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PROJECT	Ravensthorpe Petrol Filling Station Dewsbury WF13 3LR	CLIENT	MBH Design Studio Ltd			
TITLE	Flood Risk Assessment	REFERENCE	22174-FRA-TN-01	C02		
AUTHOR		CHECKER		APPROVER		
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REV	COMMENTS	DATE	AUTH	CHKR	APPR	
C01	First issue	16/02/2023	FR	CB	TC	
C02	Update following changes to development proposal	19/06/2026	LM	DM	DM	

1 Introduction

- 1.1 Water Environment Limited were commissioned by MBH Design Studio Ltd to produce a Flood Risk Assessment (FRA) for the proposed development at Ravensthorpe Petrol Filling Station (PFS) located on Huddersfield Road, in Dewsbury, West Yorkshire WF13 3LR. The site is located within the jurisdiction of Kirklees Council (KC), which also fulfil the role of the Lead Local Flood Authority (LLFA).
- 1.2 The GOV.UK Flood Map for Planning¹ shows the site to lie within the Flood Zone 2. A Flood Risk Assessment (FRA) is required to support a planning application on the site in accordance with the National Planning Policy Framework² (NPPF). In addition, this FRA will address local requirements for planning including the KC Local Plan³ Policy LP27: Flood Risk.
- 1.3 This document has been prepared with due consideration of the NPPF, the latest planning practise and guidance for Flood Risk and Coastal Change⁴, the Environment Agency's (EA) Flood Risk Standing Advice (FRSA) for local planning authorities⁵, and local flood risk documentation.
- 1.4 The proposed development is deemed as a "minor" development and is therefore able to follow the EA FRSA for minor extensions.

¹ Available at: <https://flood-map-for-planning.service.gov.uk> (Accessed: 08/06/2026)

² Ministry of Housing, Communities and Local Government, National Planning Policy Framework, updated February 2025

³ Kirklees Council, Kirklees Local Plan Strategy and Policies, adopted February 2019

⁴ Ministry of Housing, Communities and Local Government, Planning Practice Guidance: Flood Risk and Coastal Change, updated September 2025

⁵ Preparing a flood risk assessment: standing advice, updated May 2026

2 Description of Development

- 2.1 The site is known locally as the Shell Petrol Filling Station (PFS). The site is on Huddersfield Road, in an urban context. The site is approximately 200 m to the River Calder and the Calder and Hebble Navigation.
- 2.2 The exact location of the site in relation to the Calder can be seen in Figure 1.

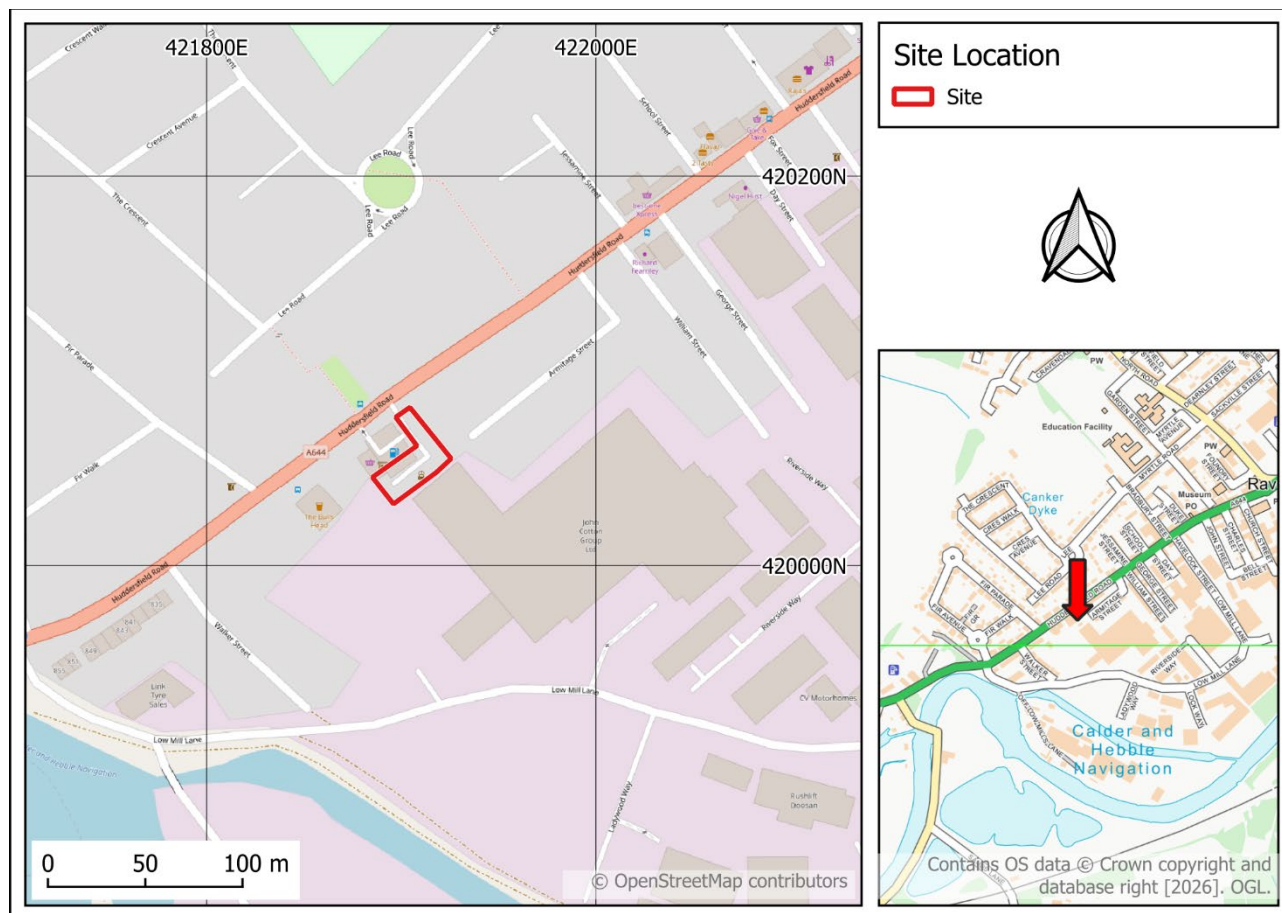


Figure 1: Site Location

- 2.3 The current site is used as a petrol filling station with a sales building and car wash.
- 2.4 The proposals include the removal of the existing jet wash, construction of two new jet washes, new plant room, a new floodlight and relocation of the existing lockers and gas cage to the north-east of the existing access road from Huddersfield Road. The site application area is 820 m².
- 2.5 The existing access route to the site is from Huddersfield Road, and is to be maintained post-development.
- 2.6 The current and proposed development drawings are attached in the appendix to this technical note.
- 2.7 Ground levels are assessed with the use of publicly available LiDAR⁶. As shown in Figure 2, levels on site vary from 42.72 m AOD at the access from Huddersfield Road, to 43.30 m AOD to the southwestern side of the site.

⁶ Available at: <https://environment.data.gov.uk/DefraDataDownload/?Mode=survey> [Accessed: 10/02/2023]

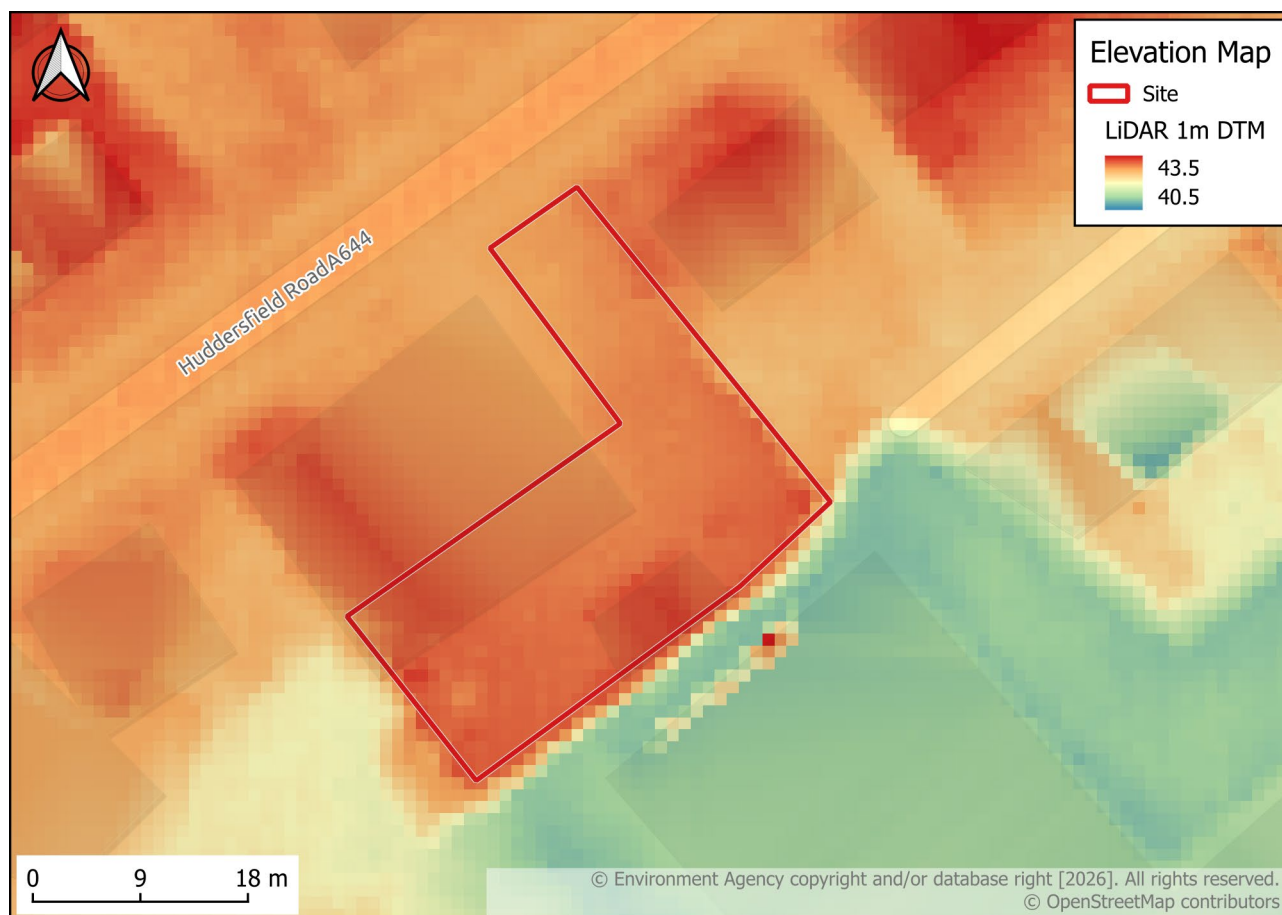


Figure 2: LiDAR Levels

3 Assessment of Flood Risk

- 3.1 In assessing the risk of flooding for the site the EA Product 4, the Calder Catchment Level 1⁷ and Level 2⁸ Strategic Flood Risk Assessments (SFRA), Local Flood Risk Management Strategy⁹ (LFRMS), Calder Catchment Flood Management Plan¹⁰ (CFMP), Kirklees Preliminary Flood Risk Assessment¹¹, Kirklees Surface Water Management Plan¹² (SWMP) have been reviewed.
- 3.2 According to the SWMP, the Ravensthorpe area suffers from surface water flooding problems when the River Calder water levels are high and restrict the free discharge of the watercourses and public sewers, causing the drainage systems to back-up.
- 3.3 For the site, the primary source of risk of flooding to the site is from the River Calder, which has been reviewed with the current EA Product 4.
- 3.4 No documented history of flooding on site has been found to date, with the reviewed documents not including flooding that may have occurred after March 2022

⁷ JBA Consulting, Calder Catchment Strategic Flood Risk Assessment – Volume I (Kirklees Council), published April 2016

⁸ JBA Consulting, Calder Catchment Strategic Flood Risk Assessment – Volume II (Kirklees Council), published July 2016

⁹ Kirklees Council, Kirklees Local Flood Risk Management Strategy Report, published 2024

¹⁰ Environment Agency, Calder Catchment Management Plan, published December 2010

¹¹ Kirklees Council, Flood Risk Regulations 2009 Preliminary Assessment Report for Kirklees, published 2009

¹² Kirklees Surface Water Management Plan, published February 2011

History of flooding

- 3.5 The Environment Agency Historic Flood Extent map shows that areas 150 m southwest of the proposed development boundary, however the proposed development area was not affected. The Calder Catchment SFRA references the EA Historic Flood Map extents and notes fluvial flooding recorded in November 2000 as the source.
- 3.6 The EA product 4, included in the appendix of this technical note, includes mapping of past flood events in the area surrounding the site. All past flood events are a result of fluvial flooding, none of which affect the proposed development site.
- 3.7 No further records of flooding relating to the site or the surrounding area have been identified.

