden in the event of flooding. As the development is for a Community garden, it is likely that the majority of people utilising the development live local and are aware of suitable procedures in the event of a flood.

#### 4.6 GROUNDWATER FLOODING

Groundwater flooding generally occurs during intense, long-duration rainfall events, when infiltration of rainwater into the ground raises the level of the water table until it exceeds ground levels. Groundwater flooding may take weeks or months to dissipate as groundwater flow is much slower than surface water flow and water levels thus take much longer to fall. Groundwater flooding is sporadic in time and location,

but when it does occur, it usually lasts longer than surface water flooding and interferes with property and infrastructure (such as roads). Groundwater levels may also rise as a result of reactivating springs.

Based on the geological information available it is unlikely that the geological strata would be highly responsive to rainfall events and therefore the changes in groundwater level over time are unlikely to be significant resulting in groundwater flooding issues. The information available suggests that the site is not at risk from groundwater flooding.

#### 4.7 OVERLAND/SURFACE WATER (PLUVIAL) FLOODING

Pluvial and overland flow results from rainfall that fails to infiltrate the surface and travels over the ground surface. This is exacerbated by low permeable urban development or low permeability soils and geology (such as clayey soils). Overland flow is likely to occur at the base of an escarpment and low points in terrain. Local topography and built form can have a strong influence on the direction and depth of flow. The design of development down to a micro-level can influence or exacerbate this. Overland flow paths should be taken into account in spatial planning for urban developments. In addition, surface water flooding can be exacerbated if development increases the percentage of impervious area.

The EA flood map as shown in Figure 4.7 has identified that there is a high risk of pluvial flooding. This means that this area has a chance of flooding greater than 3.3% each year.

Figure 4.7 Environment Agency – Pluvial Flood Map



The pluvial flood risk appears to be due to incapacity within Langley Beck to the west of the site during prolonged periods of rainfall. Langley Beck appears to become overwhelmed with flows spilling from the watercourse to the south of the residential properties to the west of the site. Flows then appear to follow the natural topography of the land to the north east. It is anticipated that surface water would flow across the site and the neighbouring Haydon Bridge United Football Club grounds towards the River South Tyne.

As the proposed development is for a Community Garden, there will be little change to the existing topography and there will be minimal change to the impermeable area, therefore, there will be no increase in flood risk to the surrounding area. Whilst the development will be at risk of flooding, based on the proposals, there will not be any risk of significant infrastructure damage to the development in the event of flooding.

#### 4.8 SEWER FLOODING

Flooding can occur when the sewerage infrastructure becomes overwhelmed by heavy rainfall (due to inadequate capacity) or blockages in drain systems (such as silt or debris accumulation). Works above or adjacent to existing sewer networks may also damage buried pipeline to the extent that it leads to flooding through damage during excavations or through damage causing blockages below ground.

As there is a combined sewer overflow on the NWL sewerage downstream of the site, it is anticipated that if the sewerage network were to become overwhelmed, then flows would spill to Langley Beck before flooding of the site would occur.

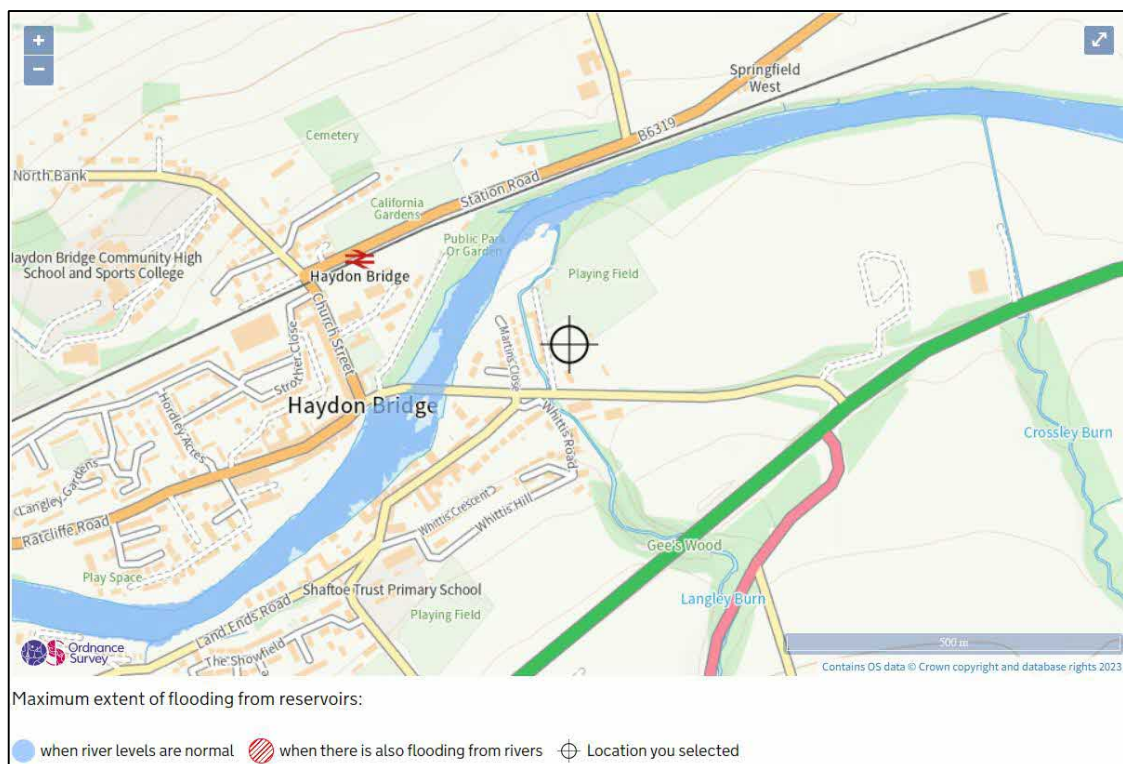
#### 4.9 CANALS AND ARTIFICIAL WATERWAYS

