

27th October 2022

Ms Clare Williams
[wclare22@yahoo.com]

C/O Bill Schafer
Schafer Architects
56 Belvedere Road
Ashton-in-Makerfield
Lancashire
WN4 8RU

Mosside Cottage, Hewitts Lane, Prescot, Knowsley Flood Risk Assessment

This Flood Risk Assessment has been prepared to support a planning application for the construction of a 90sq.m extension to an existing residential dwelling at Mosside Cottage in Knowsley. The assessment was commissioned by Ms Clare Williams referred to hereafter as 'the client'. The assessment has been completed in accordance with the National Planning Policy Framework (NPPF) and the Planning Practice Guidance (PPG) to review all sources of flood risk both to and from the proposed development.

Site Context

The site (Mosside Cottage) is located off Hewitts Lane in Knowsley, the Ordnance Survey National Grid Reference is E: 343999, N: 397158 and the nearest postcode is L34 8HH (see the Location Plan in **Appendix A**).



Figure 1: Site Location and Features Plan (Betts Hydro, 2022)

Page 1 of 10



Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

The site currently comprises of a single residential dwelling with associated garden and parking space. In terms of the surrounding land-use, the site is mostly surrounded by undeveloped agricultural land. Knowsley Brook is located adjacent to the northern boundary of site and Kirkby substation is located to the west. There are also some residential dwellings located to the north and south, while Hewitts Lane is located adjacent to the eastern boundary, as illustrated in **Figure 1**.

A topographical survey has been undertaken and is included within **Appendix B**. The topographic survey identifies that the existing ground levels onsite range from 42.56mAOD within the south-eastern corner of site down to 42.20mAOD adjacent to the Main River (Knowsley Brook) on the northern boundary, as shown in **Figure 1**. The client has also confirmed that the Finished Floor Level of the existing building is 42.77mAOD.

Initial consultations have been undertaken with the Environment Agency (EA), Knowsley Metropolitan Borough Council (KMBC) and United Utilities (UU) to identify historical records of flooding and to obtain up-to-date flood data (responses are within **Appendix C, D and E** where these have been received). The National Planning Policy Framework (NPPF) advises that KMBC as the Local Planning Authority should consult with the EA who will provide advice and guidance on flood issues at a strategic level and in relation to planning applications.

Development Proposals

This assessment has been prepared to support a planning application for the construction of a 90sq.m extension to an existing residential dwelling at Mossid Cottage in Knowsley. The development proposals are shown below in **Figure 2**.



Figure 2: Proposed Planning Layout Extract (Schafer Associates Chartered Architects, 2022)

Flood Risk Vulnerability Classification And Flood Zone Compatibility

The proposed extension to the existing residential dwelling is classified as 'more vulnerable' in Table 2 (Flood Risk Vulnerability Classification) within the Planning Practice Guidance (PPG) which supports the National Planning Policy Framework (NPPF). Table 3 (Flood Risk Vulnerability and Flood Zone 'Compatibility') within the PPG confirms that this type of land-use is appropriate in Flood Zone 2 and Flood Zone 3 providing there is no increase in flood risk elsewhere due to the proposals.

It should also be noted that as the extension has been identified to be located within Flood Zone 2 only and has been calculated to be less than 250sq.m in size, this report has followed flood risk standing advice for minor extensions as per the Environment Agency's current policy.

Flood Risk Summary

The key potential sources of flood risk have been considered and categorised in **Table 1** below. The focus of this exercise will be to consider the primary risks and how they might impact the development proposals.

Table 1: Key Flood Sources and Level of Risk (Betts Hydro, 2022)

SOURCE OF POTENTIAL FLOOD RISK		RISK RATING	COMMENT
Tidal		Very Low	The Northwest coastline is located 14km west of the development site, therefore the risk to site from tidal flooding is very low.
Groundwater		Low	The site is located within a Medium to High Groundwater Vulnerability Zone and no records of historic flooding at the site due to groundwater have been identified during consultations.
Artificial Sources	Reservoirs	Low	The national flood mapping shows that the site is not at risk from reservoir flooding should a breach or failure occur.
	Canals	Low	There are no canals located within proximity to site, the potential flood risk associated is therefore low.
	Sewers	Low	Initial consultations have not identified any historic sewer flooding onsite, and the potential risk is also low.
Surface Water / Pluvial		Low to High	The online national flood mapping shows the site to be at low to high risk from surface water flooding. It is understood that the proposed surface water flood risk to site is due to low-lying ground levels and the natural fluvial catchment of the adjacent Main River. The proposed risk to site has been discussed in detail subsequently.
Fluvial Main Rivers Ordinary Watercourse		Low to Medium	The nearest Main River is Knowsley Brook located adjacent to the northern boundary of the site. The EA Flood Map for Planning has identified the site is located within Flood Zones 1, 2 and 3 and at very low to high risk from fluvial flooding, as shown in the mapping included within Appendix C .

SOURCE OF POTENTIAL FLOOD RISK	RISK RATING	COMMENT
 Land Drainage Features		Consultation with the EA has therefore been undertaken to obtain detailed flood risk datasets to accurately assess the potential flood risk to the site as part of this assessment.
Climate Change	 Low to Medium	The impacts of climate change on rainfall intensity and frequency are likely to result in increased flood risk. The EA datasets have included consideration for the Climate Change (CC) scenarios. This data has been reviewed as part of this FRA and will therefore impact the level of mitigation required to ensure the proposals be safeguarded for their design life.

Primary Flood Risk – Fluvial

Information relating to flood risk has been obtained from the Environment Agency (EA) and from the Gov.uk website. Review of the online mapping has identified that the site is located within Flood Zones 1, 2 and 3, as shown in **Figure 3** (see national mapping in **Appendix C**). Flood Zone 1 is an area considered to be at little or no fluvial flood risk. Flood Zone 2 is an area at risk in the undefended 1 in 1000yr return period event. Flood Zone 3 is an area at risk in the undefended 1 in 100yr fluvial (or in this case 1 in 200yr tidal) return period event.

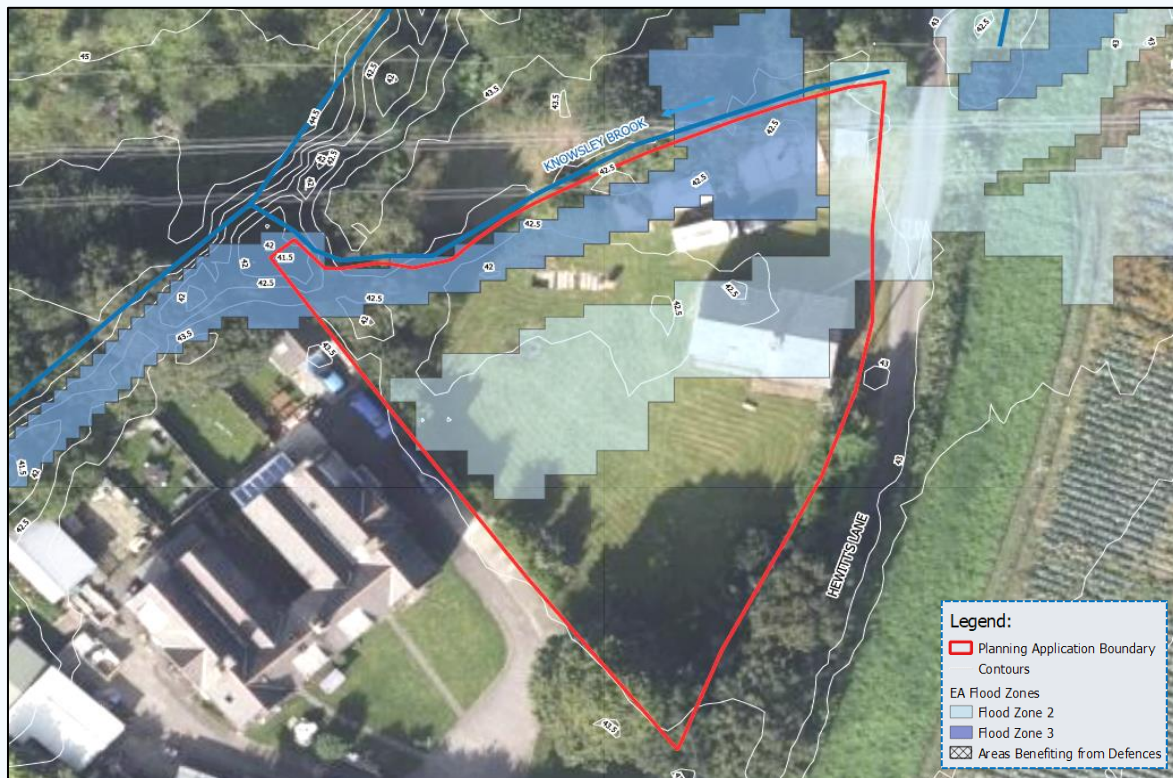


Figure 3: EA Flood Zone Overlay Plan Extract (Gov.UK & Betts Hydro, 2022)

It has been identified however that even though the planning application boundary places the site within Flood Zone 1, 2 and 3, the actual development proposals (90m² extension to the existing dwelling) will be undertaken within Flood Zone 2 only, as shown within **Figure 4**. There will also be no changes made to the land currently located within Flood Zone 3.



Figure 4: EA Flood Zone and Planning Layout Overlay Plan Extract (Gov.UK & Betts Hydro, 2022)

The nearest Main River is Knowsley Brook located adjacent to the northern boundary of the site and given the Flood Zoning, consultations with the EA have been undertaken to obtain the most up-to-date flood risk information (including the current available river model) which will allow a better understanding of the potential flood risk at the site from Knowsley Brook to be gained.

Environment Agency Data Review

The EA have provided onsite predicted Top Water Levels (TWL) in a range of key flood risk events, taken from the Knowsley Brook Model (full output datasets have been included in **Appendix F**). The information provided is confirmed to be the most up-to-date, **Table 2** subsequently notes, the onsite predicted top water levels for the key return period events. **Figure 5** below also shows the fluvial flood extent and levels in the 1 in 1000yr return period event, which delineates that of Flood Zone 2.

Table 2: Predicted Onsite Fluvial Top Water Levels (EA, 2022)

Fluvial Undefended Node 13	Return Period Events (mAOD)				
	1 in 20yr	1 in 50yr	1 in 100yr	1 in 200yr	1 in 1000yr
TWL (mAOD)	No onsite flooding	No onsite flooding	No onsite flooding	No onsite flooding	42.62

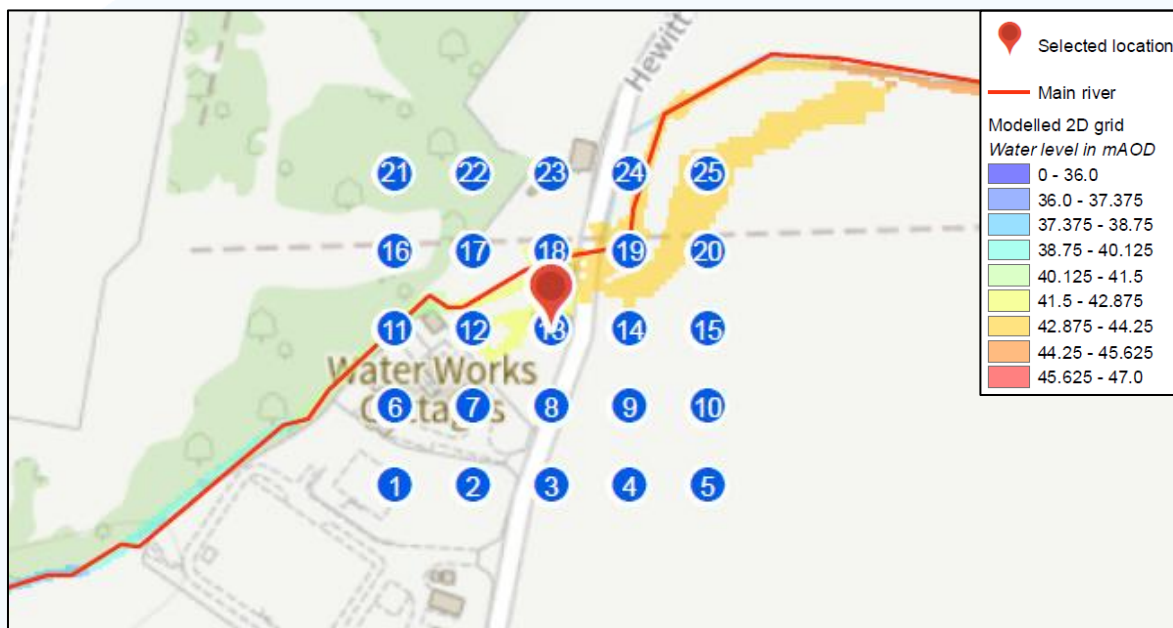


Figure 5: The EA's Onsite Flood Extent and Water Levels in the 1 in 1000yr Event (EA, 2022)

Based on the in-channel and onsite TWL's the site remains flood free during all the key flood modelled events up to the 1 in 1000yr return period event. The EA have therefore illustrated that the site is not at risk during the 1 in 100yr return period event or 1 in 200yr event (which delineates the extent of Flood Zone 3). When the onsite TWL at Node 13 (see **Figure 5**) and the existing ground level at the extension location (42.35mAOD) are compared, it can be stated that the site is at risk during the 1 in 1000yr return period event, with depths of up to 270mm.

The client has however confirmed that the existing property and therefore proposed extension will have a Finished Floor Level (FFL) of 42.77mAOD. with a proposed finished floor level set at 42.77mAOD, the proposed extension (and existing residential dwelling) will be set above the predicted top water levels in all the key events provided. There would be a freeboard of up to 150mm during the more extreme 1 in 1000yr return period event.

Climate Change Scenario

In addition, the EA datasets have also included consideration for the Climate Change (CC) scenarios. In accordance with the EA's latest CCA guidance, for more vulnerable

development, the central allowance for the peak river flows up to the 2080's should be applied to Main Rivers located within the Lower Mersey Management Catchment area. The central allowance for the peak river flow allowance in this catchment has been identified to be 44%.

The EA have not provided modelling for the 44% climate change allowance event but instead have added the 30%, 35% and 70% CC allowances to the existing modelling datasets. Given the scale and nature of the proposals in this instance it would not be considered commensurate to undertake additional hydraulic modelling to consider the 44% scenario and instead the EA datasets have been assessed in terms of climate change impacts for the proposals. The EA have provided outputs (included within **Table 3**) that show the site to remain flood free in the 1 in 100yr plus 30% CC, 1 in 100yr plus 35% CC and in the 1 in 100yr plus 70% CC. It is therefore understood that the site would also remain flood free during the 1 in 100yr plus 44% CC which would be the design event.