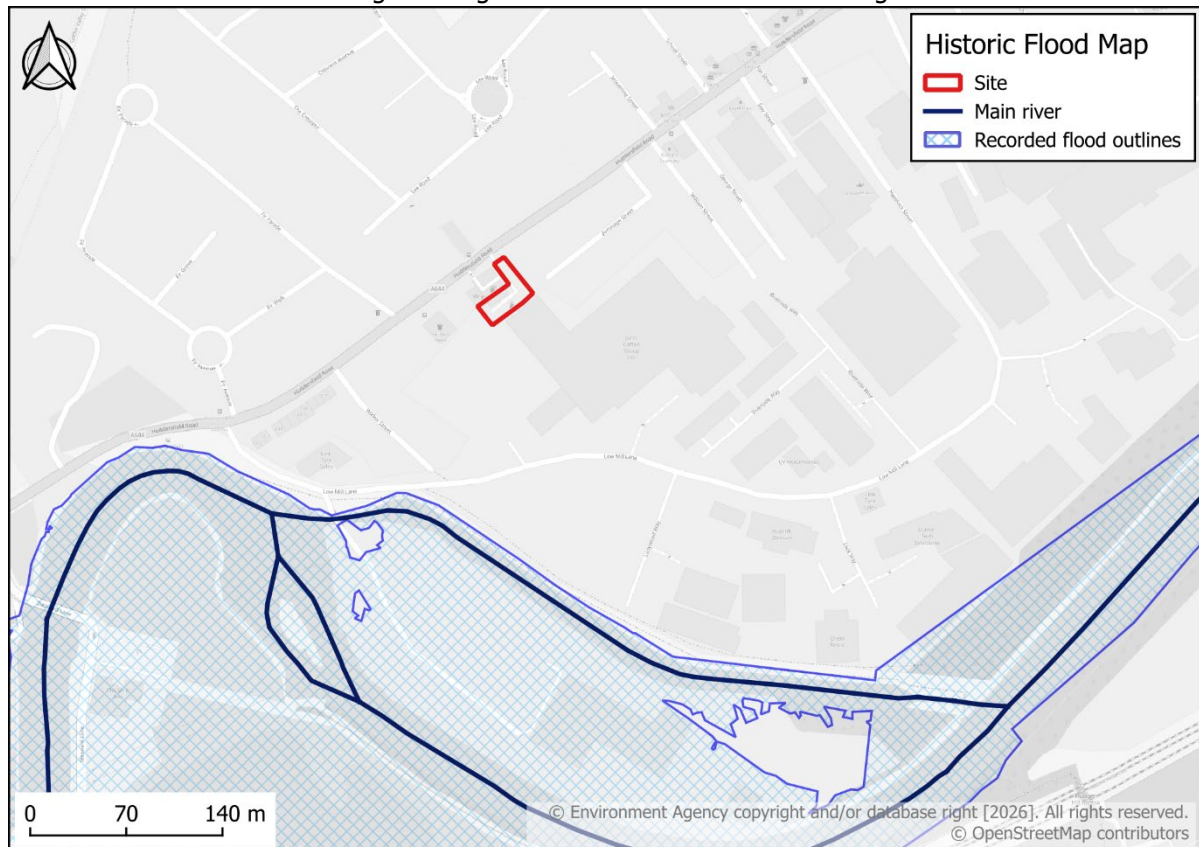


Figure 3: EA Historic Flood Map extents

Risk of Flooding from the Rivers

- 3.8 The GOV.UK Flood Map for Planning, presented in Figure 4, shows that the site is located entirely within Flood Zone 2 and 3. At this location Flood Zone 2 is defined as land having between 0.1% and 1% annual exceedance probability (AEP), and Flood Zone 3 as land having greater than 1% AEP of fluvial flooding, ignoring the presence of flood management infrastructure.
- 3.9 The site is therefore at potential risk of fluvial flooding, which will be assessed in greater detail in the following chapter of this report.
- 3.10 Due to elevated ground levels at the site, the site is not at risk of flooding from the sea.

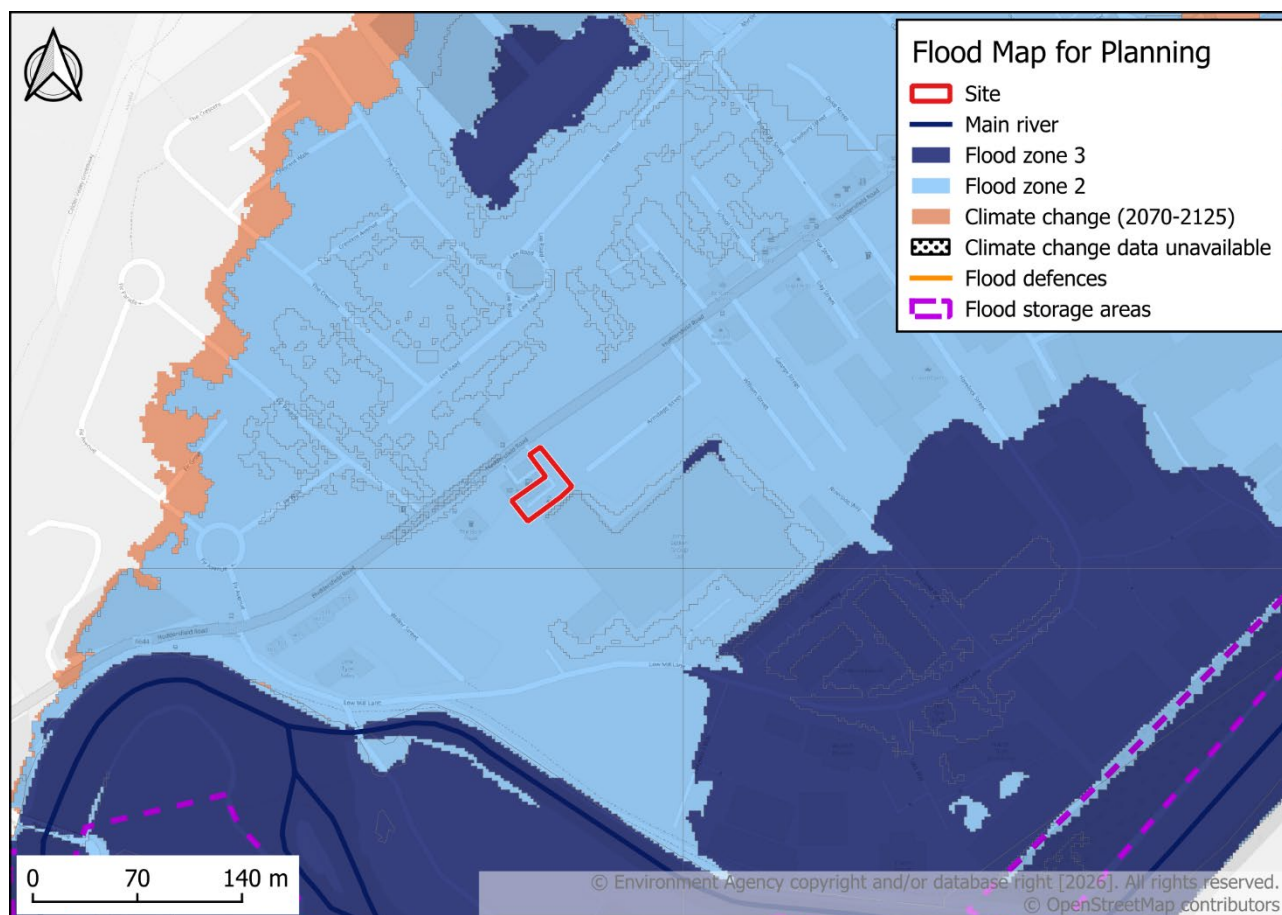


Figure 4: Flood Map for Planning

Climate Change

- 3.11 It is a requirement of the NPPF that climate change is included in the analysis of flood risk. The projected impacts of climate change are likely to result in increased risk of flooding from rivers due to increased intensity and frequency of extreme rainfall events. Climate change allowances are therefore included as part of the assessment.
- 3.12 Revised climate change allowances were defined in July 2021 and are presented within the Environment Agency's 'Flood risk assessments: climate change allowances' guidance available on the GOV.UK website. Management catchment climate change allowances from the peak river flow map should be used for the epoch most appropriate for the lifetime of the development.

Table 1: Aire and Calder Management Catchment climate change allowances

Epoch	Allowance category		
	Central	Higher	Upper
2020s	11%	15%	24%
2050s	13%	18%	31%
2080s	23%	31%	51%

- 3.13 The site is located in the Aire and Calder Management Catchment, and the climate change allowances for the catchment are presented in Table 1.
- 3.14 Climate change should be considered over the entire lifetime of the proposed development. Non-residential development is typically considered to have a lifetime of 75 years. Therefore, climate change allowances for the '2080s' epoch (2070 to 2125) will be considered.
- 3.15 The climate change guidance states that assessments should use the central allowance for 'less vulnerable' developments within Flood Zone 2 or 3a. The higher central should only be used where there is a potential for the scheme to impact on essential infrastructure, and the upper end presents a reasonable estimate of the maximum likely flood at any location. Therefore, an uplift on the peak river flow of 23% will be used in this assessment.
- 3.16 The "design flood" is a flood event of a given annual flood probability and for river flooding this is generally taken as flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year) plus an appropriate allowance for climate change. In this case, the design flood or design event is the 1% AEP plus 23% uplift for climate change event.

Modelled Flood Water Levels

- 3.17 Detailed hydraulic modelling has been undertaken by the EA as part of the 2015 Calder and Canals Study. The EA have provided the latest detailed flooding information relevant to the site via a Flood Risk information Product 4 request (see appendix). The provided data includes modelled river levels for the 50%, 20%, 10%, 1%, 4%, 3.33%, 2%, 1.33%, 1%, 1% + 20% climate change, 0.5% and 0.1% AEP events.
- 3.18 The EA modelling shows the site is primarily not affected by the 1% AEP + 20% climate change event but the floodplain does creep onto the site in the south eastern corner. The floodplain outline and flood levels are appended to this document. The 0.1% AEP event is shown to flood the entirety of the site.
- 3.19 Given the 2015 Calder and Canals Study has not been updated to reflect the latest climate change allowances, the current 0.1% AEP scenario for which depths on site are available has been used to assess the 'design event'.
- 3.20 According to the Product 4 provided by the EA, using the 0.1% AEP event as a surrogate of the 1% AEP + 23% climate change allowance event, the design flood water level is 43.28 m AOD. Ground levels in the southwestern corner of the site, the location of the proposals, range from 42.89 to 43.31 m AOD, therefore flood levels around this area are expected to be up to 390 mm deep. However, parts of the existing access road, the low point of the development site, are expected to experience up to 550 mm of flooding. The site is at risk of flooding in the 0.1% AEP event.
- 3.21 The proposed development has been designed with the highest possible levels and is unable to be raised further due to infrastructure related constraints. If flooding occurred and was greater than 390 mm in depth, the jet-wash equipment would be partially submerged and would cease operating under flood conditions. Following a flood event, all mechanical and electrical components associated with the jet-wash system would require inspection, cleaning and recommissioning prior to being returned to service.
- 3.22 Where practicable, vulnerable electrical components should be raised above the predicted flood level or otherwise protected to reduce the risk of damage and to support quicker recovery following a flood event. The proposed infrastructure equipment should be waterproofed if it is possible.

- 3.23 It is recommended that the site operators sign up to the EA's Flood Warning Service¹³, as part of the flood management plan of the site.
- 3.24 When the flood warning is triggered, site operators should remain vigilant and the site should take the necessary actions, to ensure the protection and recoverability of the site. This may include turning off the electrical supply and getting customers to remove their cars (to outside of the floodplain). Once the site is safely shut down, staff should evacuate the area. Both local and on-site conditions should be carefully monitored and considered, and the decision to activate site-specific flood protection procedures should not wait for an official EA Flood Warning if there is a direct and immediate threat of flooding to the site.
- 3.25 The proposed development has implemented suitable measures to reduce the risk of damage flooding. In the case of an event larger than the design event, the occupiers of the PFS are aware of the consequences and how to manage the site.

Risk of Flooding from Surface Water

- 3.26 Flooding from surface water can occur following intense local rainfall events when floodwater is unable to infiltrate into the ground or discharge into natural or artificial drainage infrastructure. In an urban environment, the risk of flooding from surface water and from overloaded sewers is closely related, and both are included in the relevant surface water flooding datasets. Flood water subsequently follows the topography of the local area. Surface water flooding events are typically of a short duration but can be severe.
- 3.27 The GOV.UK online flood mapping includes the risk of surface water flooding. The surface water flood extent can be seen in Figure 5. The dark blue shaded areas represent 'High' surface water flood risk, which are predicted to flood with a 3.3% AEP. While the lighter blue areas are at 'Medium' risk of surface water flooding, with a 1% AEP. Pale blue areas are at 'Low' risk of surface water flooding, with a between 0.1% AEP. Areas not highlighted are classified at 'Very Low' risk of surface water flooding, with a less than 0.1% AEP.
- 3.28 The map shows that the site is at very low risk of "flooding" and therefore the risk of flooding to the development is low.