There are no canals or artificial waterways within 1km of the site boundary, as such flood risk is considered low as such no further consideration of this flooding type is required.

#### 4.10 RESERVOIRS AND LAKES

When reservoirs and lakes flood, there can be implications beyond the immediate area of the water body. The EA flood map shown in Figure 4.10, shows that the site is not considered to be at risk of flooding from failure of a body of water.

Figure 4.10 Environment Agency – Reservoir Flood Map



The likelihood of reservoir flooding is much lower than other forms of flooding. Current reservoir regulation, which has been further enhanced by the Flood and Water Management Act, aims to make sure that all reservoirs are properly maintained and monitored in order to detect and repair any problem.

The site does not lie within an area at risk of reservoir flooding and is therefore not a flood risk associated with this proposed development and requires no further consideration.

#### 4.11 CLIMATE CHANGE

When assessing the potential flood risk of the site over the lifetime of the development, climate change must be considered. Making allowances for climate change will help minimise vulnerability and provide resilience to flooding and coastal change.

Climate change allowances are predictions of the rates of change for:

- Peak River Flows
- Peak Rainfall Intensity
- Sea Level Rises
- Offshore Wind Speed and Extreme Wave Height

The EA have considered the different climate scenarios over periods of time, throughout the coming century.

Peak river flow allowances indicate the changes to peak flows by the management catchment. The range of allowances is based upon percentiles. A percentile is defined by the proportion of scenarios that lie below an allowance level. Therefore, the central allowance is based on the 50th percentile, higher central allowance is based upon the 70th percentile and the upper end allowance is based upon the 95th percentile.

The NPPF guidance recommends that both the central and upper end allowances should be considered to understand the range of impact. The peak river flow allowances for the site are shown below:

Table 5.9 – Site Specific Peak River Flow Allowances

Lower Trent & Erewash Catchment	Total Potential Change Anticipated for 2020s	Total Potential Change Anticipated for 2050s	Total Potential Change Anticipated for 2080s
Central	+18%	+22%	+34%
Higher	+22%	+28%	+42%
Upper	+31%	+42%	+64%

Further to a review of peak river flow allowances, it is understood that to adequately take climate change into account for the site, the total potential change anticipated should be within the central allowance category (for a development within Flood Zone 3 which is classified as “water compatible”). As such a +34% allowance for climate change should be allowed. However, based on the location of the site with consideration of all flooding mechanisms, it is not considered that peak river flows caused by climate change will increase the flood risk of the site.

Peak rainfall intensities must also be considered, when assessing the impact climate change has on the flood risk of the site.

Table 5.9.1 – Peak Rainfall Intensity by management catchment

Type Catchment	Total Potential Change Anticipated for 2050s for 30 year return period	Total Potential Change Anticipated for 2050s for 100 year return period	Total Potential Change Anticipated for 2070s for 30 year return period	Total Potential Change Anticipated for 2070s for 100 year return period
Central	+20%	+25%	+30%	+30%
Upper	+35%	+40%	+40%	+45%

For the proposed development site, a peak rainfall intensity allowance of +30% is appropriate for the central allowances.