Table 3: Predicted Onsite Top Water Levels plus Climate Change (EA, 2022)

Fluvial Undefended Node 13	Return Period Events (mAOD)			
	1 in 100yr (+30%)	1 in 100yr (+35%)	1 in 100yr (+70%)	1 in 1000yr (+30%)
TWL (mAOD)	No onsite flooding	No onsite flooding	No onsite flooding	42.72

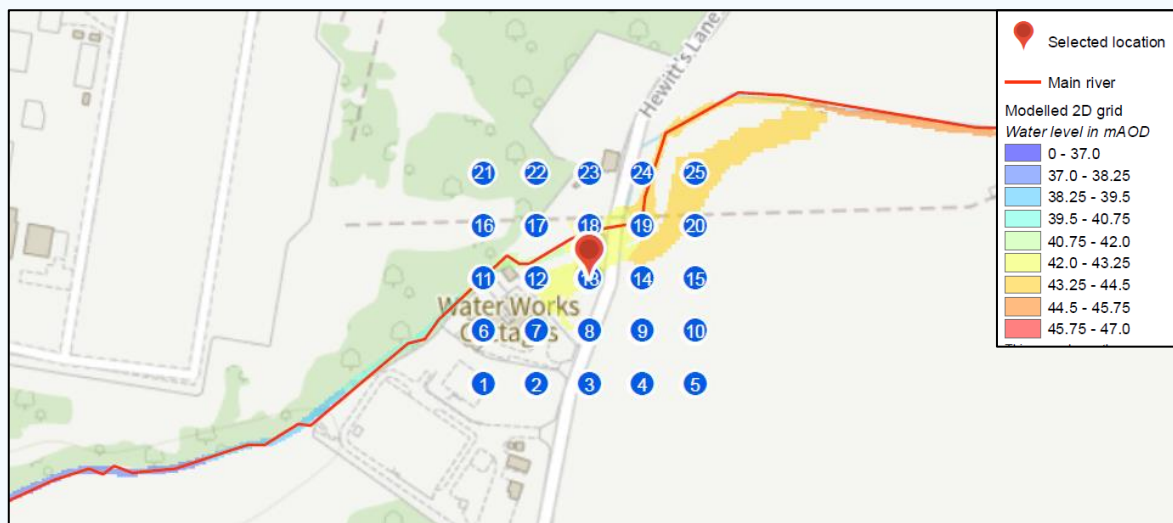


Figure 6: The EA's Onsite Flood Extent and Heights in the 1 in 1000yr plus 30% Climate Change Event (EA, 2022)

The EA have also provided an onsite TWL information during the more extreme 1 in 1000yr plus 30% Climate Change event. Although there is not a requirement to design the proposals to remain safe and flood free in such event, when this top water level (??mAOD) is

compared against the existing ground level, the site is at risk of onsite flood depths up to 370mm.

The existing property and thus the proposed extension will however have an FFL of 42.77mAOD. This FFL therefore provides the existing residential dwelling and therefore the proposed extension with a freeboard of up to 50mm above the predicted TWL during the more extreme 1 in 1000yr event plus 30% CC event.

Blockage Scenario

Reviewing the EA information has also identified that they have also provided datasets for a range of blockage scenarios for the upstream culvert within Hewitt's Lane located adjacent to the eastern boundary of the site (see full datasets included within **Appendix F**). Review of these blockage scenarios has identified that the development proposals remain safe and flood free during the 1 in 100yr and 1 in 100yr plus 30% Climate Change blockage events. These blockage scenarios are understood to be a residual flood risk to the development proposals, but further identify that the site is located at low fluvial flood risk.

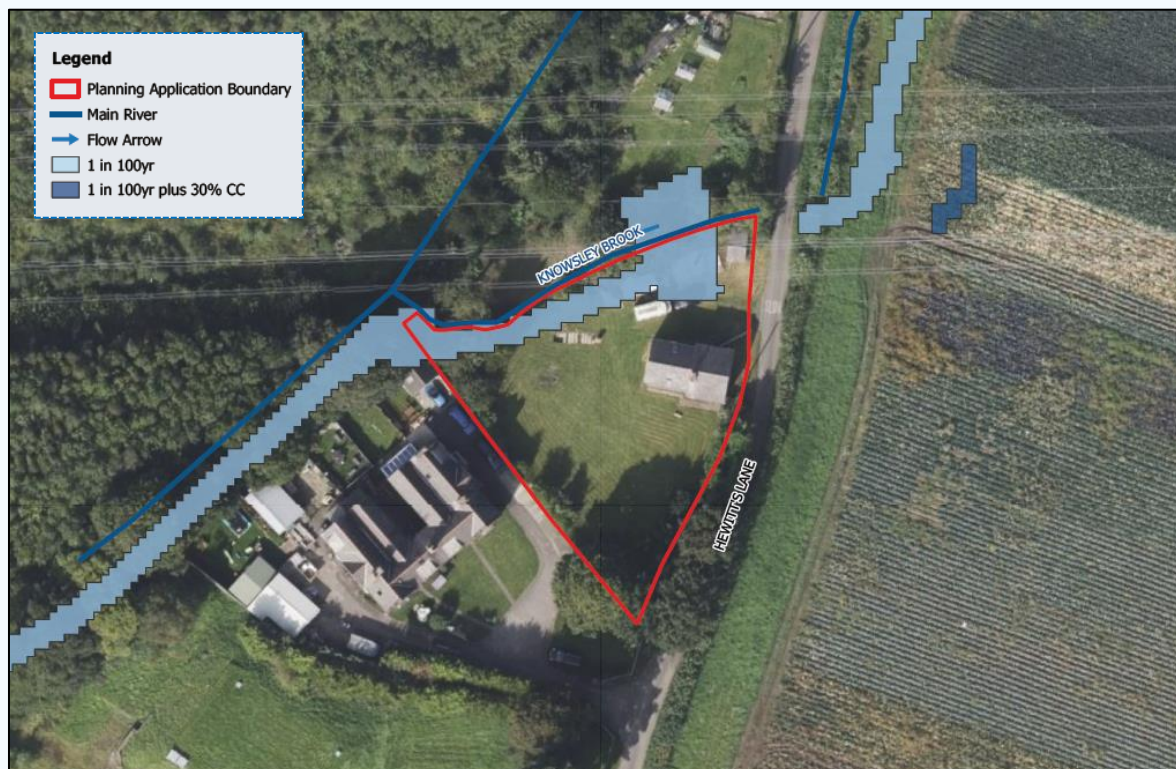


Figure 7: EA Blockage Scenario Flood Extent Plan Extract (Gov.UK & Betts Hydro, 2022)

Surface Water/Pluvial Flood Risk

Surface water flooding occurs when rainwater is unable to drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. The

risk associated with surface water run-off is indicated by the long-term flood mapping. As indicated in **Figure 7**, the site is shown to be at low to high risk of surface water flooding.

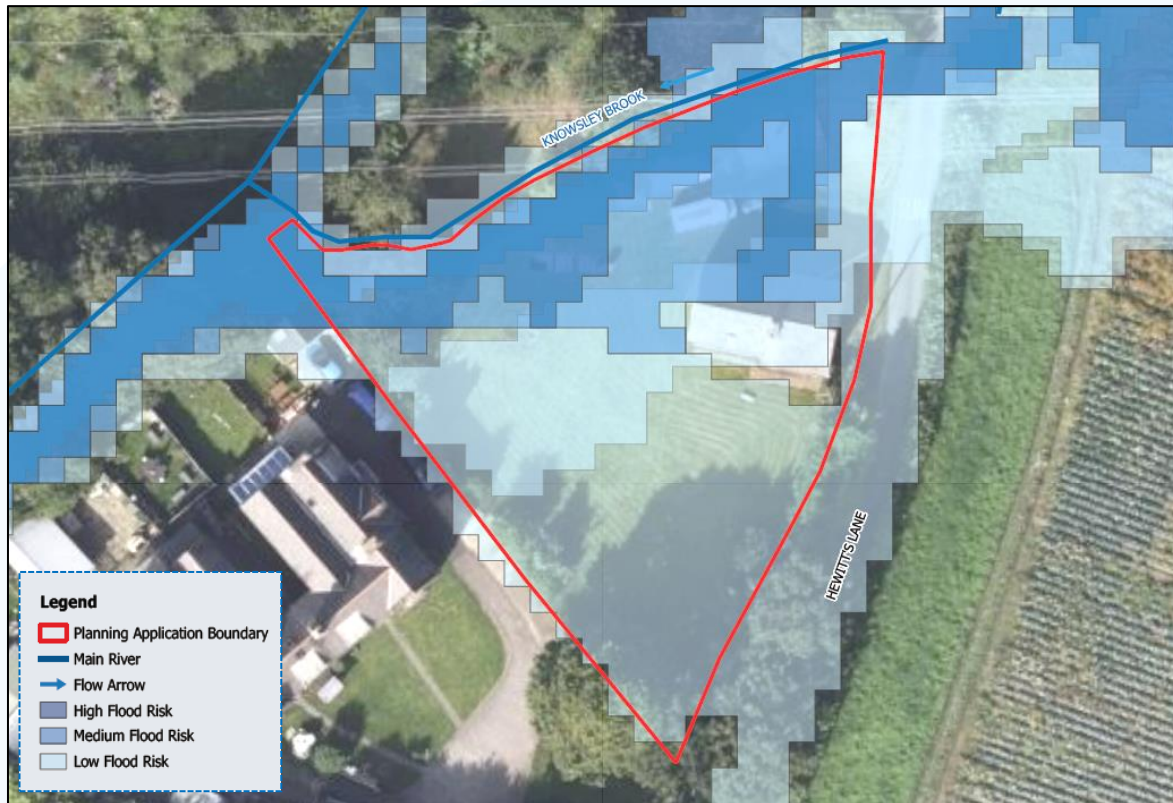


Figure 8: EA Surface Water Flood Risk Overlay Plan Extract (Gov.UK & Betts Hydro, 2022)

As the site is located adjacent to the Main River, it is therefore located within the river's natural fluvial catchment, when this is combined with the existing low-lying ground levels the surface water flood risk appears to be worse on the mapping datasets than the surface water flooding would be in a real-world scenario. Based on the fluvial datasets and the existing topographic survey it is likely that the high-risk areas would remain within the adjacent Main Rivers channel with areas located directly adjacent to be at risk from 300mm to 900mm of surface water flooding. The majority of the site would however be at risk of flood depths up to 300mm; this potential flood risk has already been mitigated for by the raised FFL.

The residual flood risks associated with surface water will continue to be reduced through appropriate onsite levels design and the implementation of formal surface water drainage infrastructure. Any potential exceedance of the post-development flows from the proposed surface water drainage network, will be considered and contained onsite to ensure no increased risk to others.

It is also recommended that the finished floor levels of the proposed extension are raised above the external levels (following any regrade of site), this will help protect the property from excess surface water run-off. Furthermore, the external levels design should provide safe overland flow routes in the rear of the property by steering surface water overland flow away from the property into the existing formal drainage network.

Mitigation Measures and Recommendations

To ensure residential development remains safe, the primary mitigation is typically setting the finished floor levels (FFL) 600mm above the predicted top water level in the design event. As the proposals in this case are an extension to an existing residential property, the FFL will be set as the same level of the existing residential property (42.77mAOD). When this FFL is compared against the TWL's in the key flood risk events, the existing dwelling and the proposed extension will remain safe and flood free during all key flood risk event up to and including the more extreme 1 in 1000yr event (which delineates the extent of Flood Zone 2).

The FFL of the proposed extension will therefore be set 150mm above the predicted TWL in the more extreme 1 in 1000yr event. To provide added resilience, it is also recommended that internal flood resilience measures are incorporated where feasible up to 300mm. These are measures that can be built into new development to provide valuable property level resilience. Measures can include raising electricals and utilities above the ground floor level, using water compatible materials for flooring at ground floor level, horizontal plaster boards rather than vertical (to allow for easier replacement) and the use of non-return flap valves.

Planning policy states that levels raising within Flood Zone 3 would need to evidence that flood risk elsewhere would not increase as a result. This assessment has however identified that the proposed extension is not located within the extent of the 1 in 100yr or 1 in 200yr return period events and therefore not within the events which delineate the extent of Flood Zone 3. The existing car parking area is shown to be located within this extent however this area is already used for car parking and will continue to be used for such. Given that no levels changes are proposed within the extent of the 1 in 100yr/200yr return period events, then no compensatory floodplain storage is required to be provided in this case.

It is also advised that following any regrade, the external levels fall away from the finished floor levels; this will allow for safe overland flow routes to the rear of the garden and minimise any associated flood risks from overland flows. Any surface water run-off generated by the proposed development will be controlled via the existing onsite drainage regime.

Conclusion

This Flood Risk Assessment has followed flood risk standing advice for minor extensions as per the Environment Agency's current policy. The report has identified the potential flood risk sources to the development site and has included the most up-to-date flood risk modelling information, that has been provided by the EA. In review of this information, it is understood that the EA datasets are sufficient to support the proposed development, given the scale and nature of the proposals.

In summary, given that the EA datasets have identified that the development proposals will remain flood free during all key flood risk event including the more extreme 1 in 1000yr and 1 in 1000yr plus CC (30%) events. It is understood that the proposed extension to the existing residential property can be built in accordance with national and local planning policy.

I trust that the above information is clearly identified the risks and required approach, however if you have any further queries, please do not hesitate to contact us.

Yours sincerely,



Megan Berry BSc (Hons) MCIWEM
Flood Risk Analyst

Attached:

Appendix A – Location Plan
Appendix B – Topographic Survey
Appendix C – EA Correspondence
Appendix D – LLFA/LPA Correspondence
Appendix E – UU Correspondence
Appendix F – Development Proposals
Appendix G – EA Data Review

APPENDIX A – LOCATION PLAN

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LOCATION PLAN

MOSS SIDE FARM COTTAGE, HEWITTS LANE, KNOWSLEY, PRESCOT, L34 8HH.



OS X (Eastings)	343999
OS Y (Northings)	397158
Nat Grid	SJ439971 / SJ4399997158
Nearest Post Code	L34 8HH
Lat (WGS84)	N53:28:05 (53.468166744655456)
Long (WGS84)	W2:50:42 (-2.845066458450698)
Lat,Long (WGS84)	53.468166744655456, -
2.845066458450698	
Lat (OSGB36)	N53:28:05 (53.46792547990144)
Long (OSGB36)	W2:50:37 (-2.843700259093574)
Lat,Long (OSGB36)	53.46792547990144, -
2.843700259093574	

APPENDIX B – TOPOGRAPHIC SURVEY

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Quickdraw Surveys Ltd, 58 Mavis Drive
Coppull, Lancashire, PR7 5AF
Telephone: 01257 795111

E-mail: admin@QuickdrawSurveys.co.uk
Web Site: www.QuickdrawSurveys.co.uk

Notes:

The survey has been related to the Ordnance Survey National Grid and level datum using Leica GPS SmartNet data.

The extent of tree canopies and tree bole sizes are estimated.

Only features that are accessible/visible at the time of survey can be detailed.

There are no guarantees offered on the drainage information supplied.

Before commencing works please check important dimensions on-site.

Should there be any discrepancies, inconsistencies, omissions or queries, please contact Quickdraw Surveys Ltd as soon as possible for a resolution.