¹³ Available at: <https://www.gov.uk/sign-up-for-flood-warnings>

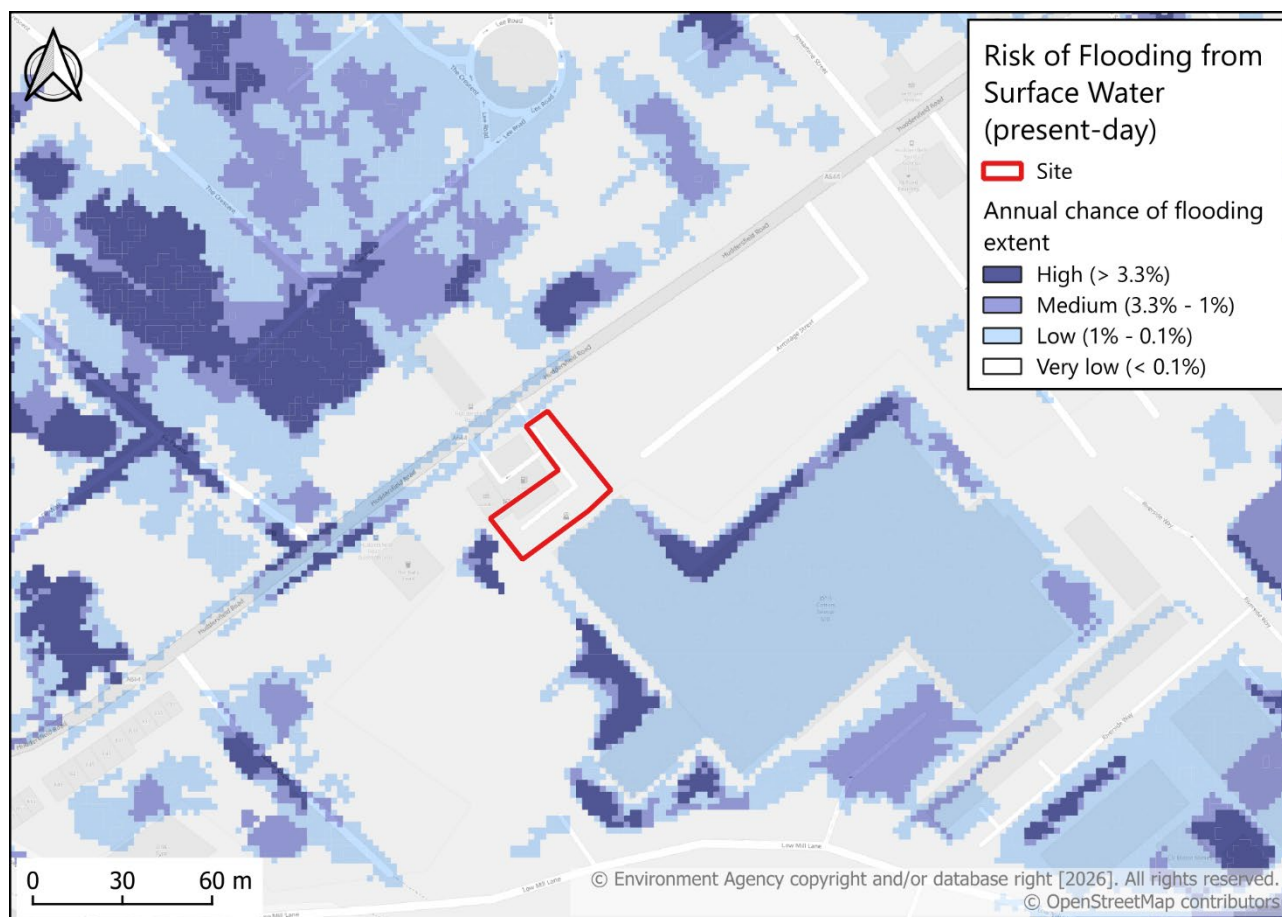


Figure 5: Risk from Surface Water Flood Extents

Risk of Flooding from Groundwater

- 3.29 Groundwater flooding occurs as a result of water rising up from an underlying aquifer or flowing from springs. This tends to occur after much longer periods of sustained high rainfall, and the areas at most risk are often low-lying where the water table is likely to be at shallow depth.
- 3.30 Groundwater flooding can interact with other sources of flooding, exacerbating their risk by reducing the infiltration of flood water to ground. The primary mechanisms for elevated groundwater at the site are associated with periods of above average rainfall in permeable superficial deposits and hydraulic continuity of these deposits with high river water levels.
- 3.31 The British Geology Society (BGS) 1:50k geology map¹⁴ in Figure 6 indicates that the site has Alluvium superficial deposits (clay, silt, sand and gravel) over a Pennine Lower Coal Measures Formation bedrock (mudstone, siltstone and sandstone).
- 3.32 BGS borehole records¹⁵ shows nearby borehole log SE22SW1070, 500 m east of the site, showing layers of sand and clay to 10.6 m below ground level (bgl) before encountering several layers of mudstone and sandstone to 30 m bgl. Water was struck at three depths: 6.00 m MGL, 14.00 m BGL and 22.50 m bgl and resting water level was 4.8 m bgl.

¹⁴ Available at: <https://bgs.ac.uk/map-viewers/bgs-geology-viewer/> (Accessed 18/06/2026)

¹⁵ Available at: <https://www.bgs.ac.uk/information-hub/borehole-records/> (accessed 18/06/2026)

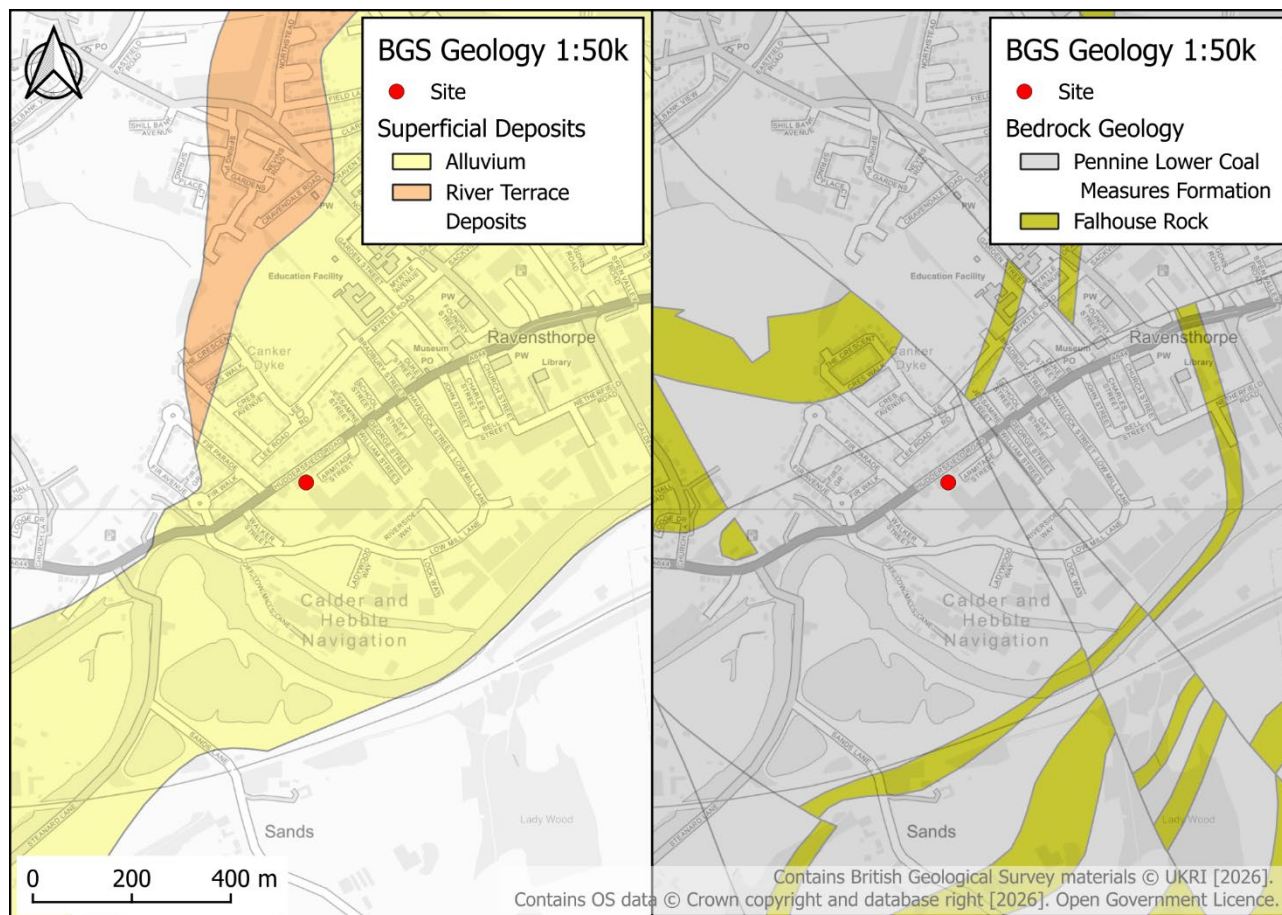


Figure 6: BGS Geology

- 3.33 The Department of Environment Farming and Rural Affairs (DEFRA) Magic Maps¹⁶ show that the bedrock and superficial deposits are classified as a 'Secondary A' aquifer, defined as aquifers comprising permeable layers that can support local water supplies, and may form an important source of base flow to rivers. The site is not located in a groundwater Source Protection Zone (SPZ).
- 3.34 In addition the Groundwater Vulnerability Map shows the area as having 'Medium' to 'Medium-High' vulnerability, the site has a 'Medium' groundwater vulnerability.
- 3.35 The desktop data show the underlying geology could support groundwater.
- 3.36 The site and surrounding area are predominantly hard paved, which reduces the risk of emergence of groundwater at the surface. Any groundwater which does emerge at the surface would follow localised flow paths such as those shown in the surface water flooding maps and would flow overground and discharge to the local sewer system.
- 3.37 The nature of development proposed will ensure that any below ground elements are fully protected from groundwater seepage and ingress of moisture. This means the below ground components should be waterproofed. There should therefore be no direct risk to the infrastructure as a result of changes in local groundwater level.
- 3.38 The risk of flooding from groundwater with the mitigation measures (waterproofing) should result in a low risk of groundwater flooding to the proposed development.

¹⁶Available at: <https://magic.defra.gov.uk> (accessed 18/06/2026)

Risk of Flooding from Sewers

- 3.39 Sewer flooding generally results in localised short-term flooding caused by intense rainfall events overloading the capacity of sewers. Flooding from sewers and highways is linked to the risk of flooding from surface water in urban areas, with the exact source of flooding often indistinguishable.
- 3.40 The Yorkshire Water asset plans were requested (see appendix). The site is shown to be within the proximity an 1810 mm and 600 mm combined sewers within Huddersfield Road.
- 3.41 According to the Kirklees LFRMS, there are some known sewer related flooding issues within the Kirklees catchment. However, overall sewer performance is satisfactory. There are no recorded incidents of sewer flooding within the area surrounding the site.
- 3.42 In the event of sewer flooding in the local area, any sewer flow surcharge would likely enter the local drainage system or be retained in the roadways and drain away from the site. The risk of flooding from sewers as a separate source from surface water flooding is therefore low.
- 3.43 The proposed development is considered to be at low risk of surface water and sewer flooding.

Risk of Flooding from Artificial Waterbodies

- 3.44 The GOV.UK 'Risk of Flooding from Reservoirs' map (see Figure 7) shows that the development is at risk of flooding from reservoirs. This includes when there is high rainfall event and local watercourses are susceptible to out of bank flooding ('wet day').
- 3.45 The EA are the enforcement authority for the Reservoirs Act 1975 in England, they ensure that reservoirs are inspected regularly, and that all essential safety work is carried out. All reservoirs must be inspected and supervised by reservoir panel engineers. There has been no loss of life in the UK from reservoir flooding since 1925.
- 3.46 There are no other sources of artificial flooding that would constitute a source of flood risk to the site.
- 3.47 The risk of flooding from artificial waterbodies is therefore considered to be low.

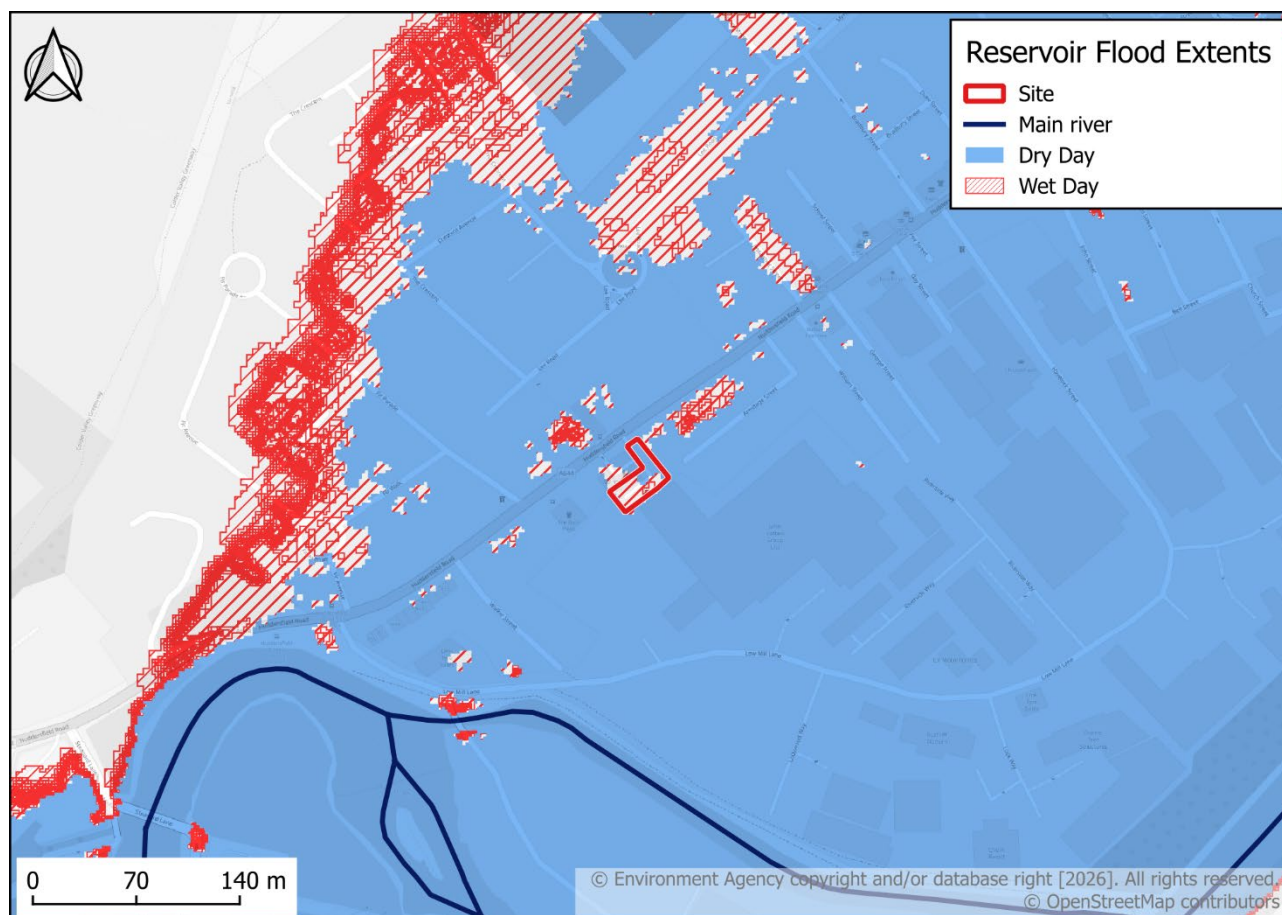


Figure 7: Reservoir Flooding

4 **Conclusions**

- 4.1 This technical note has assessed the risk of flooding from all sources.
- 4.2 The site is shown to be in in Flood Zone 2 of the River Calder (fluvial) and reservoir flooding
- 4.3 Using the 0.1% AEP fluvial simulation as a surrogate for the 1% AEP plus 23% climate change design event, the site is at risk of fluvial flooding. The flood water depth is between 0-550 mm, and the maximum flood water level is 43.28 m AOD.
- 4.4 The proposed development will implement flood mitigation measures such as waterproofing of the proposals, where possible and appropriate.
- 4.5 The proposed development and site should implement a flood management plan as part of the works to protect the proposed infrastructure and ensure staff are able to safely shut down the site before evacuating themselves.
- 4.6 The proposed development is not at risk of flooding from any other source.
- 4.7 We believe that the information contained in this report in relation to flood risk provides sufficient information to demonstrate that the development proposals comply with the requirements of Kirklees Council and the NPPF.