There are also a range of allowances for each river basin district, which helps to assess the effects of climate change with regards to sea level rises. However, due to the location of the site, it is not considered to be affected by potential sea level rises within its lifetime.

Offshore wind speed and extreme wave height allowances are caused by increases in water depths and changes to the frequency, duration and severity of the storms. However, due to the site being located inland, offshore wind speeds and extreme wave heights are not anticipated to affect the flood risk of the development.



## 5 CONCLUSIONS AND RECOMENDATIONS

### 5.1 CONCLUSIONS

This Level 1 FRA concludes that:

Tidal Flooding – The Environment Agency mapping shows that the site is not at risk from tidal flooding and as such will not require further assessment.

River Flooding (Fluvial) – The environment agency mapping shows the site is at a high risk of fluvial flooding. As the proposed development is for a Community Garden, the proposed use is suitable based on the EA Flood Zone compatibility. As there is proposed to be little change to topography and impermeable area there will be no increase in flood risk to areas beyond the site;

Groundwater Flooding - There is a low risk of groundwater flooding occurring at the site, therefore no further assessment is required with respect to groundwater flooding;

Surface Water (Overland) Flooding - The Environment Agency mapping shows that the site is a high risk area of flooding from surface water. As the proposed development is for a Community Garden, the proposed use is suitable based on the EA Flood Zone compatibility. As there is proposed to be little change to topography and impermeable area there will be no increase in flood risk to areas beyond the site;

Sewer Flooding – There is a combined sewer overflow on the NWL sewerage downstream of the site, it is anticipated that if the sewerage network were to become overwhelmed, then flows would spill to Langley Beck before flooding of the site would occur;

Canals and Artificial Waterways Flooding – The location of canals and artificial waterways are sufficiently far from the site and therefore unlikely to result in flood risk and as such will not require further assessment;

Reservoirs and Lakes – The Environment Agency mapping shows that the site is not at risk of flooding and as such will not require further assessment;

Climate Change - The potential impacts of climate change will likely increase the risk of flooding of the site. As the proposed development is for a Community Garden the impacts are considered to be negligible.

### 5.2 RECOMMENDATIONS

The FRA demonstrates that the site is suitably located based on the proposed land use and designated flood zone. It is recommended that the operators of the Community Garden sign up to the EA Flood Warning Service for the area.

LIST OF APPENDICES

APPENDIX A: PROPOSED SITE PLAN

APPENDIX B: NORTHUMBRIAN WATER SEWERAGE PLAN

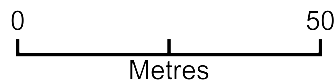
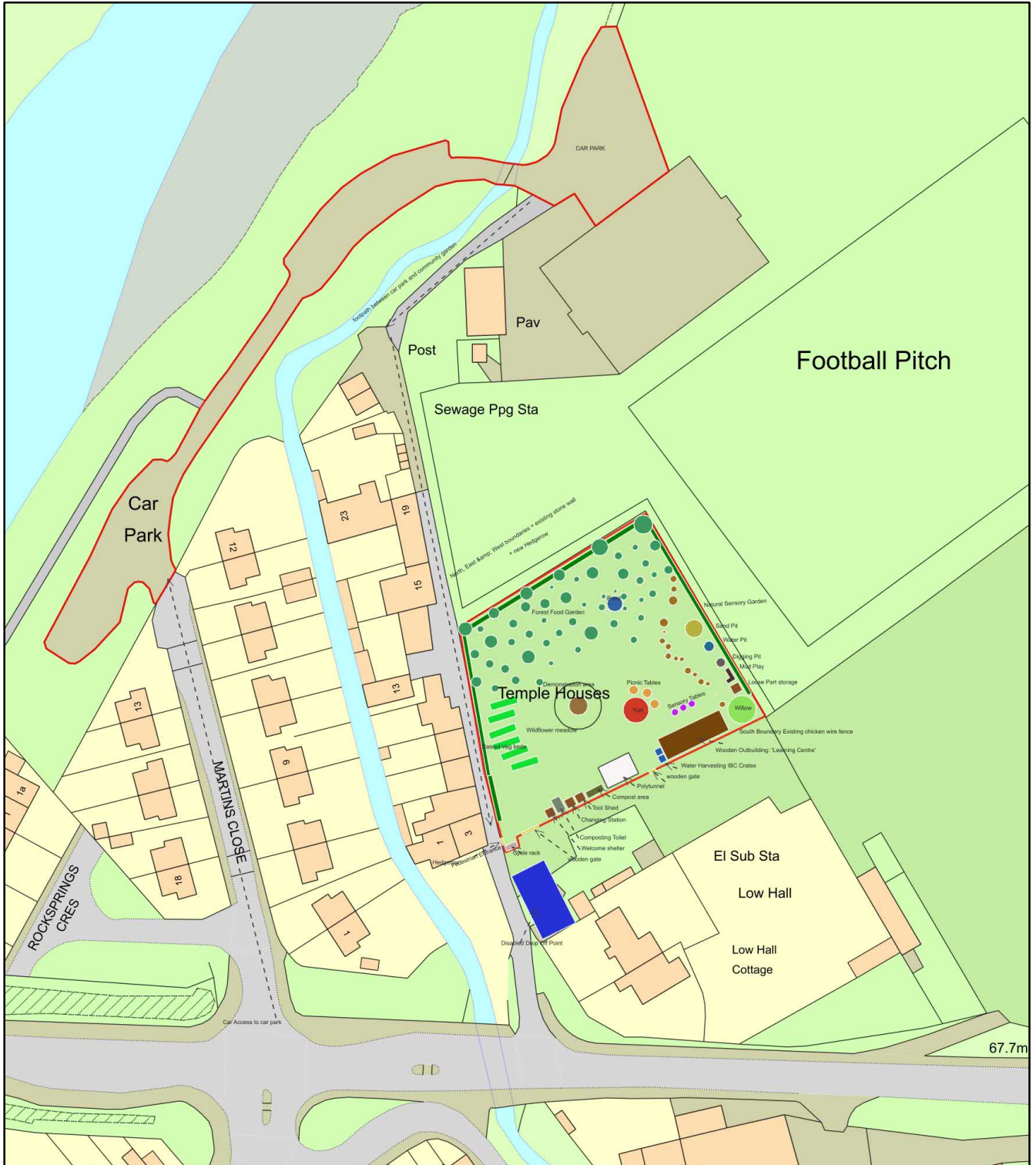
APPENDIX C: EA FLOOD MAP FOR PLANNING