Abbreviations:

Topographical Surveys

BT	British Telecom Cover	FPR	Post & Rail	RS	Road Sign
Bin	Litter Bin	FPS	Post & Wire	RWP	Rain water pipe
BL	Basement Light	FSS	Barley Stair	SLP	Stop Sign
BT	British Telecom Cover	FW	Water	Stoy	Stoop
CPS	Cable Parking Stairs	FL	Flaglight	TB	Telephone Box
CTV	Cable Television Cover	FP	Flagpole	TL	Telegraph Pole
Elec	Electric Cover	G	Gully	TP	Vent Pipe
EP	Electric Pole	GV	Gas Valve	WM	Water Meter
ER	Earning Rod	Hyd	Hydrant	WO	Water Outlet
FR	Fence	IC	Inspection Cover	U/L	Unable to Lift
FRW	Braced Wire	JB	Junction box		
FSB	Footpath Sign	K	Kiln		
FCL	Footpath Closure	LB	Lamp Box		
FCL	Chain Link	LP	Lamp Post		
FCL	Chain Link	Mkr	Utility marker		
FCL	Chain Link	PM	Parking Marker		
F(OL)	Displaced Fence	P	Post		
FIR	Iron Railings	RE	Rodding Eye		
F08	Open Bead	RNP	Road Name Plate		
FPC	Post & Chain				
AL	Asp. Level	TL	Thresh. Level		
BL	Belt Level	PL	Pipe Level		
CL	Cover Level	RL	Ridge Level		
Elev	Eares Level	SL	Soft Level		
		TL	Top of Fence Level		
		TO	Top of Wall Level		
		WL	Water Level		

A2 Plot @ 1:200

Client
Mr G Williams

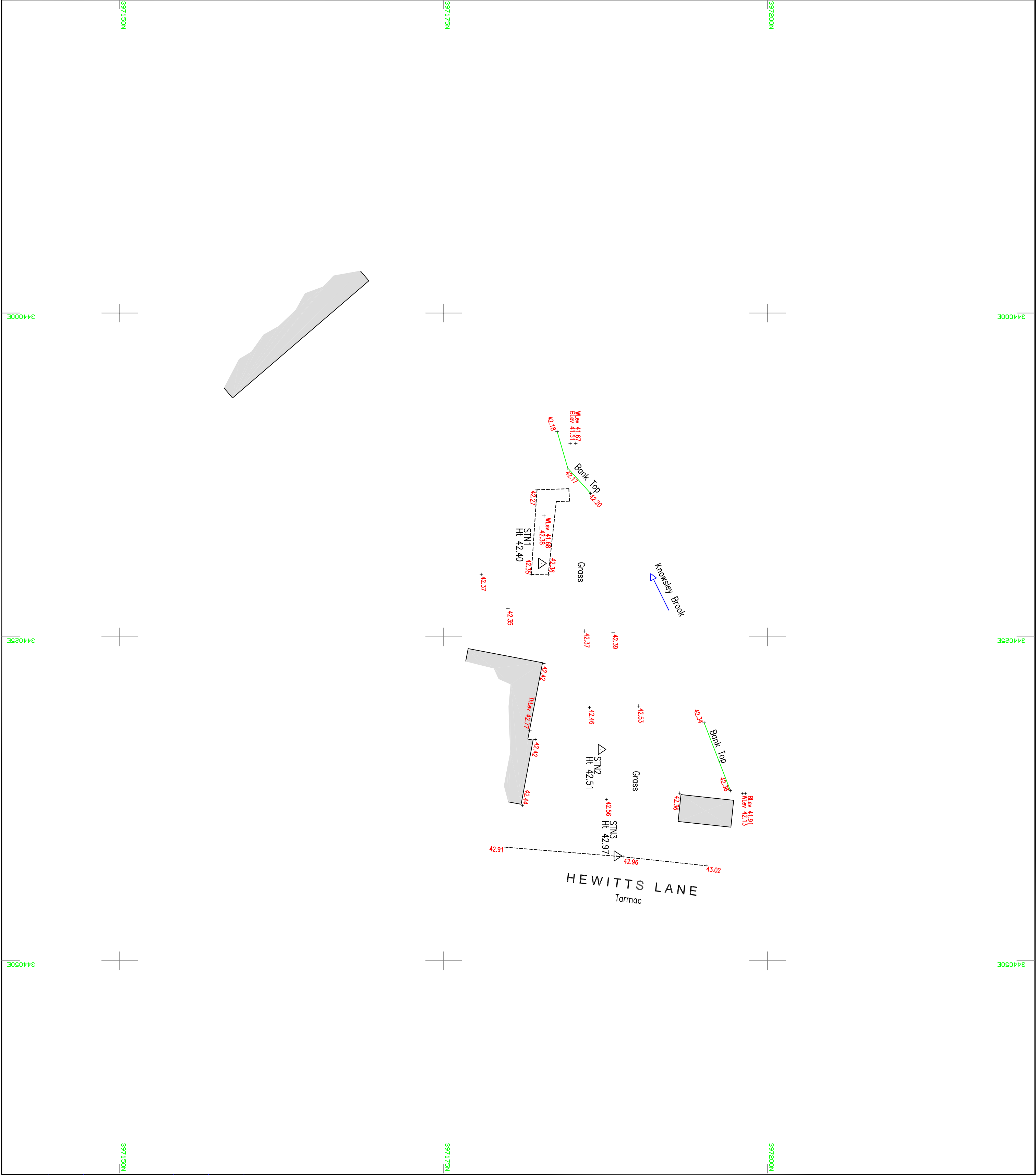
Date
August 2022

Project
Topographical Survey
Mosside Cottage, Hewitts Lane,
Prescot, Knowsley, L34 8HH.

Scale
1:200

Drawing Number
QDS/350/1225/TOP

Revision
0



APPENDIX C – EA CORRESPONDENCE

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Megan Berry

From: CMBLNC Info Requests <Inforequests.cmblnc@environment-agency.gov.uk>
Sent: 25 October 2022 11:26
To: Megan Berry
Subject: CL276186KR: Product 4,5,6 and 7
Attachments: Location Plan.pdf; MOSS SIDE FARM COTTAGE, KNOWSLEY - P4.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Megan

Enquiry regarding product data

Thank you for your enquiry.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Please find the link to the products 5,6 and 7 for the Knowsley Brook 2017 Study: <https://ea.sharefile.com/d-s43ea4b677d5f4cbeb21ba4d3d18488c1> this link expires on 25/11/2022. Please download the data on receipt. This data is being supplied under the terms of our [Conditional Licence](#).

Please refer to [Open Government Licence](#) which explains the permitted use of this information.

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Thanks

Karen

Karen Rooke

Customers and Engagement Officer, Cumbria and Lancashire

Environment Agency | Ghyll Mount, Gillan Way, Penrith 40 Business Park, Penrith, Cumbria, CA11 9BP

inforequests.cmblnc@environment-agency.gov.uk



From: Megan Berry <meganberry@betts-associates.co.uk>
Sent: 25 October 2022 09:51
To: CMBLNC Info Requests <Inforequests.cmblnc@environment-agency.gov.uk>
Subject: RE: CL276186KR: Product 4,5,6 and 7
Importance: High

Hi Karen,

Please can you get the team to send me product 5,6 & 7 as originally requested.

Kind Regards

Megan Berry BSc(Hons) MCIWEM
Flood Risk Analyst

BETTS HYDRO

Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

meganberry@betts-associates.co.uk
www.betts-associates.co.uk

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From: CMBLNC Info Requests <Inforequests.cmbInc@environment-agency.gov.uk>

Sent: 25 October 2022 09:12

To: Megan Berry <meganberry@betts-associates.co.uk>

Subject: CL276186KR: Product 4,5,6 and 7

Dear Megan

Enquiry regarding product data

Thank you for your enquiry, apologies for the delay in your response.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

Please see attached P4 and below response for: MOSS SIDE FARM COTTAGE, HEWITTS LANE, KNOWSLEY, PRESCOT, L34 8HH

I trust the attached product 4 includes all the information you requested in your email, however, if you require further information, such as product 5,6, or 7, please get back in touch.

- Fluvial data was taken from the Knowsley Brook 2017 Study. Level and flow data has been provided for various annual probability flood events, including a 30%, 35% and 70% allowance for climate change. Current guidance on climate change allowances can be checked at: www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances
- The Environment Agency does not hold any record of historic flooding in this location. Please be aware however that this does not necessarily mean that flooding has not occurred here in the past, as our records are not comprehensive.
- For further information on flooding from surface water, groundwater or ordinary watercourses, please contact your lead local flood authority, Knowsley District Council.
- Surface water flood risk maps can be viewed online at: <https://flood-warning-information.service.gov.uk/long-term-flood-risk>

Please refer to [Open Government Licence](#) which explains the permitted use of this information.

Please get in touch if you have any further queries or contact us within two months if you'd like us to review the information we have sent.

Thanks

Karen

Karen Rooke

Customers and Engagement Officer, Cumbria and Lancashire

Environment Agency | Ghyll Mount, Gillan Way, Penrith 40 Business Park, Penrith, Cumbria, CA11 9BP

inforequests.cmlnc@environment-agency.gov.uk



From: Megan Berry <meganberry@betts-associates.co.uk>

Sent: 06 October 2022 12:26

To: CMLNC Info Requests <inforequests.cmlnc@environment-agency.gov.uk>

Subject: RE: CL276186KR: Product 4,5,6 and 7

Good morning,

Please can I be provided with an update as to when this data will be sent?

Kind Regards

Megan Berry BSc(Hons) MCIWEM

Flood Risk Analyst

BETTS HYDRO

Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY

Chester +44 (0)1244 289041

meganberry@betts-associates.co.uk

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From: CMBLNC Info Requests <Inforequests.cmbInc@environment-agency.gov.uk>
Sent: 27 September 2022 08:01
To: Megan Berry <meganberry@betts-associates.co.uk>
Subject: CL276186KR: Product 4,5,6 and 7

Dear Megan

Thank you for contacting the Environment Agency regarding product data.

We appreciate that you have already been waiting over 20 working days for your response.

Unfortunately our Flood Risk Management Team are currently managing an extremely high workload and we are experiencing delays of upto 6 weeks over the 20 working days in responding to requests. We expect this to improve as we move through October, the team are running approximately 6 weeks behind the original response due dates.

We appreciate that this is not an ideal situation and can only apologise for any inconvenience this delay may cause you. We assure you that your request will be dealt with as soon as possible and we thank you in advance for your patience in this matter.

Kind regards.

Karen Rooke
Customer and Engagement Officer
Cumbria and Lancashire



From: Megan Berry <meganberry@betts-associates.co.uk>
Sent: 26 September 2022 09:22
To: CMBLNC Info Requests <Inforequests.cmbInc@environment-agency.gov.uk>
Cc: Clare Williams <wclare22@yahoo.com>; Bill Schafer <bill@schaferassociates.co.uk>
Subject: RE: CL276186KR: Product 4,5,6 and 7

Good morning,

Please can I be provided with an update as to when this data will be sent?

Kind Regards

Megan Berry BSc(Hons) MCIWEM
Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

meganberry@betts-associates.co.uk
www.betts-associates.co.uk

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From: CMBLNC Info Requests <Inforequests.cmbInc@environment-agency.gov.uk>
Sent: 20 September 2022 12:56
To: Megan Berry <meganberry@betts-associates.co.uk>
Subject: CL276186KR: Product 4,5,6 and 7

Dear Megan

Thank you for contacting the Environment Agency regarding product data.

We appreciate that you have already been waiting over 20 working days for your response.

Unfortunately our Flood Risk Management Team are currently managing an extremely high workload and we are experiencing delays of upto 6 weeks over the 20 working days in responding to requests. We expect this to improve as we move through August.

We appreciate that this is not an ideal situation and can only apologise for any inconvenience this delay may cause you. We assure you that your request will be dealt with as soon as possible and we thank you in advance for your patience in this matter.

Kind regards.

Karen Rooke
Customer and Engagement Officer
Cumbria and Lancashire



From: Megan Berry <meganberry@betts-associates.co.uk>
Sent: 20 September 2022 12:15
To: CMBLNC Info Requests <Inforequests.cmbInc@environment-agency.gov.uk>
Cc: Clare Williams <wclare22@yahoo.com>; Bill Schafer <bill@schaferassociates.co.uk>
Subject: RE: CL276186KR: Product 4,5,6 and 7
Importance: High

Good morning,

It has now been 20 working days, please can I have an update as to when I can expect this data?

Kind Regards

Megan Berry BSc(Hons) MCIWEM
Flood Risk Analyst

BETTS HYDRO

Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

meganberry@betts-associates.co.uk
www.betts-associates.co.uk

CIVIL | STRUCTURAL | GEO-ENVIRONMENTAL | HYDROLOGY | FLOOD RISK MANAGEMENT
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From: CMBLNC Info Requests <Inforequests.cmbInc@environment-agency.gov.uk>

Sent: 19 August 2022 18:11

To: Megan Berry <meganberry@betts-associates.co.uk>

Subject: CL276186KR: Product 4,5,6 and 7

Dear Megan

Thank you for contacting the Environment Agency regarding product data

As your request for information falls under either the Freedom of Information Act or Environmental Information Regulations we respond within 20 working days.

Unfortunately our Flood Risk Management Team are currently managing an extremely high workload and we are experiencing delays of up to four weeks in responding to requests.

We appreciate that this is not an ideal situation and can only apologise for any inconvenience this may cause you. We assure you that your request will be dealt with as soon as possible and we thank you in advance for your patience in this matter.

In the meantime you may wish to look at www.data.gov.uk to see if the data you have requested is available for you online.

For further information on what you can expect from us and our full service commitment to you, please click this link; <https://www.gov.uk/government/publications/environment-agency-customer-service-commitment>

Kind regards.

Karen Rooke
Customer and Engagement Officer
Cumbria and Lancashire



From: Megan Berry <meganberry@betts-associates.co.uk>
Sent: 19 August 2022 14:52
To: CMBLNC Info Requests <Inforequests.cmblnc@environment-agency.gov.uk>
Subject: Product 4,5,6 and 7

To whom it may concern,

MOSS SIDE FARM COTTAGE, HEWITTS LANE, KNOWSLEY, PRESCOT, L34 8HH.

Please could you confirm whether you have any information) that you feel would be valuable to a Flood Risk Assessment and Drainage Management Strategy for the above site (location plans attached), including details of historical flooding and any predicted flood water levels; this would be greatly appreciated. If there are any specific requirements that you require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind Regards

Megan Berry BSc(Hons) MCIWEM
Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

meganberry@betts-associates.co.uk
www.betts-associates.co.uk

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APPENDIX D – LLFA/LPA CORRESPONDENCE

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Megan Berry

From: Megan Berry
Sent: 27 October 2022 10:58
To: 'LLFA@knowsley.gov.uk'
Subject: Historical Flood Risk Information
Attachments: Location Plan.pdf

To whom it may concern,

MOSS SIDE FARM COTTAGE, HEWITTS LANE, KNOWSLEY, PRESCOT, L34 8HH.

Please could you confirm whether you have any information) that you feel would be valuable to a Flood Risk Assessment and Drainage Management Strategy for the above site (location plans attached), including details of historical flooding and any predicted flood water levels; this would be greatly appreciated. If there are any specific requirements that you require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind Regards

Megan Berry BSc(Hons) MCIWEM
Flood Risk Analyst

BETTS HYDRO

Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

meganberry@betts-associates.co.uk
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APPENDIX E – UU CORRESPONDENCE

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Megan Berry

From: Megan Berry
Sent: 27 October 2022 10:58
To: wastewaterdeveloperservices@uuplc.co.uk
Subject: Sewer Flood Risk
Attachments: Location Plan.pdf

To whom it may concern,

MOSS SIDE FARM COTTAGE, HEWITTS LANE, KNOWSLEY, PRESCOT, L34 8HH.