Appendix

- Location Plan (14313-387-LP A) – MBH Design Studio Limited
- Existing Site Plan (14313-387-20 A) – MBH Design Studio Limited
- Proposed Site Plan (14313-387-21 A) – MBH Design Studio Limited
- Flood risk assessment data (E53R5TWP125U) – Environment Agency
- Yorkshire Water Asset Plans



DRAWING NOTES

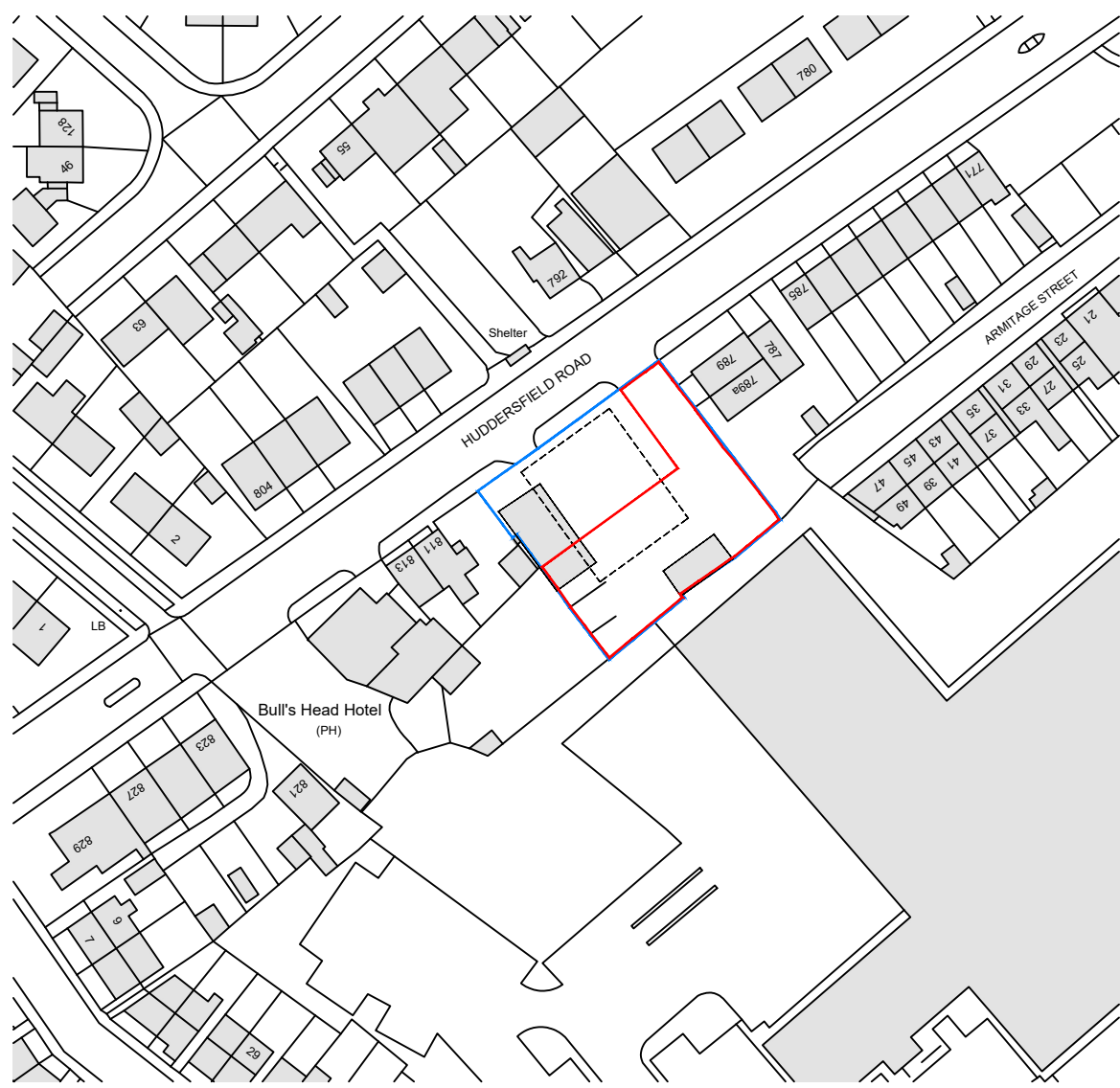
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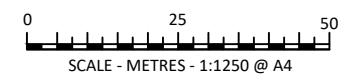
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KEY PLAN:

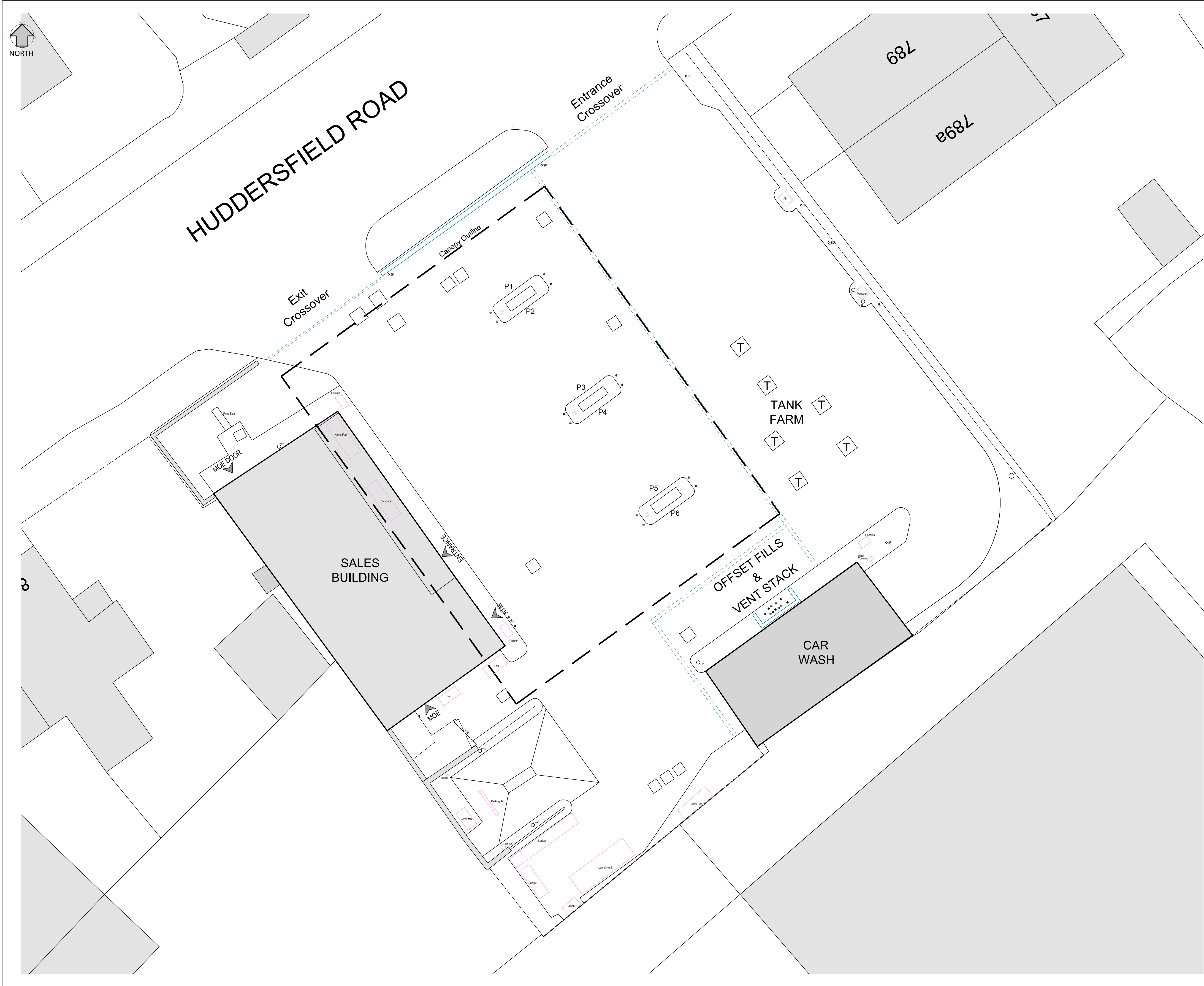
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AREA - 13605QM - 0.1360 HECTARES
-  **APPLICATION SITE BOUNDARY LINE**
AREA - 8205QM - 0.0820 HECTARES



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A	20.05.2026	POSTCODE AMENDED	KL/RB/RB
REV	DATE	DESCRIPTION	DRAWN/CHECKED
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CLIENT			
			
PROJECT			
FS387 - RAVENSTHORPE SERVICE STATION HUDDERSFIELD ROAD DEWSBURY, WEST YORKSHIRE, WF13 3LR			
DRAWING TITLE			
LOCATION PLAN			
DRAWN BY	DATE	SCALE	PAPER SIZE
HP	15.05.2026	1:1250	A4
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KL/RB	14313-387-LP	A	



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This drawing is an initial feasibility scheme and is subject to technical review and internal approvals. DNO application process may affect feasibility, provide additional information and require further review of scheme. Feasibility may be affected by other factors as the scheme progresses to working drawing stage and may also be compromised by unforeseen elements encountered on site during installation of works

Scheme Based on OS Map Dated 19.09.2022



A	20.05.2026	POSTCODE AMENDED	KL/RRB/RRB
REV	DATE	DESCRIPTION	DRAWN/CHECKED
REVISION NOTES			

PLANNING

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CLIENT

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motor fuel group

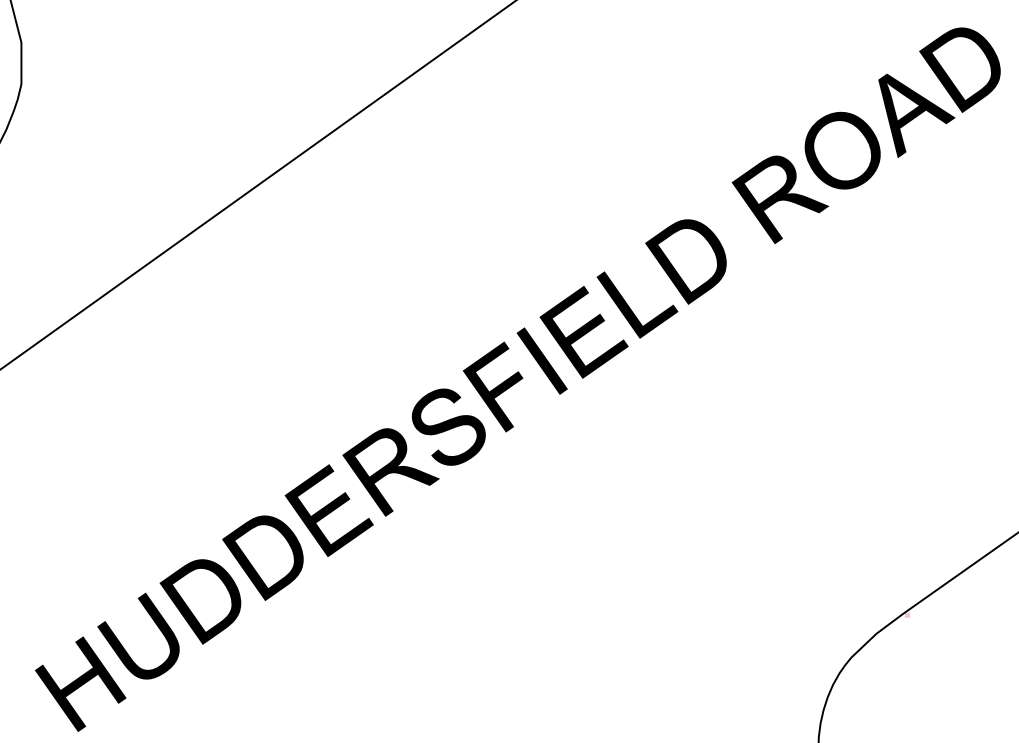
PROJECT

FS387 - RAVENSTHORPE SERVICE STATION
HUDDERSFIELD ROAD
DEWSBURY, WEST YORKSHIRE,
WF13 3LR

DRAWING TITLE

EXISTING SITE PLAN

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HP	15.05.2026	1:100	A1
CHECKED BY	DRAWING NUMBER	REV.	
KL/RB	14313-387-20	A	



Entrance
Crossover

— EXISTING LOCKERS AND GAS CAGE TO BE RELOCATED AS SHOWN.