# APPENDIX A

## PROPOSED SITE PLAN

# Proposed Site Plan



Plan Produced for: The Nurture Project CIC

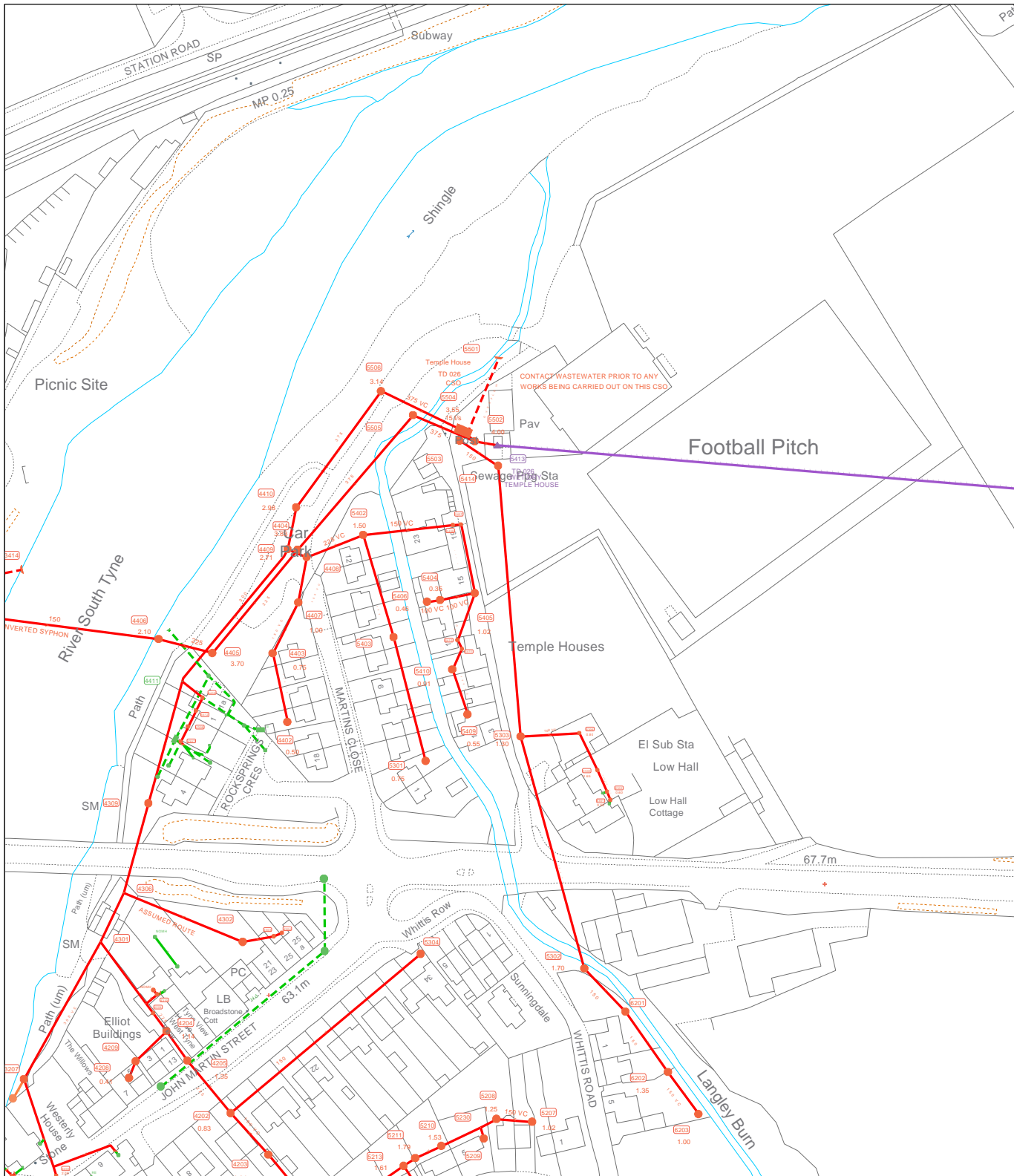
Date Produced: 20 Mar 2023

Plan Reference Number: TQRQM23079123055256

Scale: 1:1250 @ A4

# APPENDIX B

## NORTHUMBRIAN WATER SEWERAGE PLAN



NWL Responsibility		Private/Non NWL		Proposed		Annotations		Symbols	
Combined Foul	Red dashed line	Combined Foul	Green dashed line	Combined Foul	Purple dashed line	Direction of flow	Arrow with bar	Chambers	Black square
Surface	Blue dashed line	Surface	Green dashed line	Surface	Purple dashed line	Backdrop	Black circle	Capped End	Black square with T
Treated Eff	Blue solid line	Treated Eff	Green solid line	Surface	Purple solid line	Abandoned	Black circle with bar	Balancing Pond	Black square with T
Untreated Eff	Red solid line	Trade Eff	Yellow solid line	Watercourse	Blue solid line	Rising Main	Black circle with bar	Treatment Works	Black square with T
Overflow	Red dashed line	Watercourse	Blue solid line					Termination Node	Black square with T
								Unknown End	Black circle
								Attribute Change	Black circle with bar
								Air Valve	Black diamond
								Property Connection	Black circle with bar
								Lamp Hole	Black square
								Hatchbox	Black circle
								Dual Usage Chamber	Black circle with bar
								Rodding Eye	Black square

User : LANGP

Date : 06/04/2023

Title : 0000

Centre Point : 384566,564447

Map Sheet : NY8464SE



The material contained on this plot has been reproduced from an Ordnance Survey map with permission of the controller of H.M.S.O. Crown Copyright Reserved. Licence No.100022480. The information shown on this plan should be regarded as approximate and is intended for guidance