Please could you confirm whether you have any information) that you feel would be valuable to a Flood Risk Assessment and Drainage Management Strategy for the above site (location plans attached), including details of historical flooding and any predicted flood water levels; this would be greatly appreciated. If there are any specific requirements that you require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind Regards

Megan Berry BSc(Hons) MCIWEM
Flood Risk Analyst

BETTS HYDRO

Consulting Engineers

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Chester +44 (0)1244 289041

meganberry@betts-associates.co.uk
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SUDS | STRUCTURAL SURVEYS | PARTY WALL DUTIES | INFILTRATION | GEOTECHNICAL

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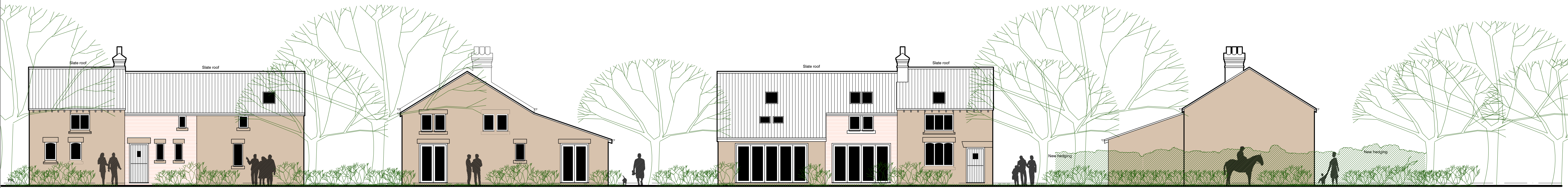
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APPENDIX F – DEVELOPMENT PROPOSALS

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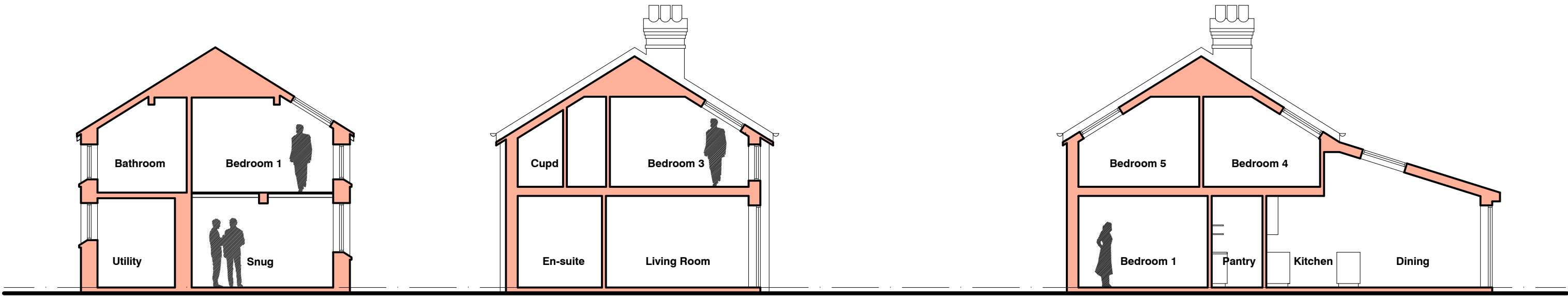