Exit
Crossover

SALES
BUILDING

TANK
FARM



Diagram illustrating a Vent Stack configuration with Offset Fills and a Vent Stack. The diagram shows a vertical pipe with a vent stack at the top. The vent stack is labeled "VENT STACK" and "OFFSET FILLS". The vent stack is shown with a series of offset fills, indicated by dashed lines and arrows.

CAR
WASH

PROPOSED BIN STORE.—

NEW PROPOSED PLANT ROOM —

EXISTING BRICK WALL TO BE —
DEMOLISHED.

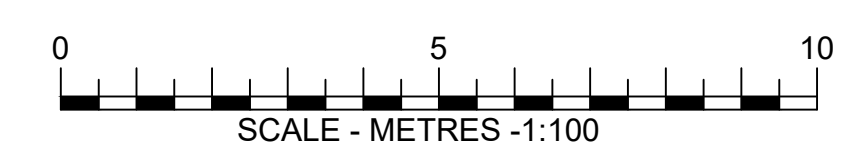
PROPOSED FLOODLIGHT. —

EXISTING JET WASH TO —
BE REMOVED.

2NO. PROPOSED JET WASHES. –
1NO. CLOSED AND 1NO. OPEN

Scheme Based on OS Map Dated 19.09.2022

	EXISTING KERB
	PROPOSED KERB
	PROPOSED DROPPED KERB
	DEMOLISHED
	EXISTING LINE WORK
	PROPOSED LINE WORKS
	PROPOSED EV BOLLARD - RAL 5015
	EXISTING FLOOD LIGHT
	PROPOSED FLOOD LIGHT
	EXISTING FENCE LINE
	PROPOSED FENCE LINE



PLANNING



PROJECT
FS387 - RAVENSTHORPE SERVICE STATION
HUDDERSFIELD ROAD
DEWSBURY, WEST YORKSHIRE,
WF13 3LR

DRAWING TITLE
PROPOSED SITE PLAN

DRAWN BY HP	DATE 15.05.2026	SCALE 1:100	PAPER SIZE A1
CHECKED BY KL/RB	DRAWING NUMBER 14313-387-21	REV. A	

The Flood Map for Planning EIR2026/26992: E53R5TWP125U

The Flood Map for Planning (Rivers and Sea) can be viewed and downloaded as a PDF file on GOV.UK by following this link: <https://flood-map-for-planning.service.gov.uk> or downloaded in GIS format under an open data licence from the following address: <https://environment.data.gov.uk/>

Please type Flood Map for Planning in the search box.

What is the Flood Map for Planning?

The Flood Map for Planning provides information on flooding from rivers and the sea for England and Wales. The Flood Map also has information on flood defences and the areas benefiting from those flood defences.

The Flood Map for Planning shows the following:

1. Flood Zone 3 (dark blue area on the enclosed map): natural flood plain area that could be affected by flooding from rivers and/or the sea – not taking into account the presence of any flood defences
 - For flooding from rivers the map indicates the extent of a flood with a 1% (1 in 100) chance of happening each year;
 - For flooding from the sea the map shows the extent of a flood with a 0.5% (1 in 200) chance of happening each year.
2. Flood Zone 2 (light blue area): natural flood plain area that could be affected by flooding from rivers and/or the sea – not taking into account the presence of any flood defences. Flood Zone 2:
 - indicates the extent of a flood with a 0.1% (1 in 1000) chance of happening each year.
 - and/or indicates the greatest recorded historic flood, whichever is greater.
3. Flood defences built in the last five years to protect against river floods with a 1% (1 in 100) chance of happening each year, together with some natural or constructed entities which retain, store or channel water and which may protect against smaller floods.
4. Areas benefiting from flood defences - areas that benefit from the flood defences shown, in the event of a river flood with a 1% (1 in 100) chance of happening each year, or a flood from the sea with a 0.5% (1 in 200) chance of happening each year. If the defences were not there, these areas would flood.

Flood History

See the attached map showing the flood history for this site. The extent of flooding, and/or flood level information is only shown for those watercourses surveyed after the flood. Other flooding may have occurred which is not shown. This is the best information currently available. Please note that for this reason, we are unable to confirm if flooding has occurred at a property scale. The Flood History Map PDF we have provided shows the area of land that has flooded rather than any individual property.

Please refer to the attached table detailing the causes of those past floods.

In the attached list, there may be outlines which have not been included; these have a Flood Map or Historical Flood Map status of “Considered and Rejected”. This could be for various reasons, including but not limited to the outline consisting of flooding from surface water, overland flow or sewage. It could also be a result of the data being of very poor quality, or in some cases, where changes in the area make a historical flood outline no longer representative of the flood risk, e.g. ground raising or flow path changes.

Water causing flooding can come from different places, for example from rivers or the sea; surface water (i.e. rainwater flowing over or accumulating on the ground before it is able to enter rivers or the drainage system); overflowing or backing up of sewers or drainage systems which have been overwhelmed or from groundwater rising from underground aquifers.

Please note that this record doesn't include all the flooding that may have occurred including and since 1st November 2023. Given the process of recording, verifying and updating our record from major floods is extensive and may take a considerable amount of time.

Assets

Asset Location Map

Please find attached asset map(s) showing the location of all (Agency and non-Agency maintained) flood defences.

Description of Works

See attached table with description of the defences shown on the above drawing, including condition ratings, upstream and downstream crest levels, where available.

Risk of Flooding – Environment Agency Defences

The risk of flooding in this area is now reduced by the presence of flood defences that we maintain, but there still is a residual risk of flooding if these were to breach or be overtopped by a flood greater than that for which they were designed.

Risk of Flooding – Privately Maintained Defences

You will see that the Environment Agency does not maintain any of those defences. However, we undertake regular risk based visual inspections. We do not hold design levels and have no height information on these defences.

Asset Condition Ratings

The performance of a flood defence asset is recorded as the condition of the asset. Our asset inspectors subjectively assess the conditions of assets (during visual inspection site visits) with reference to a national standard template. Each asset is given a rating between one and five with one being very good condition and five being very poor. A condition rating of 3, or 'fair' is the minimal acceptable standard for a critical asset, such as a defence wall that protects properties. We are striving to improve all assets below 'fair' to an acceptable standard.

Asset inspections are done on average every six months, although some critical assets are assessed on a more regular basis. It is possible that adjacent assets are inspected on different dates, which may result in two assets of a similar state of repair having different condition ratings.

Condition ratings of assets may also be affected by the time of year the surveys are conducted, as vegetation may obscure the asset in the summer months, or accessibility may be an issue during winter months. These factors would not usually affect the recorded condition rating of an asset unless the asset is on a borderline between two ratings.

Asset Standard of Protection

Please note that the provided Design Standard of Protection is an estimate and should not be relied on. Please note that where available the defended flood extents provide more reliable information relating to the protection offered by the defence (i.e. at which return period the water levels are likely to overtop the defence). If available and required, the defended flood extents can be provided on request.

Modelling

Please note that whilst the information provided is our best available data, we do not guarantee that is sufficient for land use planning or other such purposes. It is the applicant's responsibility to assess the suitability of the provided model/data for their purposes.

Climate Change

Updated guidance on how climate change could affect flood risk to new development - '[Flood risk assessments: climate change allowances](#)' was published on gov.uk on 19 February 2016. You should confirm the flood risk vulnerability classification and lifetime of your proposed development in line with NPPF and apply the appropriate climate change allowances.

Bespoke Flood Risk Assessment (FRA) advice:

If the pre-application advice is required with regards the preparation of a site-specific Flood Risk Assessment, this can be requested via the Yorkshire Sustainable Places team (email: sp-yorkshire@environment-agency.gov.uk). Charges may apply for any advice that is provided, this currently stands at £100 per hour per person. The [.gov.uk](#) pages provide a good starting point on what to include within a site-specific Flood Risk Assessment and can be accessed via <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>. A site-specific Flood Risk Assessment will need to consider flood risks from all sources, including those associated with defence failure (e.g. breach) and accounting for the predicted impacts as a result of climate change. Please contact the Sustainable Places team if you require advice on how to include these within a Flood Risk Assessment.

Other

Surface Water Map

Lead Local Flood Authorities (LLFA) are responsible for managing local flood risk from surface water flooding and groundwater flooding. You should check with the LLFA as they may have more up to date information regarding this type of flooding.

The Risk of Flooding from Surface Water Flood Map can be viewed and downloaded as a PDF file on GOV.UK by following this link: <https://flood-warning-information.service.gov.uk/long-term-flood-risk>

Surface Water Drainage

The Lead Local Flood Authority is the statutory consultee for planning matters relating to surface water drainage, therefore it is recommended they should be consulted separately regarding this.

Surface water discharge from new development should ideally 'mimic' the pre-development situation using a sustainable drainage system so that the flow and volume of water in watercourses is not increased.

A permit may be required, under the Environmental Permitting Regulations 2016 from the Environment Agency for any proposed works or structures in, under, over or within eight metres of a 'main river' (e.g., a new outfall). A permit is separate to and in addition

to any planning permission granted. Further details and guidance are available on the GOV.UK website:

<https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>

Risk of Flooding from Reservoirs Map

Outlines and simplified depth and velocity maps can be viewed on our website:

<https://flood-warning-information.service.gov.uk/long-term-flood-risk/#x=438988&y=406600&scale=2>

Please, zoom into the location of interest, and then click on the inundated location for details. As a result a list of reservoirs will be provided with supporting information and a links to other data, such as estimated depths and speed of flooding, at the bottom of the result page.

A map of showing the outlines can also be provided on request.

Flood Warning

The site may be covered by a Flood Warning. To register to receive this service, you can call Floodline 24 hours a day on 0845 988 1188.

LIDAR Data

Please note that our LiDAR data is now available free of charge (Open Data) from <https://environment.data.gov.uk/survey> (once zoomed to the relevant location the available LiDAR products will be listed below the map).

Two LIDAR products are available:

1. Tiled LIDAR data - The full tiled dataset consists of historic LIDAR data which has been gathered since 1998. For some areas we have carried out repeat surveys and data is available in a range of resolutions.
2. Composite LIDAR data - The composite dataset is derived from a combination of our full tiled dataset which has been merged and re-sampled to give the best possible spatial coverage.

Light Detection and Ranging (LIDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground. This technique results in the production of an accurate, cost-effective terrain model suitable for assessing flood risk and other environmental applications.

The Environment Agency owns two LIDAR systems, which are installed in a survey aircraft along with its other operational remote sensing instruments.

The aircraft is positioned and navigated using Global Positioning System (GPS) corrected to known ground reference points. The aircraft typically flies at a height of about 800 metres above ground level and a scanning mirror allows a swath width of about 600 metres to be surveyed during a flight.

The Rights & Responsibilities of a Riverside Owner

The owner of property adjacent to a watercourse is usually deemed to be the riparian owner and, as such, has both riparian rights and responsibilities regarding the watercourse within their ownership.

For more information on Rights and Responsibilities of a riverside owner, you can visit our website at:

[Your Watercourse: Rights and Roles,](#)

Ordnance Survey Data

Under the terms of our licence agreement with the Ordnance Survey, we are unable to supply the OS data. Under this agreement we can only supply OS data to consultants/contractors carrying out work on our behalf.

Did you know?

You can now request flood risk assessment data (also known as a Product 4) online at <https://flood-map-for-planning.service.gov.uk/>

Flood risk assessment data



Location of site: 421904 / 420052 (shown as easting and northing coordinates)

Document created on: 4 June 2026

This information was previously known as a product 4.

Customer reference number: E53R5TWP125U

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- past floods
- flood defence locations and attributes
- information to help you assess if there is a reduced flood risk from rivers and the sea because of defences
- modelled data
- modelled climate change data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Surface water and other sources of flooding

When using the surface water map on the [check your long term flood risk service](#) the following considerations apply:

- surface water extents are suitable for use in planning
- surface water climate change scenarios may help to inform risk assessments, but the available data fall short of what is required to assess planned development
- surface water depth information should not be used for planning purposes

To find out about other factors that might affect the flood risk of this location, you should also check:

- [reservoir flood risk](#)
- groundwater flood risk - you could use the [British Geological Survey groundwater flooding data](#), [groundwater: current status and flood risk](#) and the guide on [mining and groundwater constraints for development](#) - further information may be available from the lead local flood authority (LLFA)
- your local planning authority's SFRA, which includes future flood risk

Your Lead Local Flood Authority is Kirklees District (B).