only. No Liability of any kind whatsoever is accepted by Northumbrian Water, its servants or agents for any omission. The actual position of any water mains or sewers shown on the plan must be established by taking trial holes in all cases. In the case of water mains Northumbrian Water must be given two working days notice of their intention to excavate trial holes. With effect from 1 October 2011, private lateral drains and sewers automatically transferred to Northumbrian Water under a scheme made by the Secretary of State pursuant to section 105A Water Industry Act 1991. These former private drains and sewers together with existing private connections may not be shown but their presence should be anticipated. WARNING...Where indicated on the plan there could be abandoned asbestos cement materials or shards of pipe. If excavating in the vicinity of these abandoned asbestos cement materials, the appropriate Health & Safety precautions should be taken. Northumbrian Water accepts no liability in respect of claims, costs, losses or other liabilities which arise as the result of the presence of the pipes or any failure to take adequate precautions. Emergency Telephone Number: 0345 717 1100

20 m



# APPENDIX C

## EA FLOOD MAP FOR PLANNING

# Flood map for planning

Your reference  
<Unspecified>

Location (easting/northing)  
384595/564420

Created  
5 Apr 2023 16:15

**Your selected location is in flood zone 3, an area with a high probability of flooding.**

## This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see [www.gov.uk/guidance/flood-risk-assessment-standing-advice](http://www.gov.uk/guidance/flood-risk-assessment-standing-advice))

## Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>