FRONT ELEVATION

SIDE ELEVATION

REAR ELEVATION

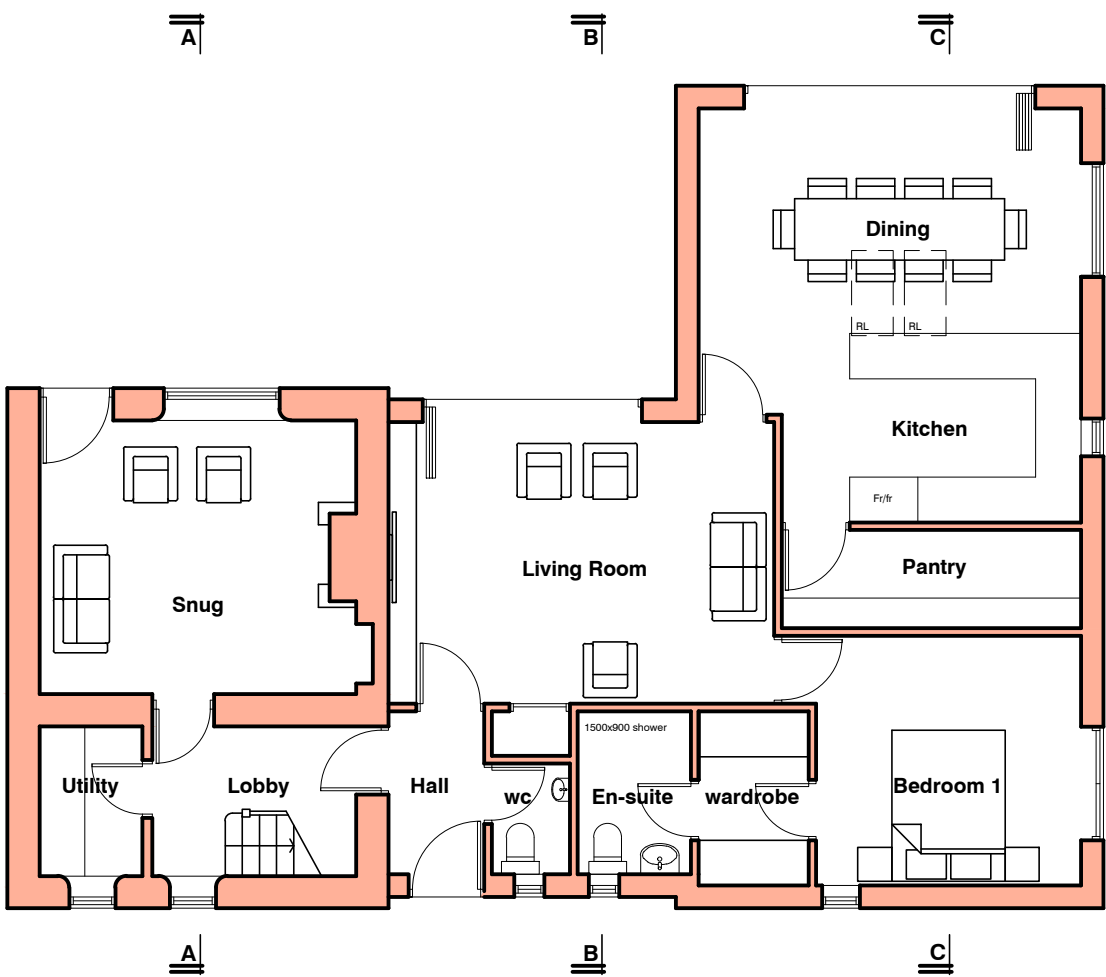
SIDE ELEVATION



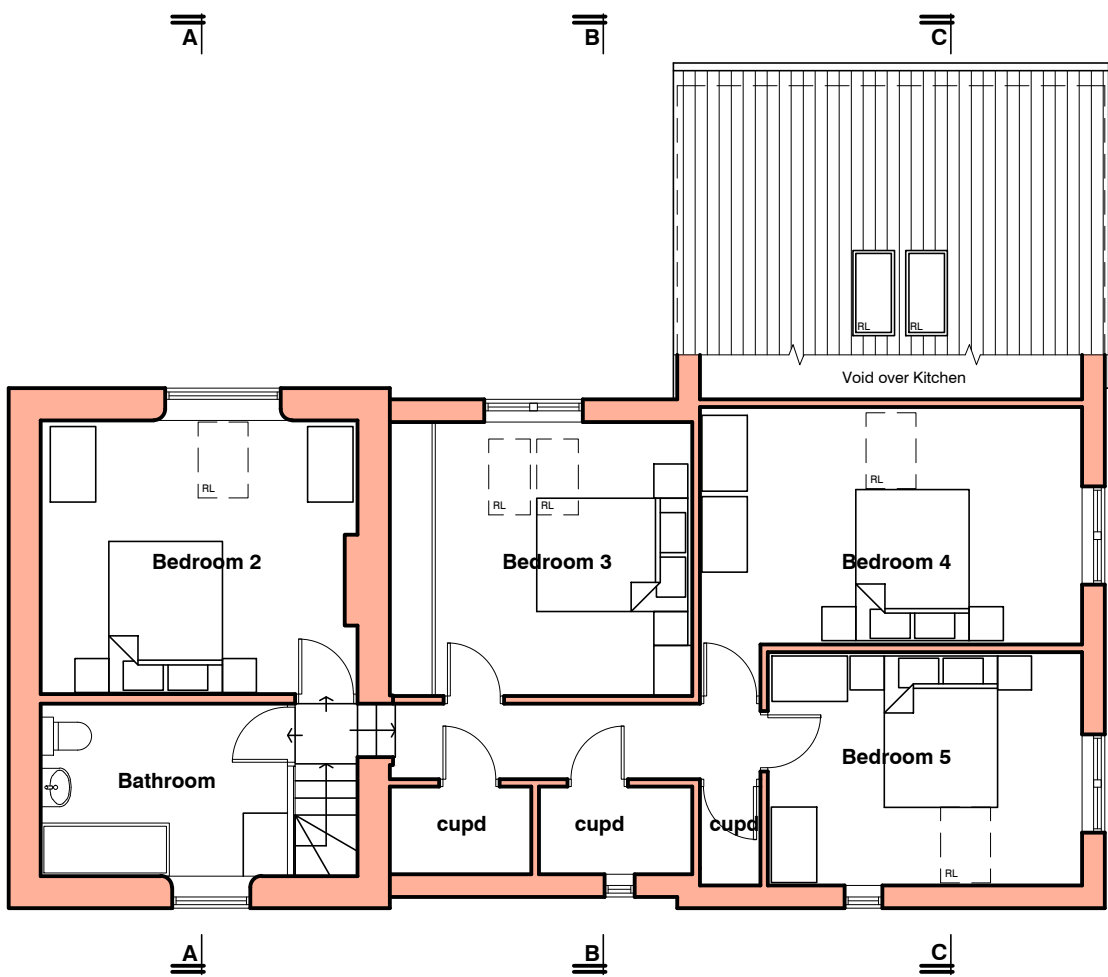
SECTION A-A

SECTION B-B

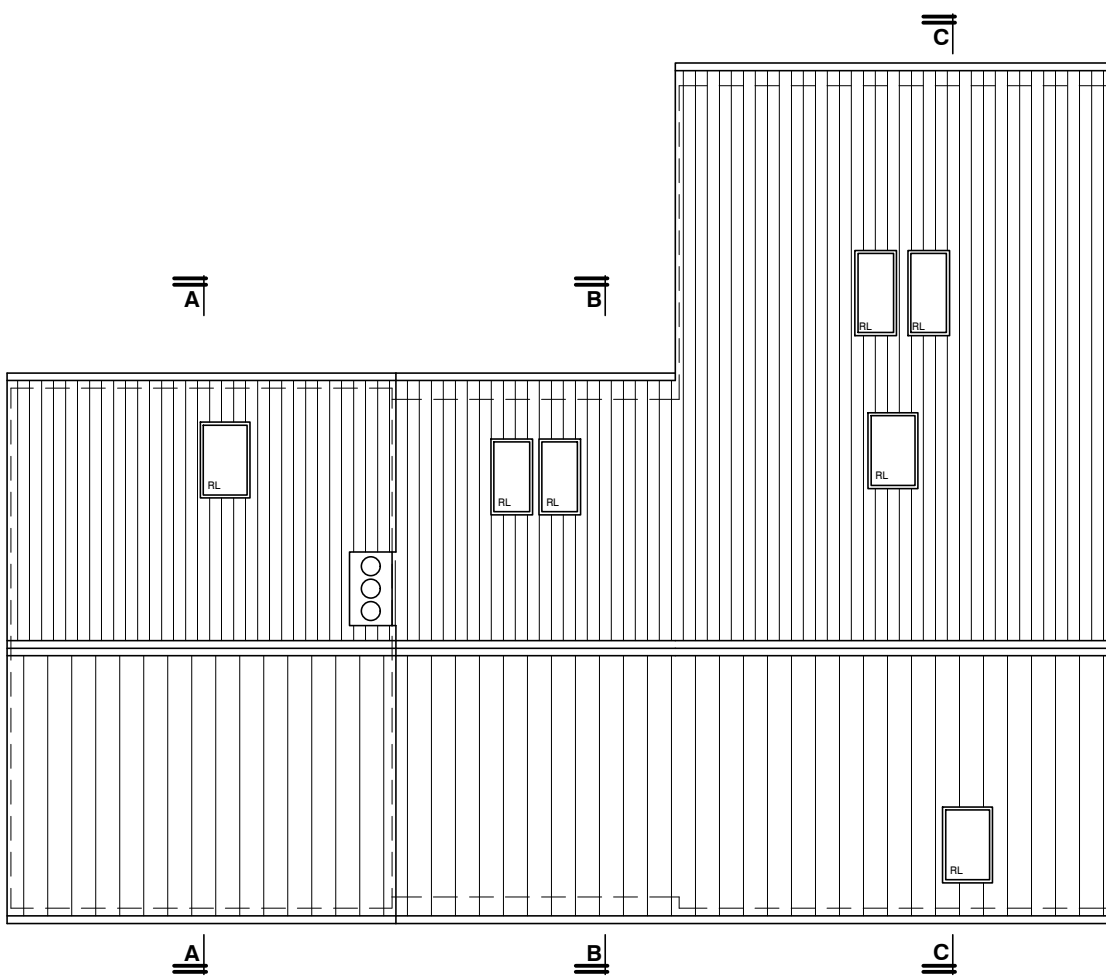
SECTION C-C



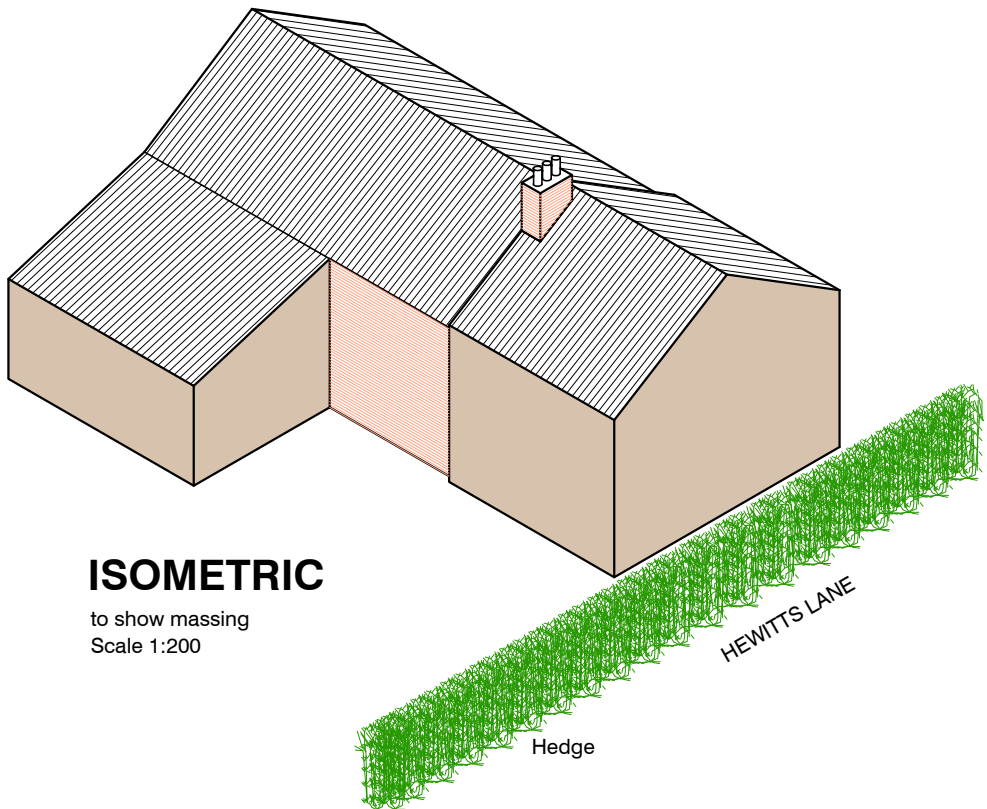
GROUND FLOOR PLAN



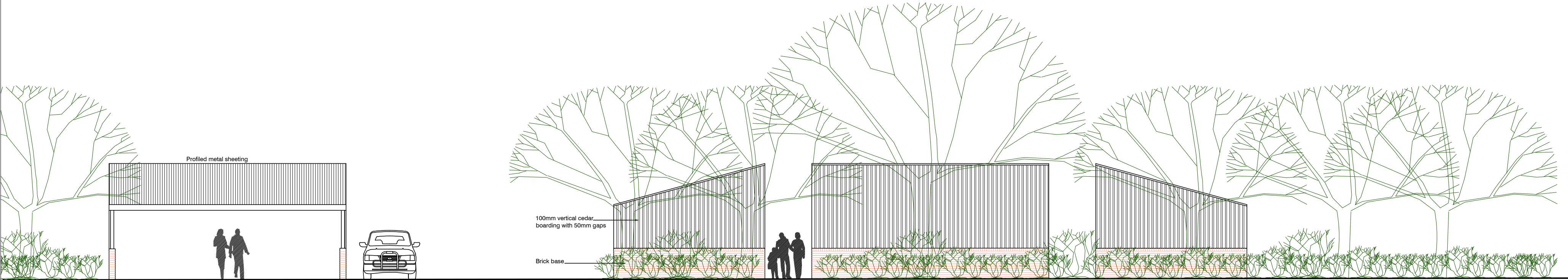
FIRST FLOOR PLAN



ROOF PLAN



ISOMETRIC
to show massing
Scale 1:200

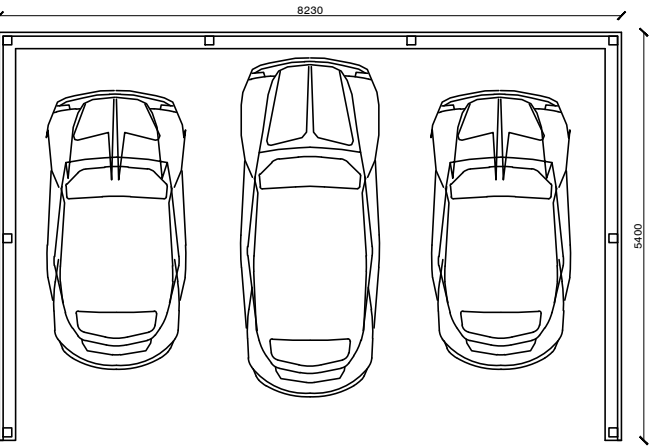


FRONT

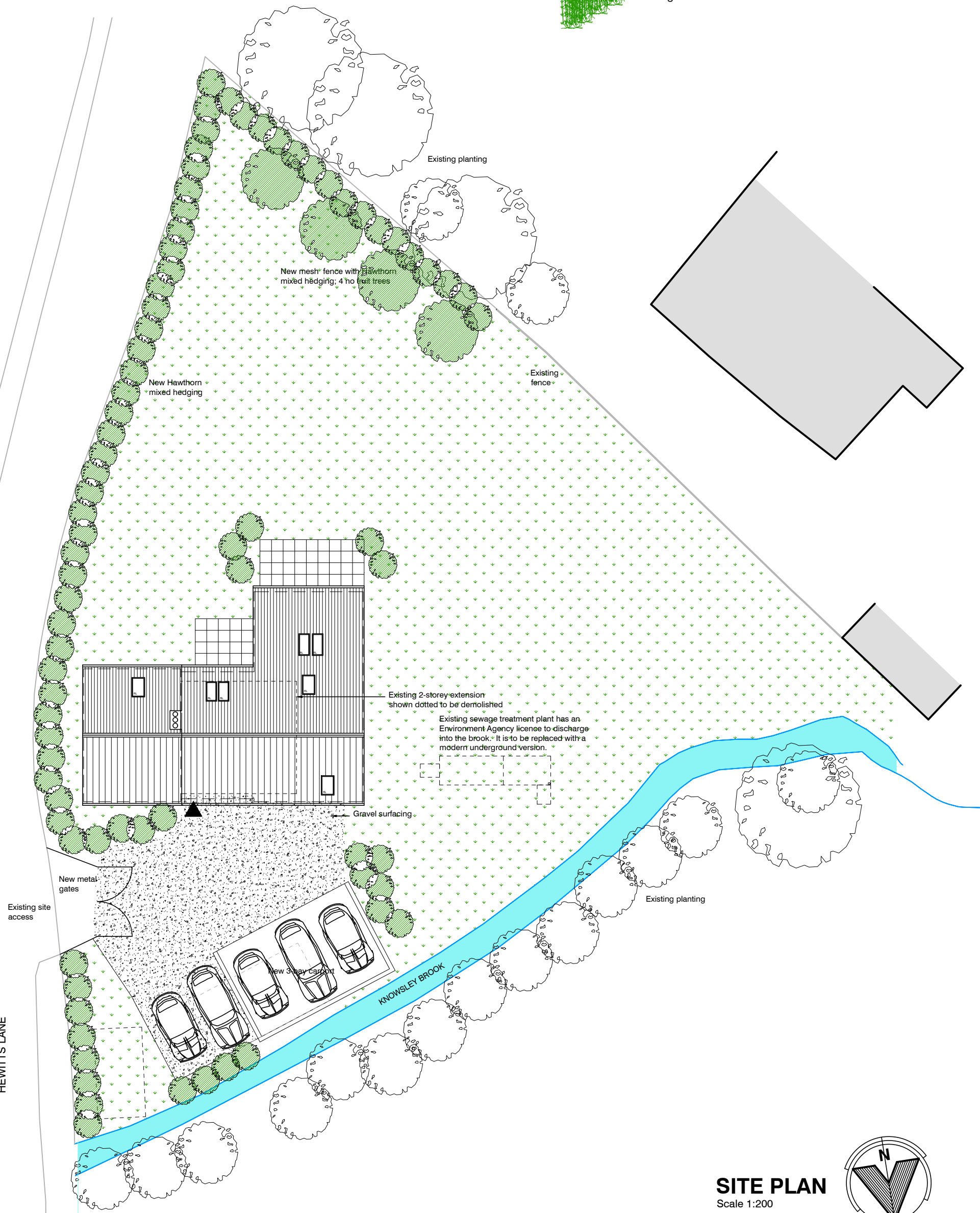
SIDE

REAR

SIDE



PLAN
CARPORT DETAILS



SITE PLAN
Scale 1:200

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Revisions
A July 2022 Amendments following LA response and client meeting 2022.07.19.
B July 2022 Amended following LA response 2022.07.29.

Schafer Associates
56 Belvedere Road,
Ashton-in-Makerfield,
Lancashire, WN4 8RU.

t 01942-717300
e info@schaferassociates.co.uk
w www.schaferassociates.co.uk

arb
Architects Registration Board

RIBA
Chartered Practice

Scale
1:100 and 1:200 @ A1
Date
Mar 2022
Drawn
wjs

Job
Mossie Cottage, Hewitts Lane, Knowsley, Prescot, L34 8HH.
Proposed alterations and extension of existing house
Drawing title
Sketch plans

Schafer Associates
Chartered Architects

Job number
1308
Drawing number
3.02
Revision
B

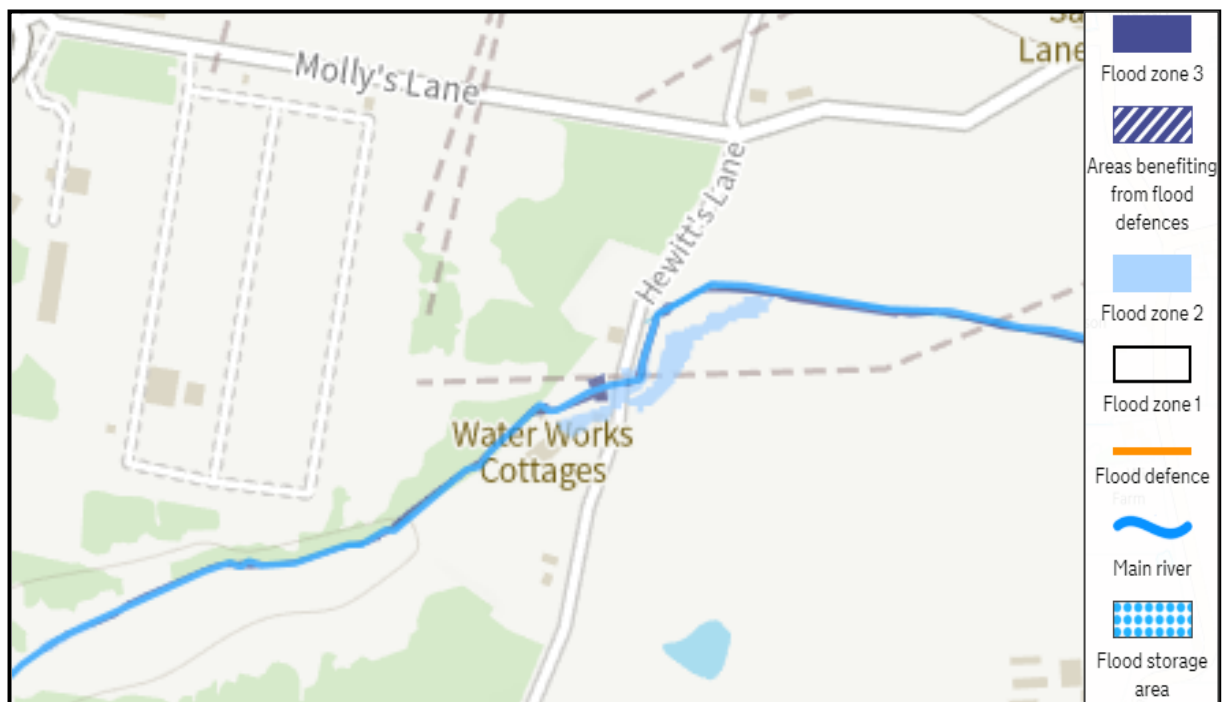
APPENDIX G – EA FLOOD DATA REVIEW

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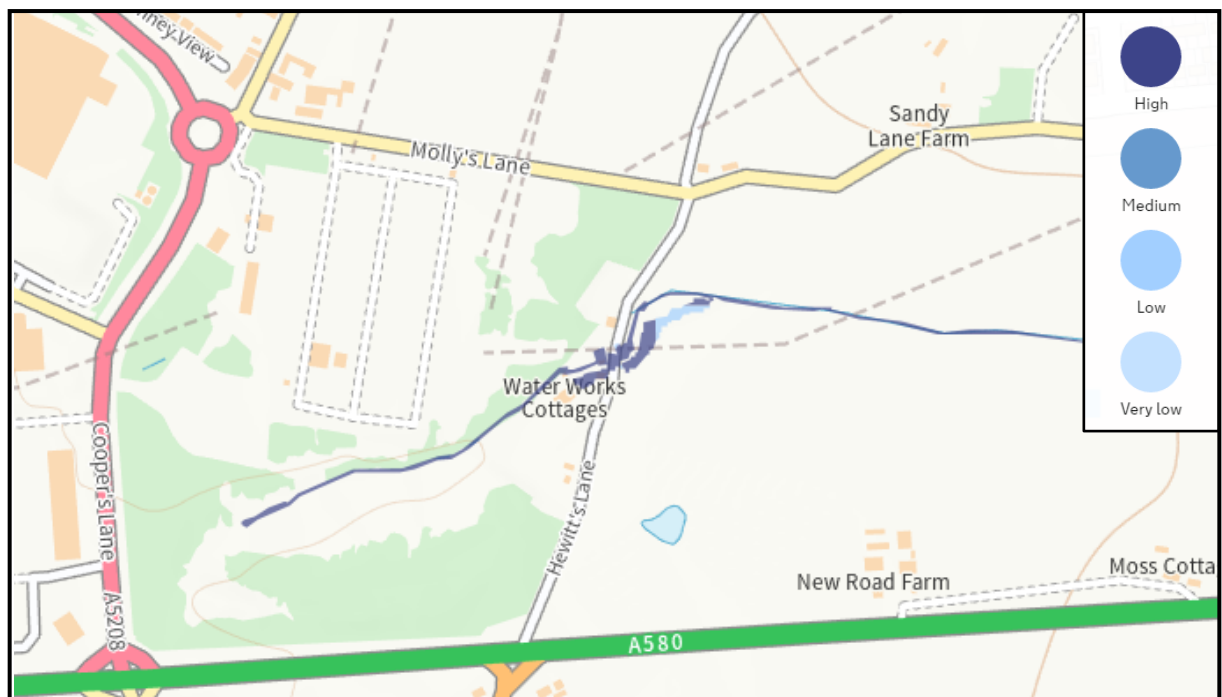