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: 2011 River Calder - Calder

Scenario(s): Defences removed fluvial, defences removed climate change fluvial

Date: 31 March 2011

Model name: 2015 Calder and Canals - downstream of Sowerby Bridge

Scenario(s): Defended fluvial, defences removed fluvial, defended climate change fluvial

Date: 31 March 2014

These models contain the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 2.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change



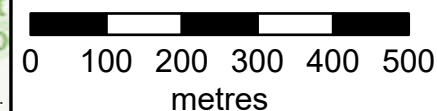
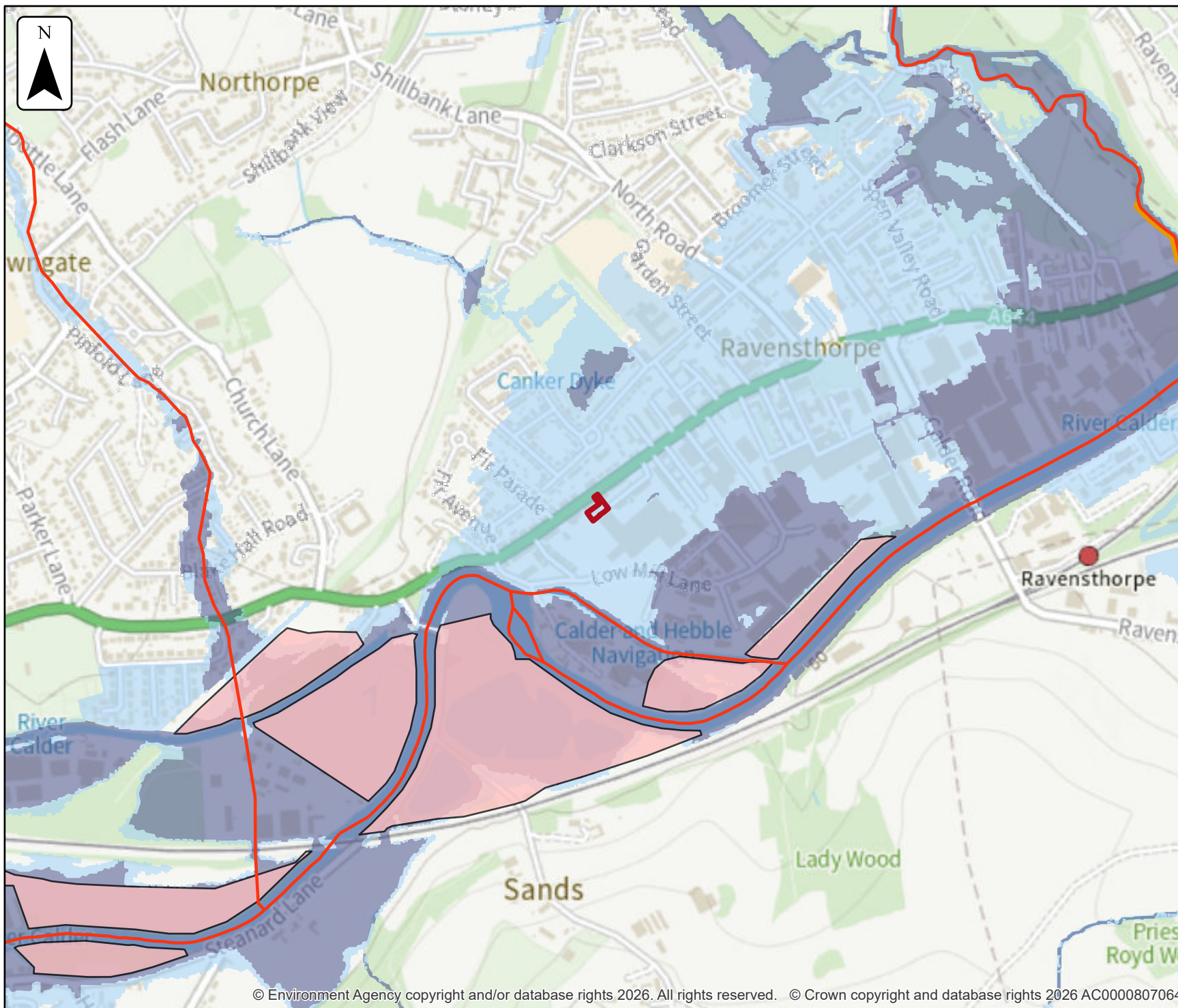
Flood map for planning

Location (easting/northing)
421904/420052

Scale
1:10,000

Created
4 Jun 2026

-  Selected area
-  Main river
-  Flood defence
-  Water storage area
-  Flood Zone 3
-  Flood Zone 2



Past floods

Past flood events included in this document

The recorded flood outlines included in this document are for areas of land local to your site location that have been flooded by any of these sources:

- ephemeral water
- main rivers
- ordinary watercourses
- the sea
- unknown

Data limitations

The outlines do not include flooding from:

- drainage where rainfall has led to surface water ponding or overland runoff
- artificial, water-bearing sewer, water supply and wastewater treatment pipelines

Changes to flood defences

The defences (also known as assets) that were in place may also have changed. For example, assets may have been built more recently than the last recorded flood outline.

What the recorded flood outlines dataset is

The recorded flood outlines are a geographical information system (GIS) data layer that show our verified records of areas that have flooded in the past from:

- rivers
- the sea
- groundwater
- surface water

[Download the complete recorded flood outlines dataset](#), which includes data quality flags for outlines recorded after April 2020. This indicates the confidence we have in an outline.

Get flood information from other organisations

Contact Kirklees District (B) Lead Local Flood Authority (LLFA) and your drainage board to get information about past flooding caused by surface water or drainage systems.



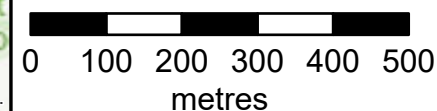
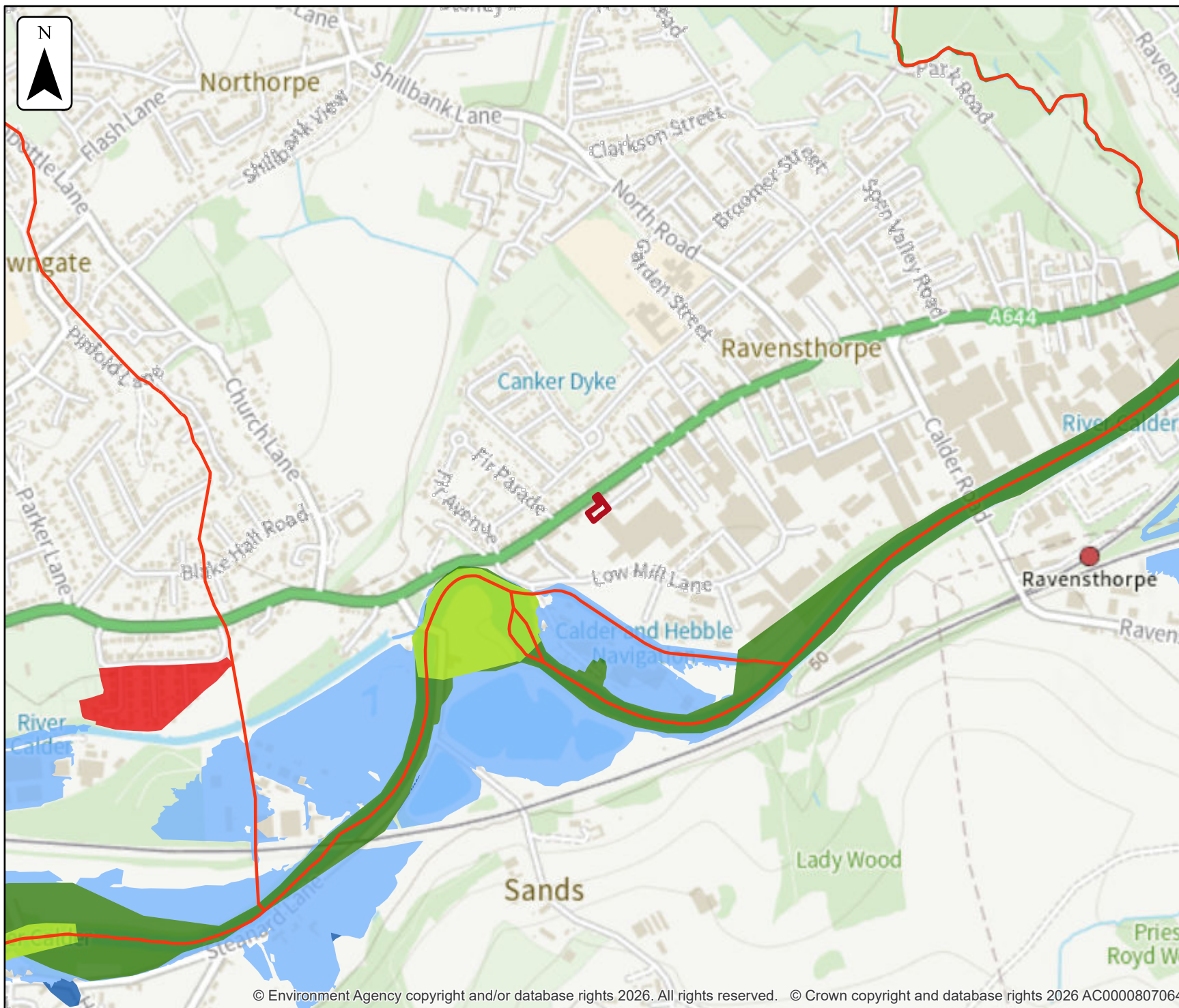
Past floods

Location (easting/northing)
421904/420052

Scale
1:10,000

Created
4 Jun 2026

-  Selected area
-  Main river
- Date of flood event
 -  February, 2022
 -  February, 2020
 -  March, 2019
 -  December, 2015
 -  February, 2002
 -  November, 2000



Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
20 February 2022	28 March 2022	main river	channel capacity exceeded (no raised defences)	No
8 February 2020	19 March 2020	main river	channel capacity exceeded (no raised defences)	No
14 March 2019	17 March 2019	main river	unknown	No
25 December 2015	29 December 2015	main river	channel capacity exceeded (no raised defences)	No
10 February 2002	13 February 2002	main river	channel capacity exceeded (no raised defences)	No
6 November 2000	4 December 2000	main river	unknown	No

Flood defences and attributes

The flood defences map shows the location of the flood defences present.

The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is in mAOD which is the metres above the mean sea level at Newlyn, Cornwall.

It's important to remember that flood defence data may not be updated on a regular basis. The information here is based on the best available data.

Use this information:

- to help you assess if there is a reduced flood risk for this location because of defences
- with any information in the modelled data section to find out the impact of defences on flood risk



Flood defences

Location (easting/northing)
421904/420052

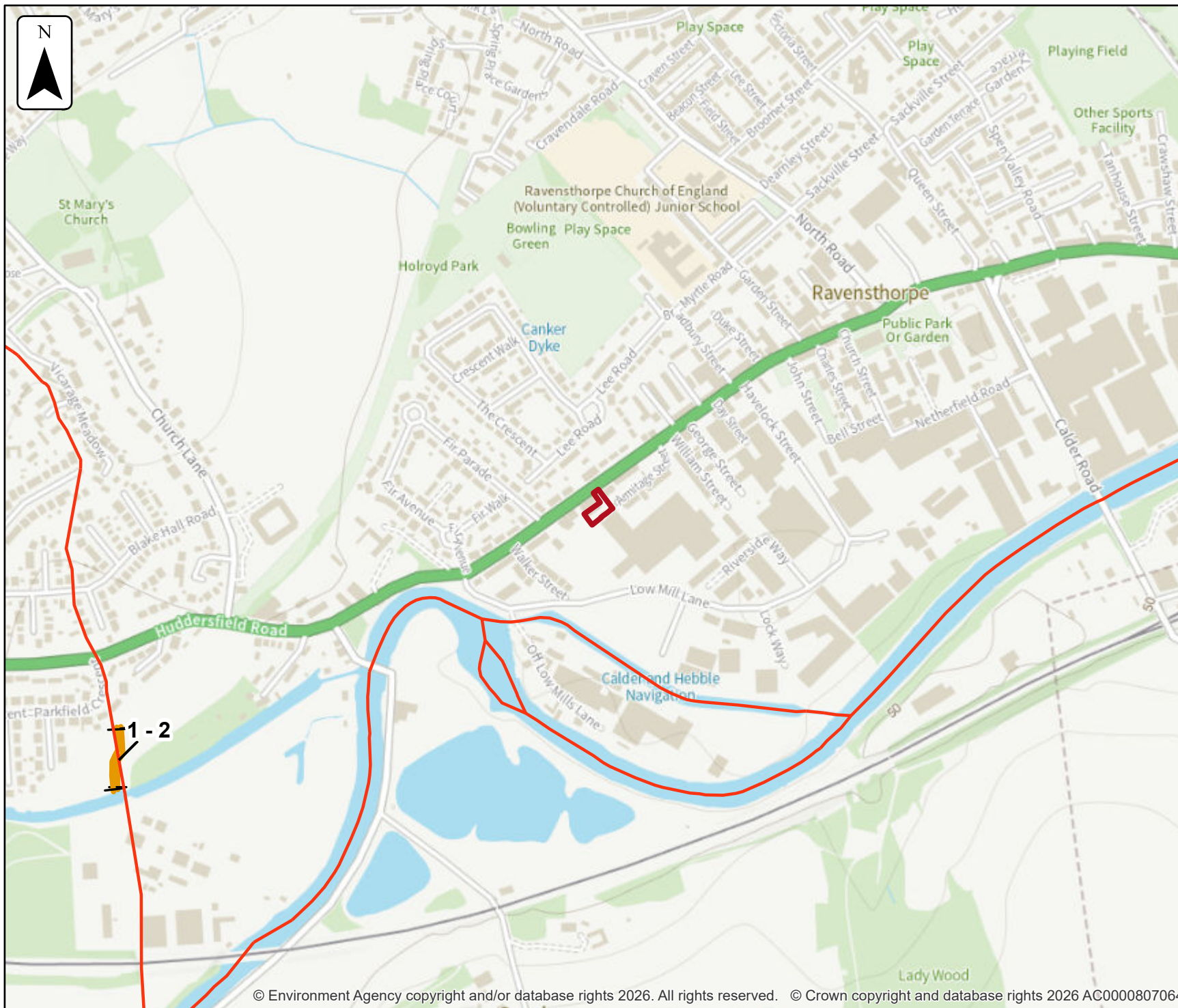
Scale

1:7,500

Created

4 Jun 2026

-  Selected area
-  Main river
-  Flood defence



Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	466889	Engineered High Ground					
2	466888	Engineered High Ground					

Any blank cells show where a particular value has not been recorded for an asset.

Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods

Climate change

The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

The Environment Agency will incorporate the new allowances into future modelling studies. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

Modelled scenarios

The following scenarios are included:

- Defended modelled fluvial: risk of flooding from rivers where there are flood defences
- Defences removed modelled fluvial: risk of flooding from rivers where flood defences have been removed
- Defended climate change modelled fluvial: risk of flooding from rivers where there are flood defences, including estimated impact of climate change
- Defences removed climate change modelled fluvial: risk of flooding from rivers where flood defences have been removed, including estimated impact of climate change



Defences removed climate change modelled fluvial extent

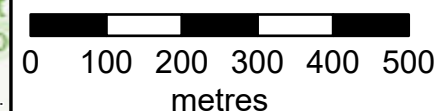
Location (easting/northing)
421904/420052

Scale Created
1:10,000 4 Jun 2026

Model name
**2011 River Calder -
Calder**

-  Selected area
-  Main river
- Modelled flood extent
 -  1% AEP (+20%)

Flood extents may not be
visible where they overlap
other return periods





Defences removed modelled fluvial extent

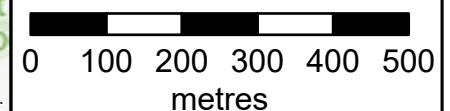
Location (easting/northing)
421904/420052

Scale Created
1:10,000 4 Jun 2026

Model name
**2011 River Calder -
Calder**

-  Selected area
-  Main river
- Modelled flood extent
 -  2% AEP
 -  1.33% AEP
 -  1% AEP
 -  0.5% AEP
 -  0.1% AEP

Flood extents may not be
visible where they overlap
other return periods





Defences removed modelled fluvial extent

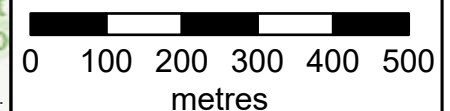
Location (easting/northing)
421904/420052

Scale Created
1:10,000 4 Jun 2026

Model name
**2015 Calder and
Canals - downstream**

-  Selected area
-  Main river
- Modelled flood extent
 -  1% AEP
 -  0.1% AEP

Flood extents may not be
visible where they overlap
other return periods





Defended climate change modelled fluvial extent

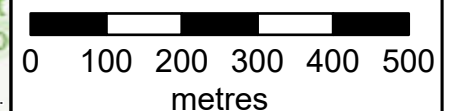
Location (easting/northing)
421904/420052

Scale Created
1:10,000 4 Jun 2026

Model name
**2015 Calder and
Canals - downstream**

-  Selected area
-  Main river
- Modelled flood extent
 -  1% AEP (+20%)

Flood extents may not be
visible where they overlap
other return periods





Defended modelled fluvial extent

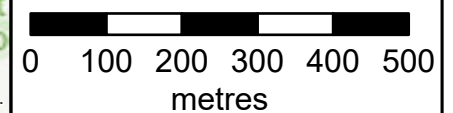
Location (easting/northing)
421904/420052

Scale Created
1:10,000 4 Jun 2026

Model name
2015 Calder and Canals - downstream

-  Selected area
-  Main river
- Modelled flood extent**
 -  2% AEP
 -  1.33% AEP
 -  1% AEP
 -  0.5% AEP
 -  0.1% AEP

Flood extents may not be visible where they overlap other return periods





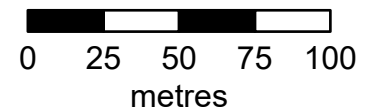
Defended modelled fluvial node locations

Location (easting/northing)
421904/420052

Scale Created
1:2,500 4 Jun 2026

Model name
**2015 Calder and
Canals - downstream**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
1	1129722	421672	419920	41.47	41.74	41.80	42.12	42.19	42.34	42.45	42.50	42.70	43.62
2	1130235	421785	419890	40.89	41.24	41.28	41.45	41.48	41.58	41.66	42.06	41.89	43.39
3	1129749	421860	419884	40.89	41.24	41.28	41.45	41.48	41.57	41.66	42.06	41.88	43.28
4	1130232	421920	419842	40.89	41.24	41.28	41.44	41.48	41.57	41.65	42.06	41.88	43.23

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge 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.

Defended

Label	Modelled location ID	Easting	Northing	50% AEP	20% AEP	10% AEP	4% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	1129722	421672	419920	226.81	284.28	297.23	336.68	339.55	347.69	354.08	358.96	363.38	535.28
2	1130235	421785	419890	1.07	1.84	2.18	4.48	5.06	6.48	7.64	8.05	10.60	26.44
3	1129749	421860	419884	1.02	1.84	2.18	4.48	5.06	6.48	7.63	8.05	10.98	55.44
4	1130232	421920	419842	0.95	1.84	2.17	4.47	5.06	6.48	7.63	8.05	11.49	73.28

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge 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.



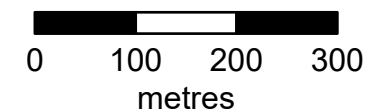
Defences removed modelled fluvial node locations

Location (easting/northing)
421904/420052

Scale Created
1:7,500 4 Jun 2026

Model name
**2011 River Calder -
Calder**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level
1	169661	421380	419393	42.65	42.95	43.16	43.29	43.38	43.61	44.82
2	267089	421458	419454	42.58	42.89	43.12	43.24	43.34	43.57	44.72
3	267700	421558	419620	41.91	42.19	42.37	42.49	42.58	42.82	44.06
4	135367	421574	419816	41.68	41.92	42.09	42.19	42.28	42.50	43.64
5	183441	421673	419920	41.41	41.61	41.76	41.84	41.91	42.09	42.92
6	8358	421740	419854	41.55	41.80	41.97	42.08	42.16	42.39	43.50
7	16095	421788	419772	41.19	41.45	41.64	41.75	41.84	42.09	43.36
8	262111	421927	419674	41.11	41.40	41.59	41.70	41.79	42.03	43.22
9	340862	422281	419768	40.62	40.87	41.04	41.13	41.21	41.41	42.25
10	135040	422627	420059	40.17	40.42	40.58	40.68	40.76	41.0	42.31

Data in this table comes from the 2011 River Calder - Calder 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.

Defences removed

Label	Modelled location ID	Easting	Northing	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	169661	421380	419393	331.38	376.22	410.11	432.70	450.16	500.22	785.18
2	267089	421458	419454	330.70	374.02	406.13	427.42	443.85	490.58	773.76
3	267700	421558	419620	330.58	373.82	405.83	427.07	443.54	490.21	772.79
4	135367	421574	419816	330.50	373.65	405.41	426.36	442.59	488.19	767.30
5	183441	421673	419920	330.90	375.57	409.38	431.84	449.41	499.22	803.73
6	8358	421740	419854	330.75	375.46	409.21	431.56	449.07	498.59	799.79
7	16095	421788	419772	330.59	375.31	409.06	431.38	448.89	498.36	798.49
8	262111	421927	419674	330.46	375.19	408.92	431.19	448.71	498.16	811.12
9	340862	422281	419768	329.86	374.30	407.82	429.92	447.35	496.77	811.11
10	135040	422627	420059	330.08	374.87	408.57	430.85	448.34	497.93	806.75

Data in this table comes from the 2011 River Calder - Calder 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.



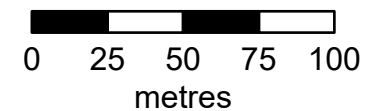
Defences removed modelled fluvial node locations

Location (easting/northing)
421904/420052

Scale Created
1:2,500 4 Jun 2026

Model name
**2015 Calder and
Canals - downstream**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defences removed

Label	Modelled location ID	Easting	Northing	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level
1	1129722	421672	419920	41.50	41.78	42.02	42.14	42.48	42.48	43.65
2	1130235	421785	419890	41.09	41.28	41.41	41.47	41.77	41.79	43.38
3	1129749	421860	419884	41.09	41.28	41.41	41.47	41.77	41.78	43.28
4	1130232	421920	419842	41.09	41.28	41.41	41.47	41.77	41.78	43.23

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge 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.

Defences removed

Label	Modelled location ID	Easting	Northing	10% AEP	4% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	1129722	421672	419920	309.56	318.18	321.63	323.90	349.94	327.19	531.63
2	1130235	421785	419890	0.88	1.95	3.45	4.29	7.92	7.18	26.73
3	1129749	421860	419884	0.84	1.95	3.45	4.30	7.92	8.86	53.29
4	1130232	421920	419842	0.78	1.95	3.45	4.29	7.92	11.80	71.38

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge 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.



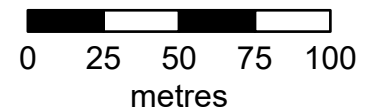
Defended climate change modelled fluvial node locations

Location (easting/northing)
421904/420052

Scale Created
1:2,500 4 Jun 2026

Model name
**2015 Calder and
Canals - downstream**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

Defended climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+20%)	1% AEP (+20%)
				Level	Flow
1	1129722	421672	419920	42.81	367.12
2	1130235	421785	419890	42.0	12.15
3	1129749	421860	419884	41.99	13.51
4	1130232	421920	419842	41.98	15.84

Data in this table comes from the 2015 Calder and Canals - downstream of Sowerby Bridge 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.



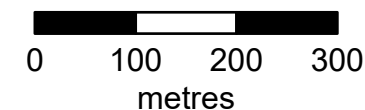
Defences removed climate change modelled fluvial node locations

Location (easting/northing)
421904/420052

Scale Created
1:7,500 4 Jun 2026

Model name
**2011 River Calder -
Calder**

-  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 (+20%)
				Level	Flow
1	169661	421380	419393	43.77	537.11
2	267089	421458	419454	43.72	524.75
3	267700	421558	419620	42.99	524.16
4	135367	421574	419816	42.66	521.23
5	183441	421673	419920	42.21	535.15
6	8358	421740	419854	42.53	534.25
7	16095	421788	419772	42.25	533.82
8	262111	421927	419674	42.19	533.75
9	340862	422281	419768	41.53	532.21
10	135040	422627	420059	41.15	533.08

Data in this table comes from the 2011 River Calder - Calder 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.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

Your Lead Local Flood Authority is Kirklees District (B).

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

Help and advice

Contact the Yorkshire Environment Agency team at neyorkshire@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for

YORKSHIRE WATER PROTECTION OF MAINS AND SERVICES

1. The position of Yorkshire Water Services Ltd (YWS) apparatus shown on the existing mains record drawing(s) indicates the **general** position and nature of our apparatus and the accuracy of this information cannot be guaranteed. Any damage to YWS apparatus as a result of your works may have serious consequences and you will be held responsible for all costs incurred. Prior to commencing major works, the exact location of apparatus must be determined on site, if necessary by excavating trial holes. The actual position of such apparatus and that of service pipes which have not been indicated must be established on site by contacting the Customer Helpline on 0845 124 24 24 for both water and sewerage.
2. The public sewer and water network is lawfully retained in its existing position and the sewerage and water undertaker is entitled to have it remain so without any disturbance. The provisions of section 159 of the Water Industry Act 1991 provides that the undertaker may "inspect, maintain, adjust, repair or alter" the network. Those rights are given to enable the undertaker to perform its statutory duties. Any development of the land or any other action that unacceptably hindered the exercise of those rights would be unlawful. The provisions contained in Section 185 of the Water Industry Act 1991 state that where it is reasonable to do so, a person may require the water supply undertaker to alter or remove a pipe where it is necessary to enable that person to carry out a proposed change of use of the land. The provisions contained in Section 185 also require the person making the request to pay the full cost of carrying out the necessary works.
3. Ground levels over existing YWS apparatus are to be maintained. Sewers in highways will **generally** be laid to give 1200mm of cover from finished ground level working to kerb races, other permanent identification of the limits of the road or to an agreed line and level. Substantial increases or decreases to this 1200mm depth of cover will result in the sewer being re-laid at your expense. Water mains and services will **generally** be laid with a minimum of 750mm depth of cover however some mains and services usually those installed over 50 years ago may have less ground cover.
4. If surface levels are to be decreased / increased significantly the effects on existing water supply apparatus will be carefully considered and if any alterations are necessary, the costs of the alterations will be recharged to you in full. Outlets on fire hydrants must be no more than 300mm below the new levels and all surface boxes must be adjusted as part of the scheme.
5. To enable future repair works to be carried out without hindrance; any pipe, cable, duct, etc. installed parallel to a water main or service pipe should not be installed directly over or within 300mm of a water main or service pipe or 1000mm of a waste water asset. Where a pipe, cable, duct, etc. crosses a main or service it should preferably cross perpendicular or at an angle of no less than 45° and with a minimum clearance of 150mm. These requirements apply to activities within an existing highway and are relevant to the installation of pipes, cables, ducts, etc. up to and including 250mm in diameter (*see illustration below*). Necessary protection measures for installations greater than 250mm in diameter and/or in private land will need to be agreed on an individual basis. Installations within a new development site must comply with the National Joint Utilities Group publication Volume 2: NJUG Guidelines On The Positioning Of Underground Utilities Apparatus For New Development Sites.
6. All excavation works near to YW apparatus should be by hand digging only.
7. Backfilling with a suitable material to a minimum 300mm above YW apparatus is required.
8. Adequate support must be provided where any works pass under YW apparatus.
9. Jointing chambers, lighting columns and other structures must be installed in such a way that future repair or maintenance works to YW apparatus will not be hindered.
10. Apparatus such as; railings, sign posts, etc. must not be placed in such a way that they prevent access to or full operation of controlling valves, hydrants or similar apparatus. YWS surface boxes must not be covered or buried. Any adjustment, alteration or replacement of manhole covers must be agreed on site prior to the commencement of the works with a YWS Inspector who may be contacted via our Call Centre on 0845 124 24 24.
11. Explosives shall not be used within 100 metres of any Yorkshire Water Services apparatus or installations.
12. Vibrating plant should not be used directly over any apparatus. Movement or operation by vehicles or heavy plant is not to be permitted in the immediate vicinity of YWS plant or apparatus unless there has been prior consultation and, if necessary, adequate protection provided without cost to YWS.
13. **Under no circumstances** should thrust boring or similar trenchless techniques commence until the actual position of the Company's mains/services along the proposed route have been confirmed by trial holes.
14. Any alterations to the highway should be notified following the procedures outlined in the New Road and Street Works Act 1991 Code of Practice; Measures Necessary Where Apparatus Is Affected By Major Works (Diversionsary Works).
15. You will be held responsible for any damage or loss to YWS apparatus during and after completion of work, caused by yourselves, your servant or agent. Any damage caused or observed to YWS plant or apparatus should be immediately reported to YWS. Should YW incur any costs as a result of non-compliance with the above, all costs will be rechargeable in full.
16. You should ensure that nothing is done on the site to prejudice the safety or operation of YWS employees, plant or apparatus.
17. In accordance with the New Roads and Street Works Act 1991, Chapter 22, Part 3, Section 80. The location of any identified YW asset "which is not marked, or is wrongly marked, on the records made available" should be communicated back to Yorkshire Water. The location of the apparatus should be identified on copies of the supplied plans which should be returned to Yorkshire Water (Asset Records Team) with photographic supporting evidence where possible.
18. The Government has decided that responsibility for private sewers serving two or more properties and lateral drains (the section of pipe beyond the boundary of a single property, connecting it to the public sewer) will be transferred to the water companies on Oct 1 2011.