NATIONAL FLOOD MAPPING

Flood Map for Planning

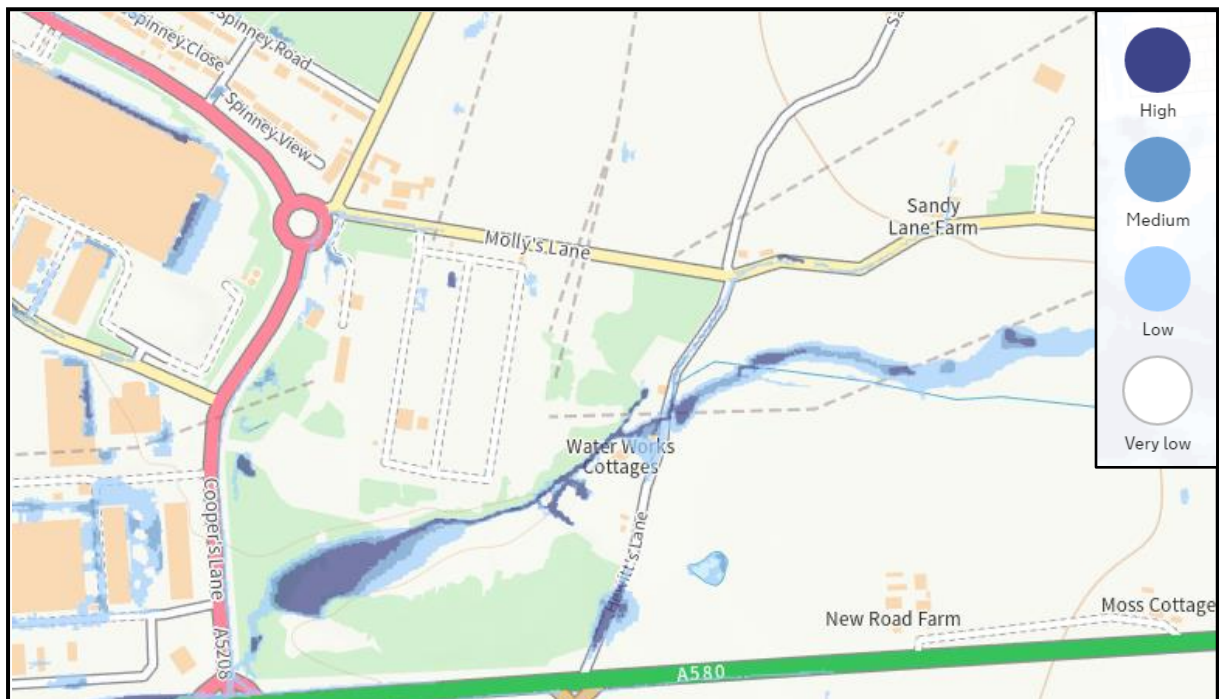


Long Term Flood Risk – Rivers or Sea



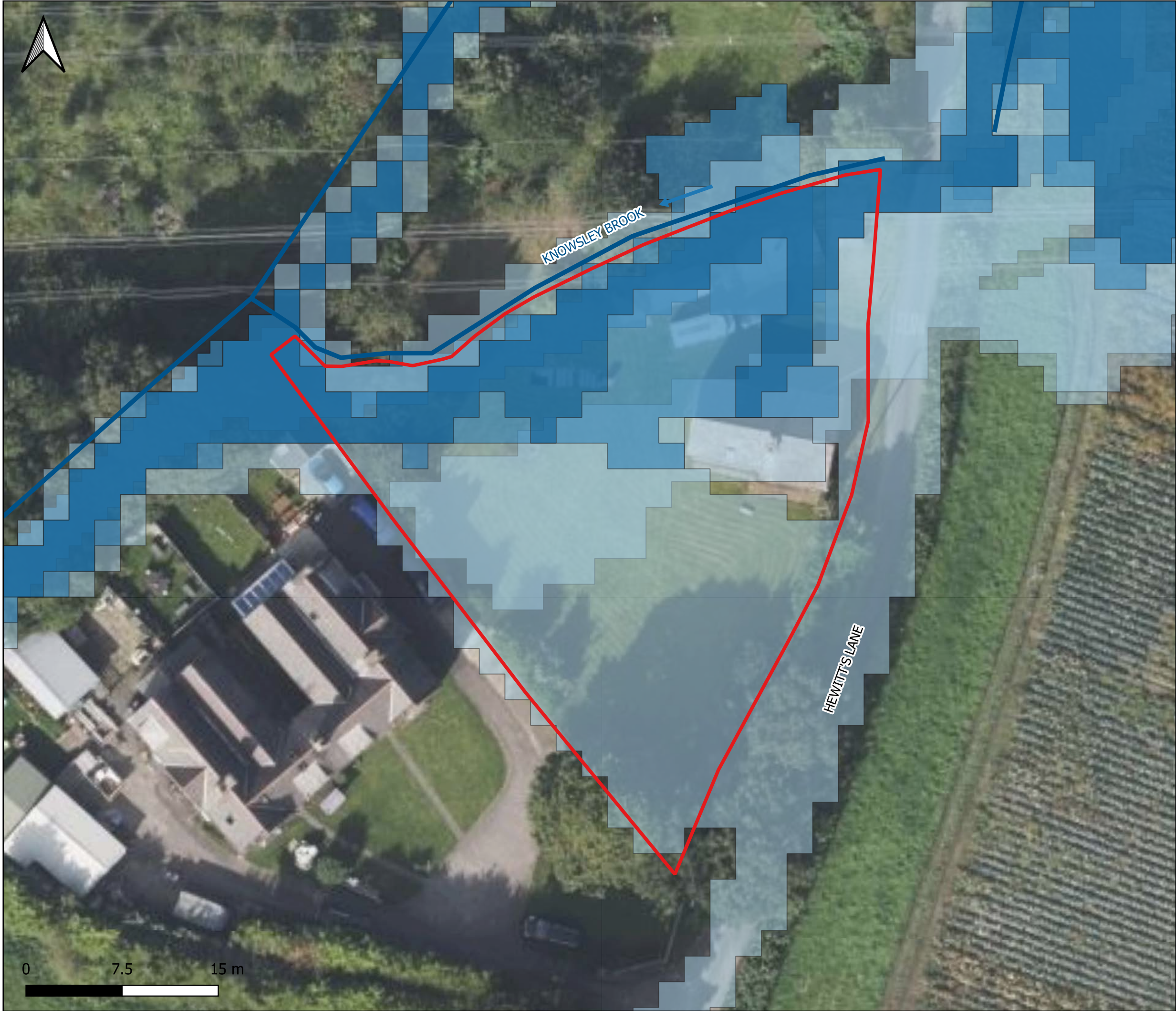
NATIONAL FLOOD MAPPING

Long Term Flood Risk – Surface Water



Long Term Flood Risk - Reservoirs





DO NOT SCALE

Legend

-  Planning Application Boundary
-  Main River
-  Flow Arrow
-  High Flood Risk
-  Medium Flood Risk
-  Low Flood Risk

A	13/10/22	MB	PRELIMINARY FOR ISSUE	KW
REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS:



BETTS HYDRO
CONSULTING ENGINEERS

Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 enquiries@betts-associates.co.uk

Clare Williams

PROJECT:
**MOSSIDE COTTAGE
PRESCOT, KNOWSLEY**

TITLE:
**EA'S SURFACE WATER
FLOOD RISK PLAN**

DATE: 13/10/22	SCALE @ SIZE: 1000@A3	DRAWN: MB	CHECKED: KW
PROJECT No: HYD767	DRAWING No: 103	REV: A	



DO NOT SCALE

Legend

- Planning Application Boundary
- Main River
- ➔ Flow Arrow
- Topographic Fall
- Contours
- Flood Zone 2
- Flood Zone 3

A	13/10/22	MB	PRELIMINARY FOR ISSUE	KW
REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS:



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CONSULTING ENGINEERS

Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 enquiries@betts-associates.co.uk

Clare Williams

PROJECT:
**MOSSIDE COTTAGE
PRESCOT, KNOWSLEY**

TITLE:
**EA'S FLOOD ZONE PLAN
WITH PLANNING LAYOUT
OVERLAY**

DATE: 13/10/22	SCALE @ SIZE: 1000@A3	DRAWN: MB	CHECKED: KW
PROJECT No: HYD767	DRAWING No: 102	REV: A	



DO NOT SCALE

Legend

- Planning Application Boundary
- Main River
- Flow Arrow
- Topographic Fall
- Contours
- Flood Zone 2
- Flood Zone 3

A	13/10/22	MB	PRELIMINARY FOR ISSUE	KW
REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS:



BETTS HYDRO
CONSULTING ENGINEERS

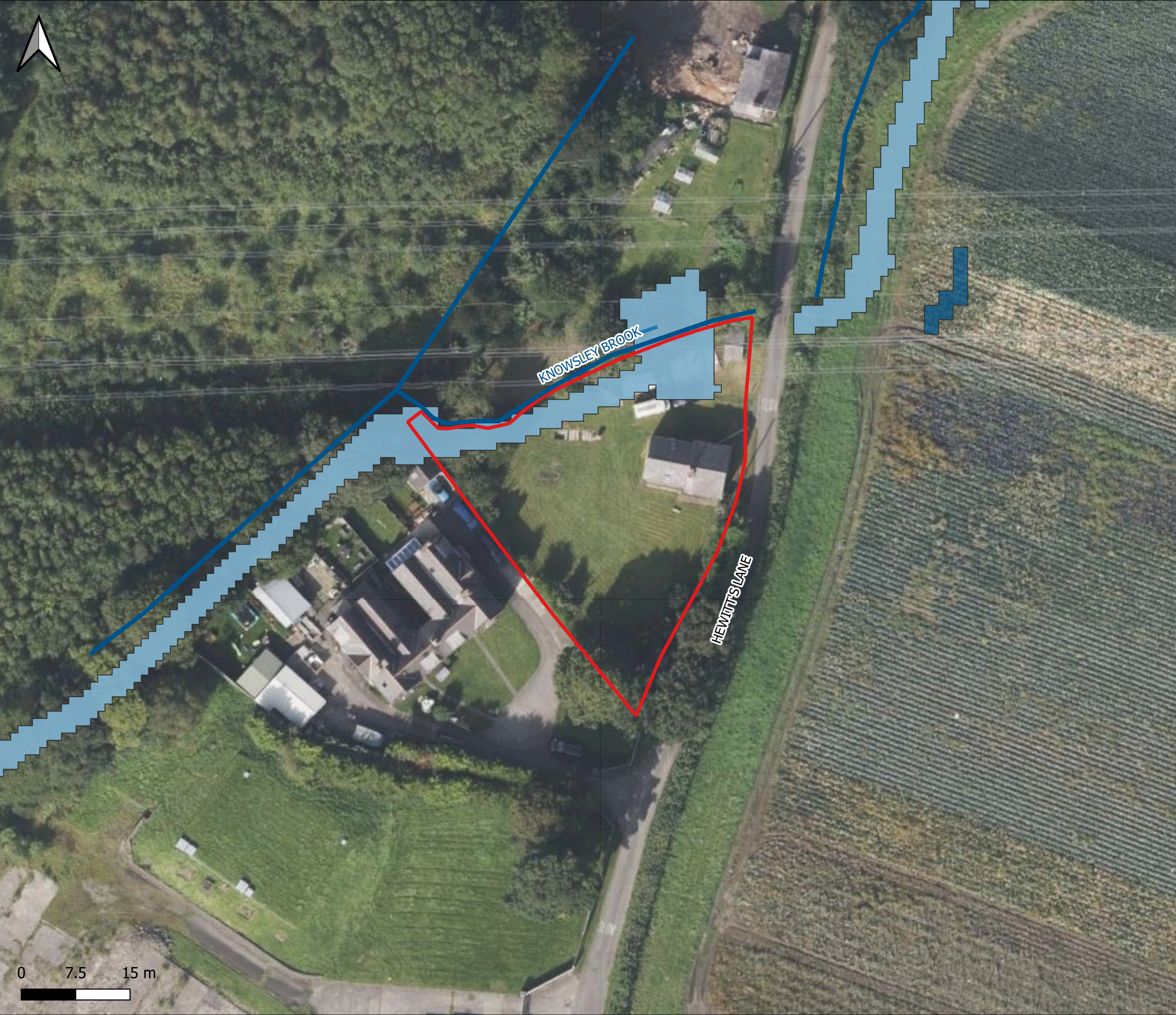
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 enquiries@betts-associates.co.uk

Clare Williams

PROJECT:
**MOSSIDE COTTAGE
PRESCOT, KNOWSLEY**

TITLE:
**EA'S FLOOD ZONE
PLAN**

DATE: 13/10/22	SCALE @ SIZE: 1000@A3	DRAWN: MB	CHECKED: KW
PROJECT No: HYD767	DRAWING No: 101	REV: A	



DO NOT SCALE

Legend

- Planning Application Boundary
- Main River
- Flow Arrow
- 1 in 100yr
- 1 in 100yr plus 30% CC

A	13/10/22	MB	PRELIMINARY FOR ISSUE	KW
REV	DATE	BY	DESCRIPTION	CHK

DRAWING STATUS:



BETTS HYDRO
CONSULTING ENGINEERS

Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY
Tel: 01244 288178 enquiries@betts-associates.co.uk

Clare Williams

PROJECT:
**MOSSIDE COTTAGE
PRESCOT, KNOWSLEY**

TITLE:
**EA'S BLOCKAGE SCENARIO'S
FLOOD EXTENT PLAN**

DATE: 13/10/22	SCALE @ SIZE: 1000@A3	DRAWN: MB	CHECKED: KW
PROJECT No: HYD767	DRAWING No: 104	REV: A	

Flood risk assessment data

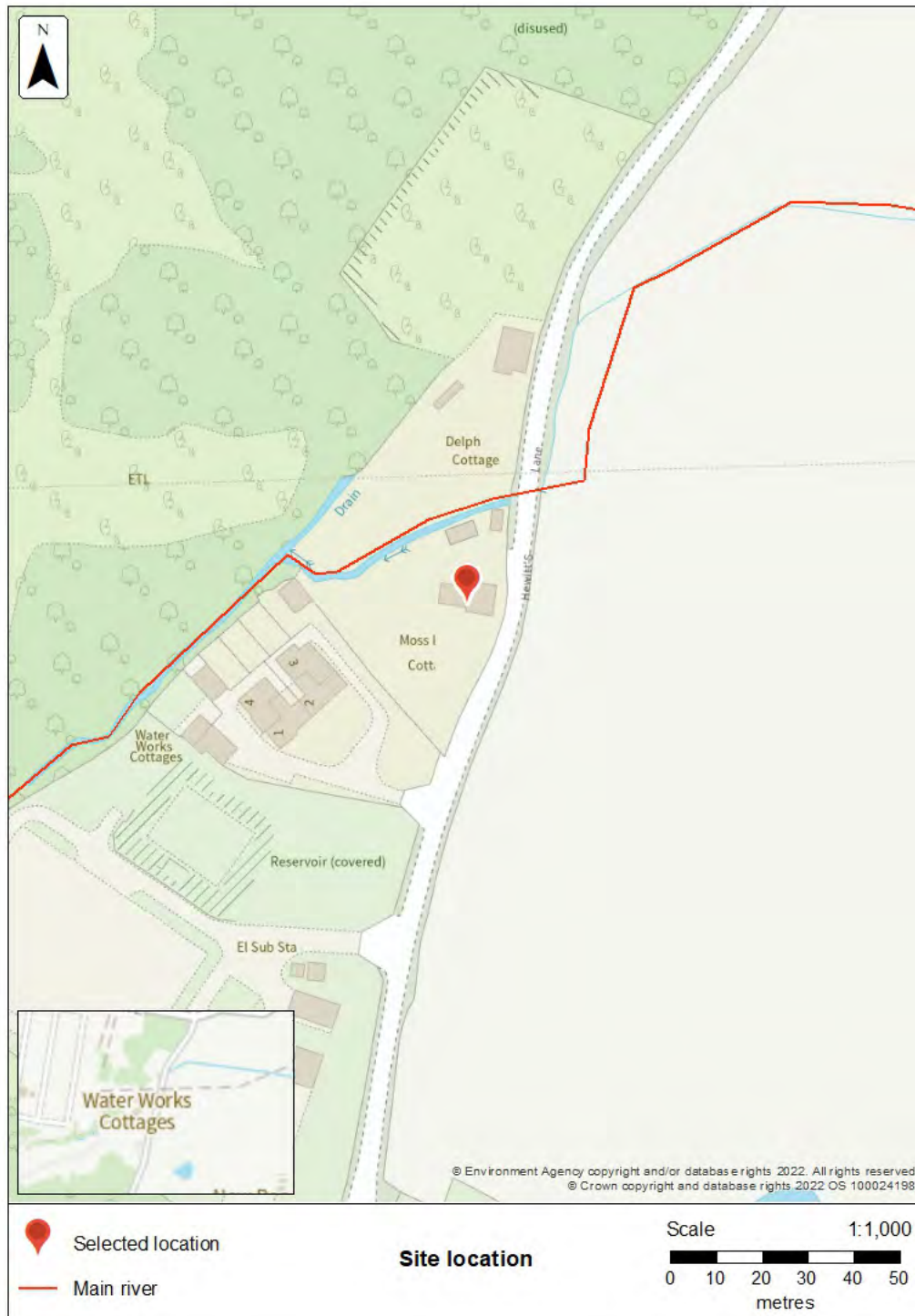
Location of site: 344032 / 397177 (shown as easting and northing coordinates)

Document created on: 21 October 2022

This information was previously known as a product 4.

Customer reference number: C3FB5V9FCJ98

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)
- modelled data
- climate change modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Information that's unavailable

This document **does not** contain:

- historic flooding
- flood defences and attributes

We do not have historic flooding data for this location.

Please note that:

- flooding may have occurred that we do not have records for
- flooding can come from a range of different sources
- we can only supply flood risk data relating to flooding from rivers or the sea

You can contact your Lead Local Flood Authority or Internal Drainage Board to see if they have other relevant local flood information. Please note that some areas do not have an Internal Drainage Board.

We aren't able to display flood defence locations and attributes as there are no formal flood defences in the area of interest.

Surface water and other sources of flooding

Use the [long term flood risk service](#) to find out about the risk of flooding from:

- surface water
- ordinary watercourses
- reservoirs

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

About the models used

Model name: Knowsley Brook 2017

Scenario(s): No defences exist fluvial, no defences exist climate change fluvial

Date: 31 March 2018

This model contains 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

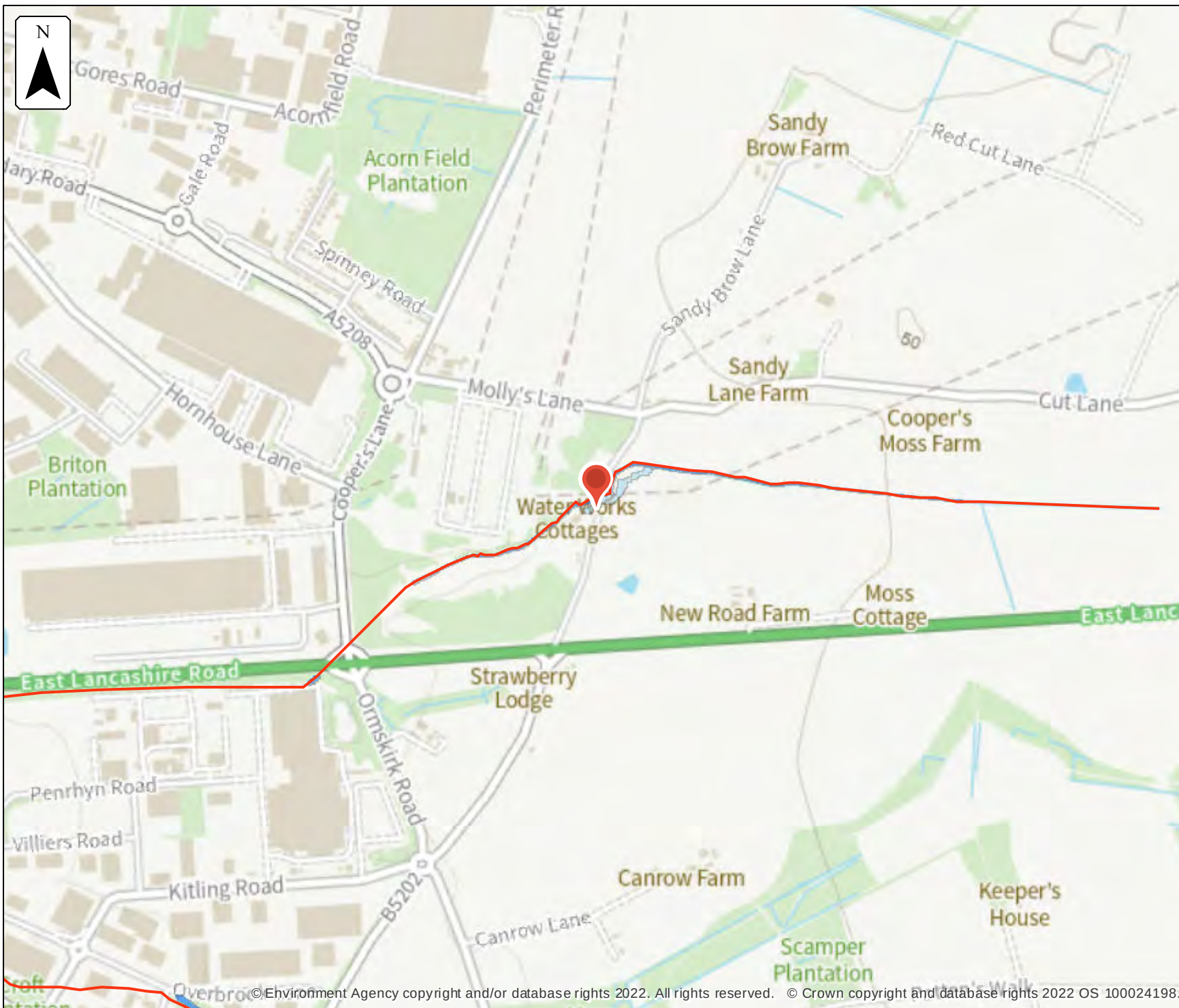
Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- 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

This data is updated on a quarterly basis as better data becomes available.



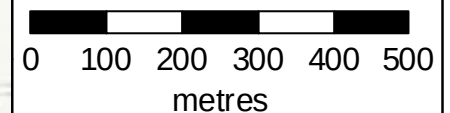
Flood map for planning

Location (easting/northing)
344032/397177

Scale
1:10,000

Created
21 Oct 2022

-  Selected location
-  Main river
-  Flood zone 3
-  Flood zone 2



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
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

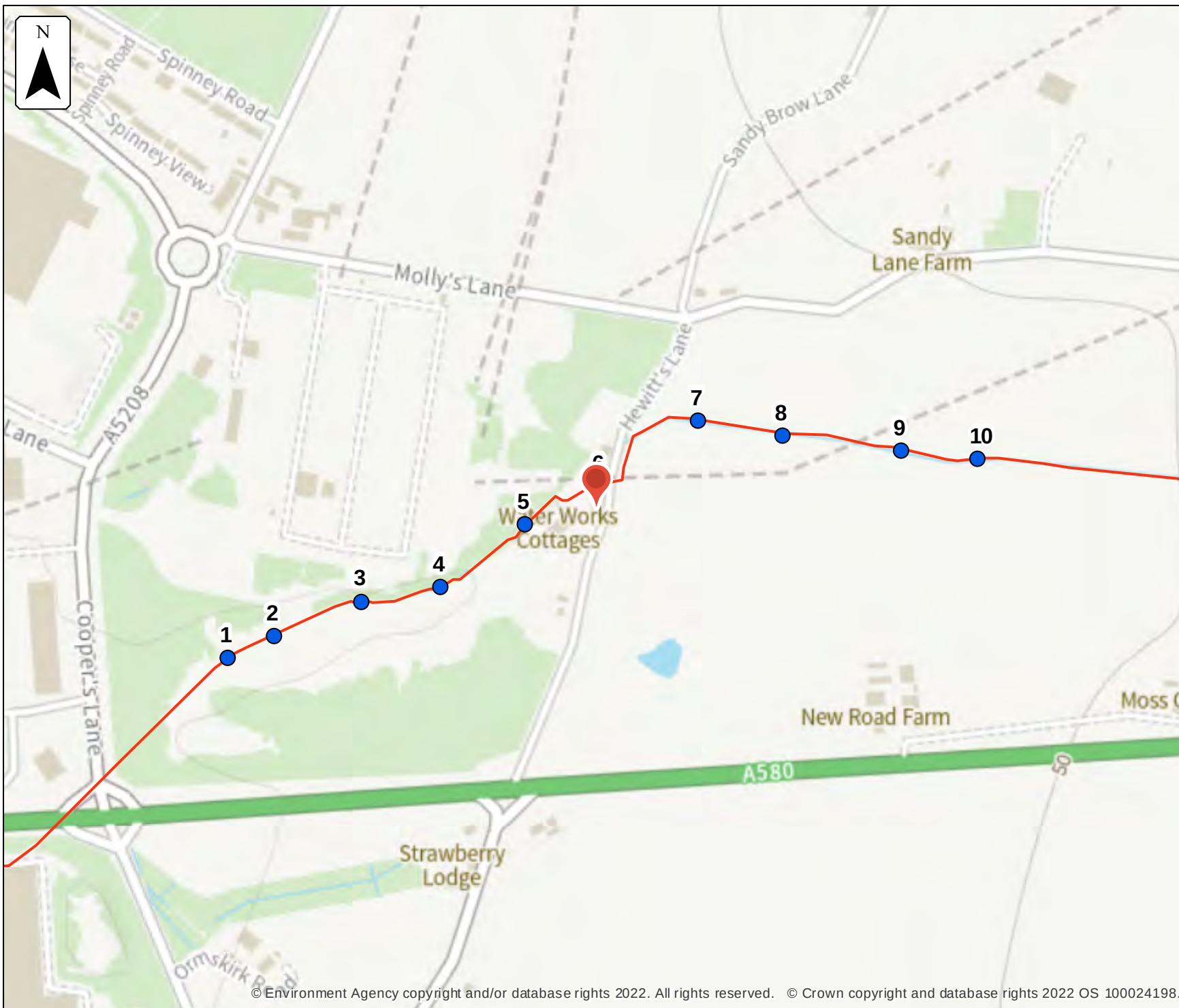
The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

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:

- No defences exist modelled fluvial: risk of flooding from rivers where there are no flood defences
- No defences exist climate change modelled fluvial: risk of flooding from rivers where there are no flood defences, including estimated impact of climate change



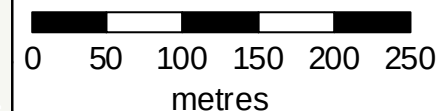
No defences exist modelled fluvial node locations

Location (easting/northing)
344032/397177

Scale Created
1:5,000 21 Oct 2022

Model name
Knowsley Brook 2017

-  Selected location
-  Modelled location
-  Main river



Modelled node locations data

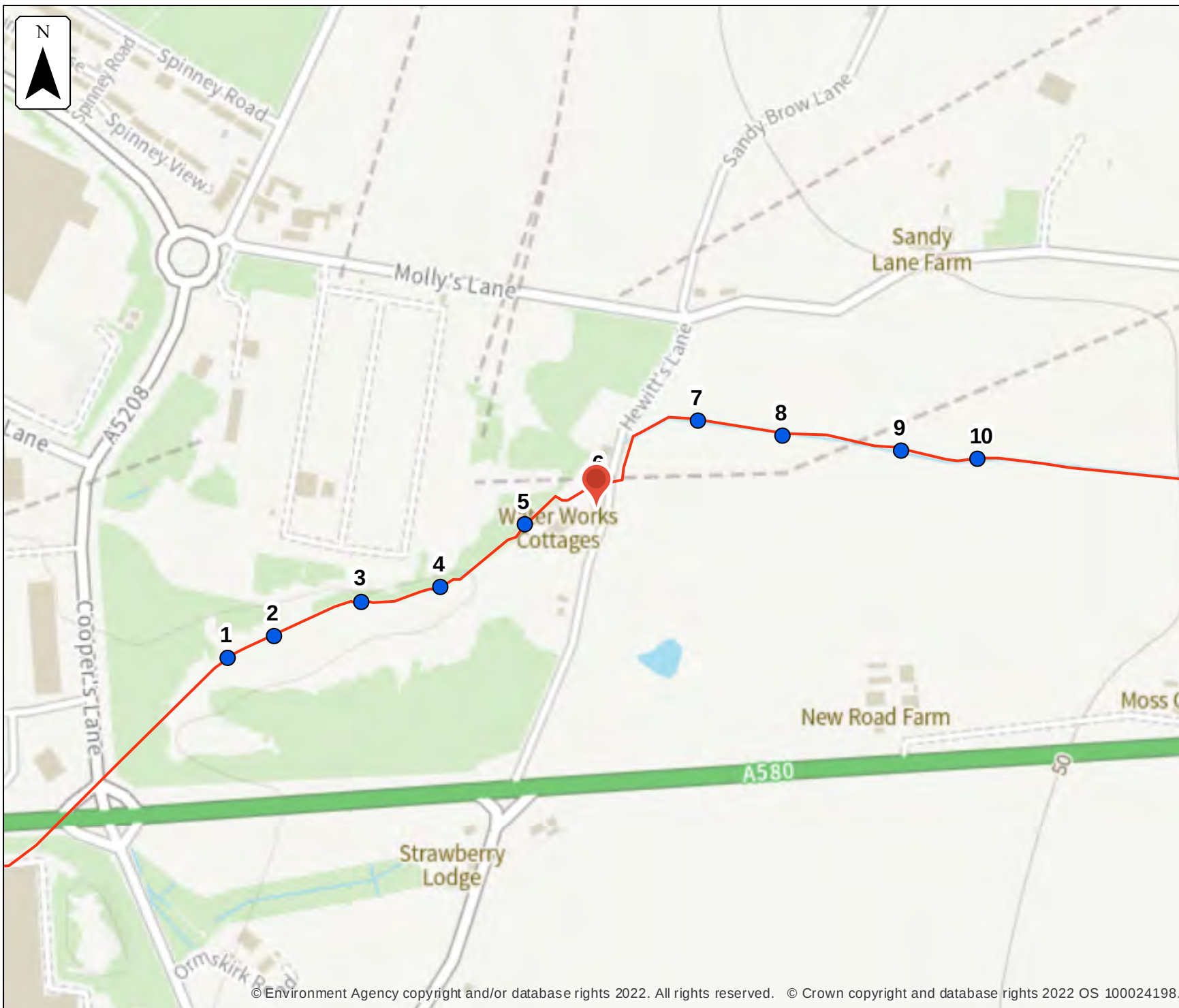
No defences exist

Label	Modelled location ID	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	992577	343674	397031	36.05	0.65	36.13	0.80	36.18	0.88	36.21	0.94	36.30	1.10	36.45	1.41
2	992502	343719	397052	36.31	0.60	36.38	0.74	36.41	0.81	36.43	0.86	36.49	1.01	36.61	1.30
3	992501	343804	397085	37.24	0.51	37.28	0.63	37.29	0.69	37.31	0.73	37.34	0.86	37.40	1.14
4	992488	343881	397099	38.55	0.44	38.58	0.54	38.60	0.59	38.61	0.64	38.65	0.75	38.71	1.02
5	992512	343963	397160	40.25	0.36	40.29	0.44	40.31	0.48	40.32	0.51	40.35	0.61	40.43	0.87
6	992550	344035	397197	42.12	0.29	42.16	0.35	42.19	0.39	42.20	0.41	42.24	0.49	42.34	0.69
7	992509	344131	397260	44.21	0.29	44.25	0.35	44.27	0.39	44.28	0.41	44.33	0.49	44.40	0.76
8	992480	344213	397246	45.07	0.29	45.10	0.35	45.11	0.39	45.12	0.41	45.15	0.49	45.29	0.76
9	992591	344328	397232	45.97	0.29	46.0	0.35	46.02	0.39	46.03	0.41	46.07	0.49	46.16	0.76
10	992535	344402	397224	46.55	0.29	46.58	0.35	46.59	0.39	46.60	0.41	46.63	0.49	46.76	0.76

Data in this table comes from the Knowsley Brook 2017 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.