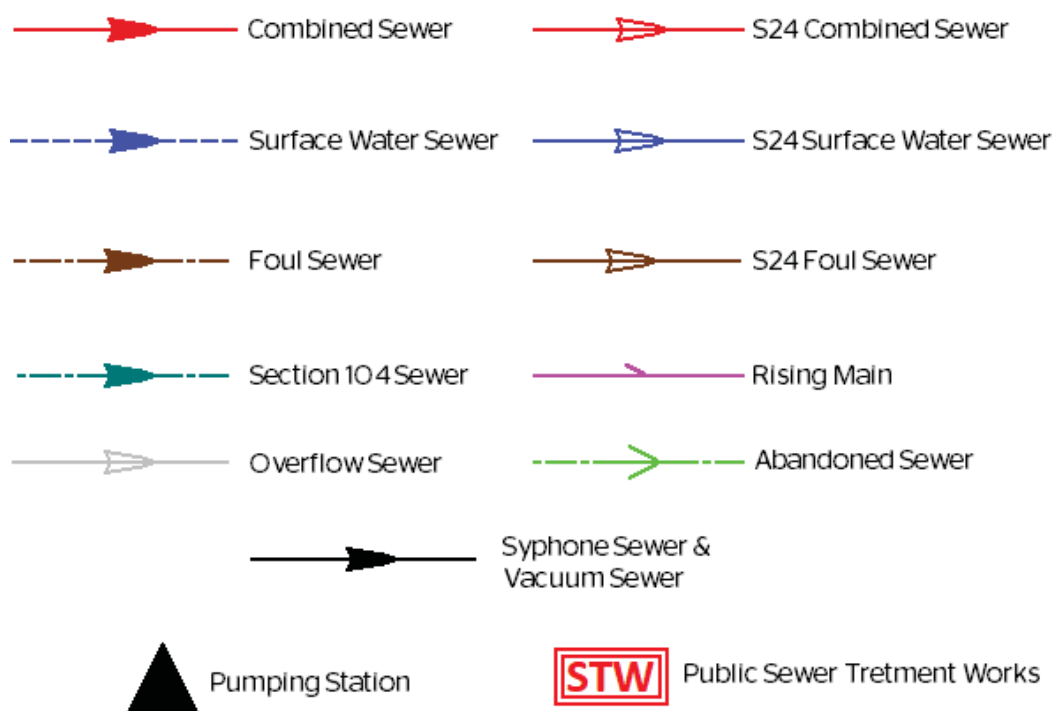
Private pumping stations will also transfer during the period 1 October 2011 – 1 Oct 2016. Records of these assets may not yet be shown on the existing mains record drawing(s). If you encounter any of these assets you must inform Yorkshire Water Services Ltd (YWS).

19. Please note that the information supplied on the enclosed plans is reproduced from Ordnance Survey material with the permission of the Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office, © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence Number 1000019559.
20. This information is for guidance only and the position and depth of any YW apparatus is approximate only. Likewise, the nature and condition of any YW apparatus cannot be guaranteed. YW has no responsibility for recording the locations of privately owned apparatus. As of 1 October 2011, there may be some lateral drains and/or public sewers which are not documented on YW records but may still be present. For the avoidance of doubt, this information is not a substitute for appropriate professional and/or legal advice. YW accepts no responsibility for any inaccuracy or omissions in this information. The actual position of YW apparatus must be determined on site by excavating trial holes by hand. YW requires a minimum of two working days' written notice of the intention to excavate any trial holes before any excavation can be undertaken. If there are any queries in this respect please contact Yorkshire Water on 0845 124 24 24.

Property Identifier

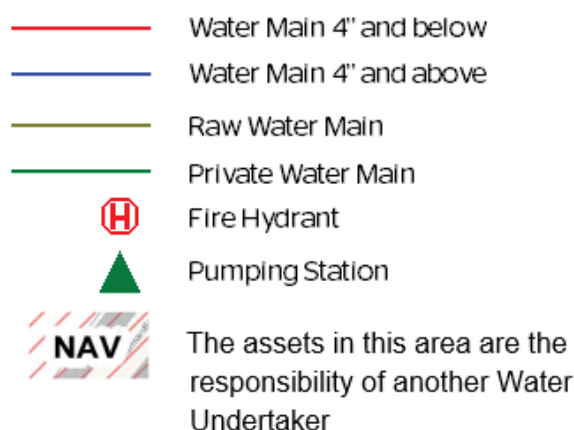


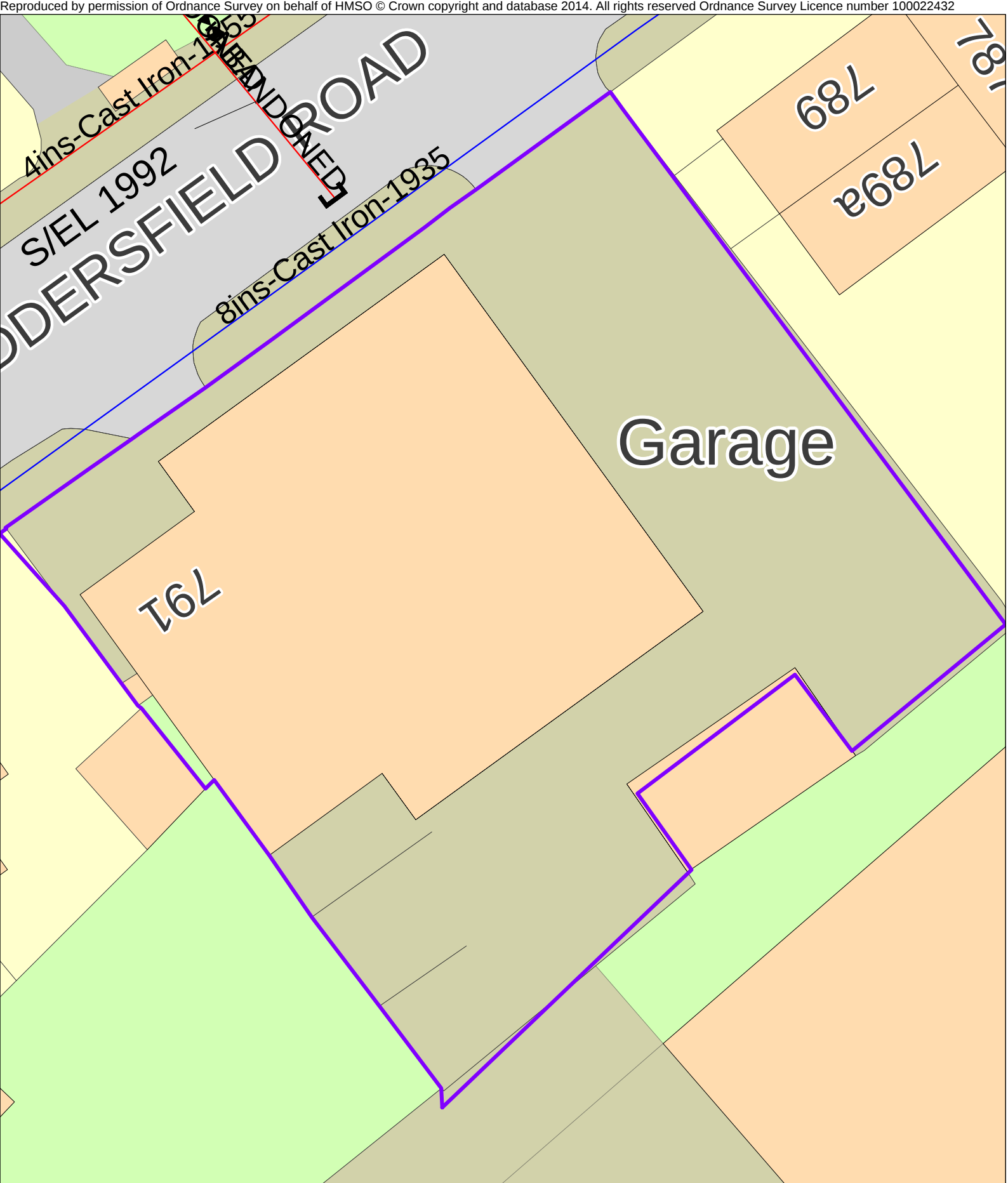
Sewer Legend



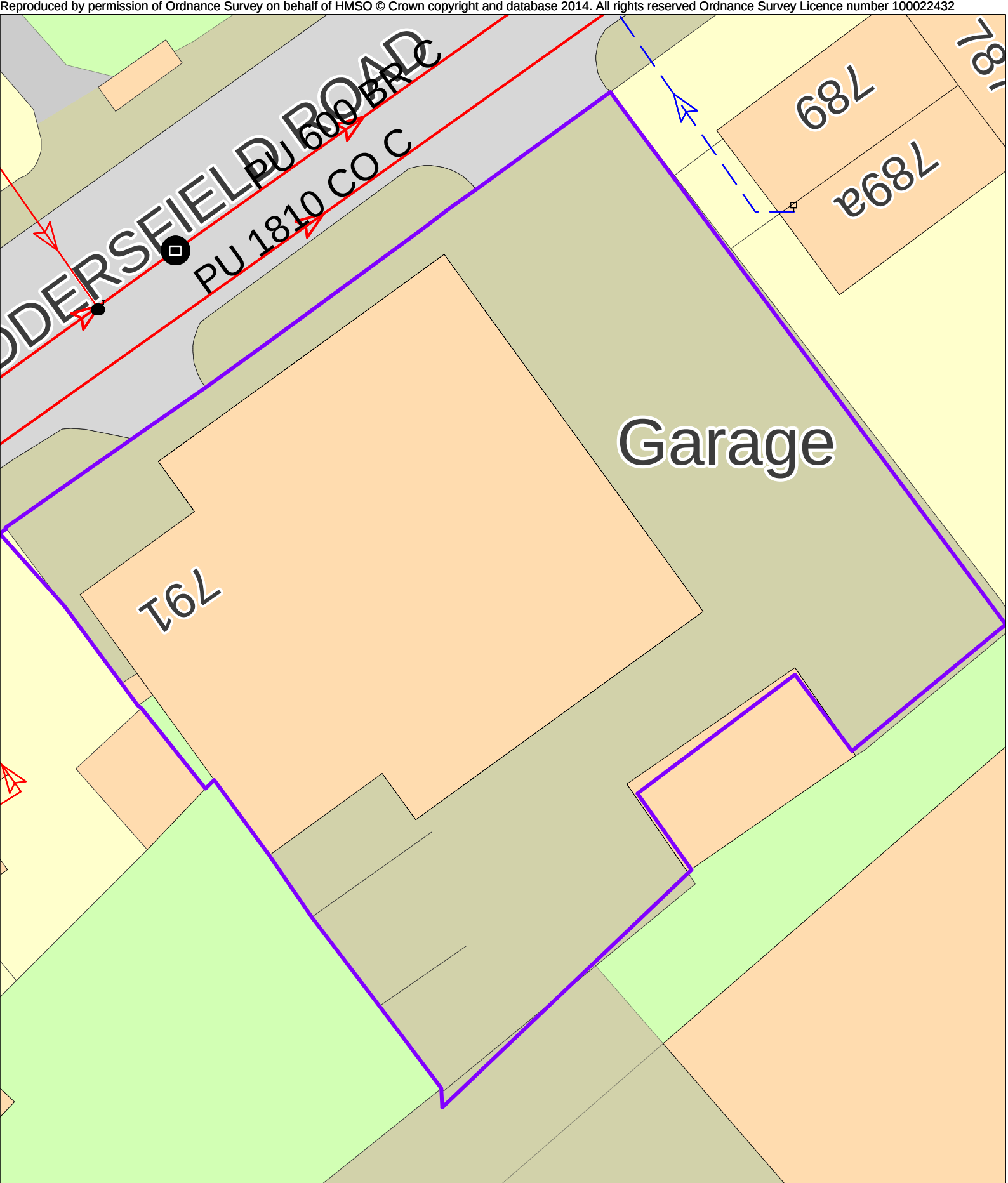
Please note that the direction of flow arrows may not always appear depending on the scale of the map.

Water Legend





Public Clean Water Network 09/02/2023 12:22:41 OS Grid Coordinates: 421872 : 420024 Map Name : SE2120SE svcGISSafeMovePD



Public Waste Water Network 09/02/2023 12:22:42 OS Grid Coordinates: 421872 : 420024 Map Name : SE2120SE svcGISSafeMovePD