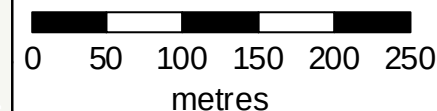
**No defences exist
climate change
modelled fluvial
node locations**

Location (easting/northing)
344032/397177

Scale Created
1:5,000 21 Oct 2022

Model name
Knowsley Brook 2017

-  Selected location
-  Modelled location
-  Main river



Modelled node locations data

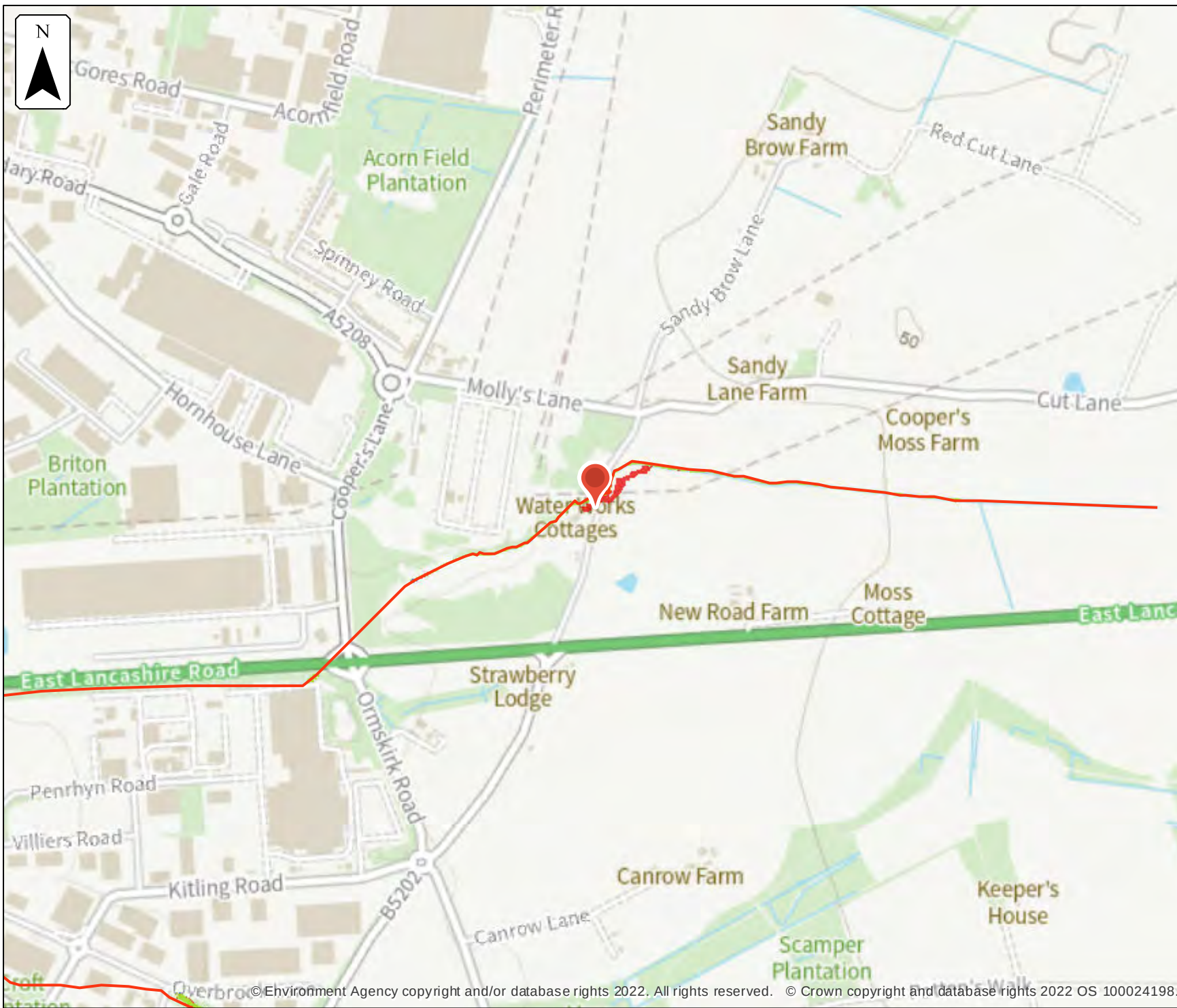
No defences exist climate change

Label	Modelled location ID	Easting	Northing	1.0% AEP (+30%)		1.0% AEP (+35%)		1.0% AEP (+70%)		0.1% AEP (+30%)	
				Level	Flow	Level	Flow	Level	Flow	Level	Flow
1	992577	343674	397031	36.36	1.22	36.38	1.26	36.56	1.60	36.70	1.87
2	992502	343719	397052	36.54	1.12	36.55	1.17	36.68	1.47	36.80	1.76
3	992501	343804	397085	37.36	0.97	37.38	1.01	37.43	1.23	37.49	1.56
4	992488	343881	397099	38.67	0.83	38.68	0.87	38.72	1.05	38.79	1.39
5	992512	343963	397160	40.38	0.67	40.38	0.69	40.43	0.83	40.51	1.17
6	992550	344035	397197	42.28	0.57	42.28	0.56	42.33	0.68	42.35	0.70
7	992509	344131	397260	44.34	0.54	44.35	0.56	44.39	0.70	44.45	0.90
8	992480	344213	397246	45.17	0.54	45.18	0.56	45.27	0.70	45.35	0.99
9	992591	344328	397232	46.09	0.54	46.10	0.56	46.15	0.70	46.25	0.99
10	992535	344402	397224	46.66	0.54	46.67	0.56	46.73	0.70	46.83	0.99

Data in this table comes from the Knowsley Brook 2017 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.



No defences exist modelled fluvial extent

Location (easting/northing)
344032/397177

Scale Created
1:10,000 21 Oct 2022

Model name
Knowsley Brook 2017

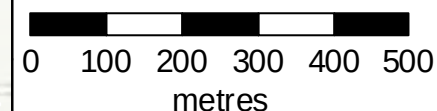
 Selected location

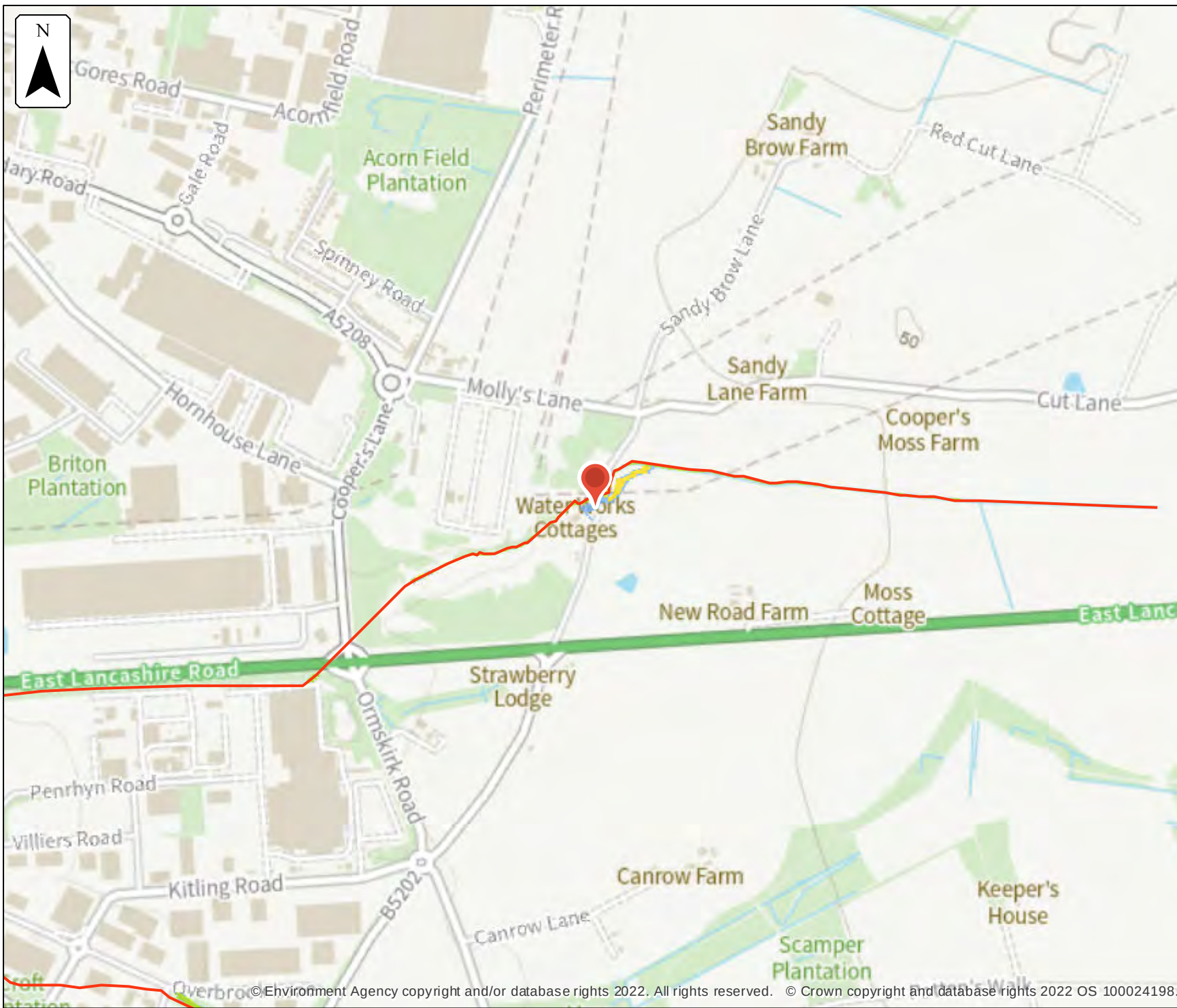
 Main river

Modelled flood extent

-  5% AEP
-  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





No defences exist climate change modelled fluvial extent

Location (easting/northing)
344032/397177

Scale Created
1:10,000 21 Oct 2022

Model name
Knowsley Brook 2017

 Selected location

 Main river

Modelled flood extent

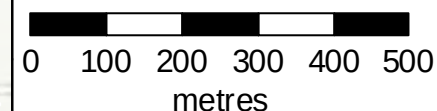
 1.0% AEP (+30%)

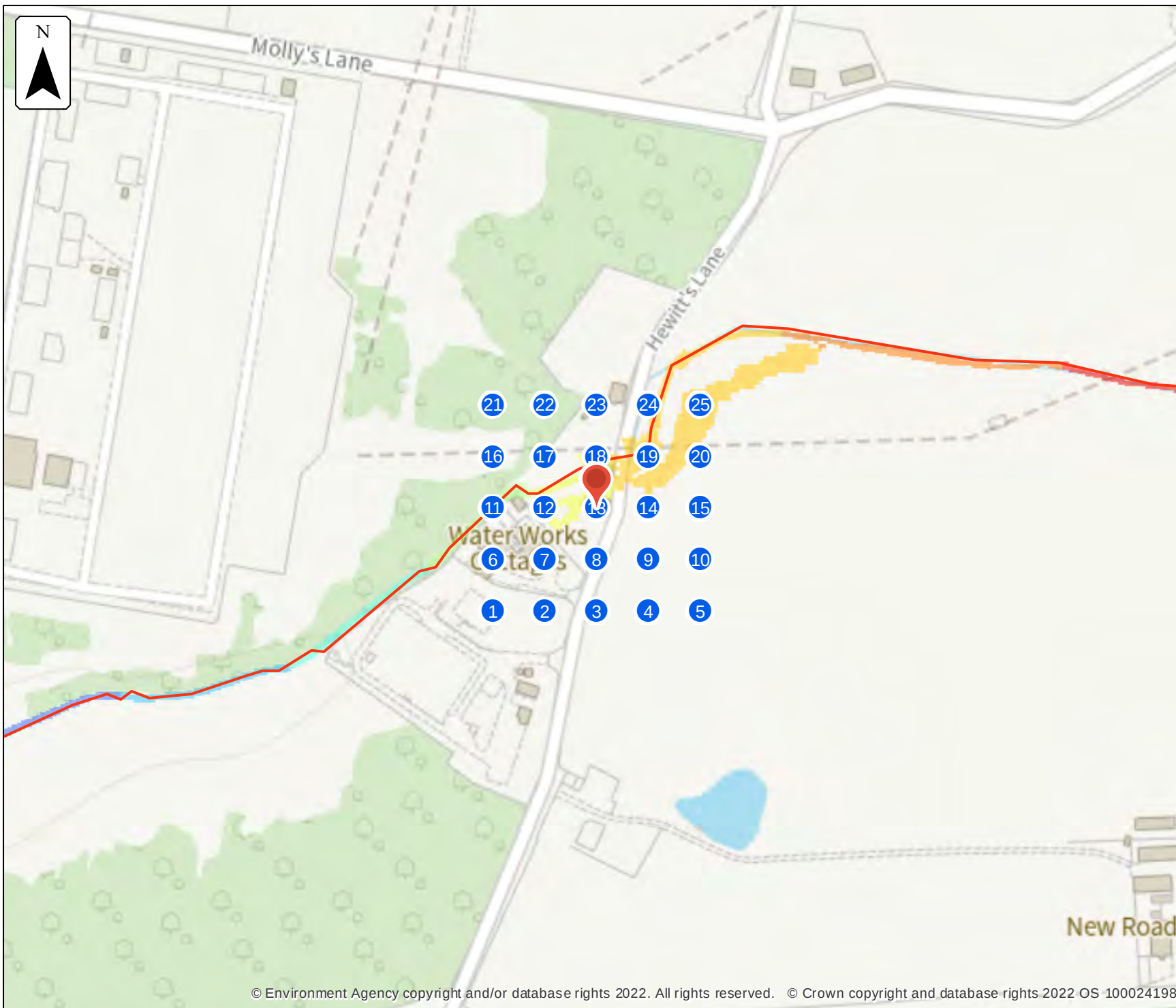
 1.0% AEP (+35%)

 1.0% AEP (+70%)

 0.1% AEP (+30%)

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





No defences exist modelled fluvial extent and height

Location (easting/northing)
344032/397177

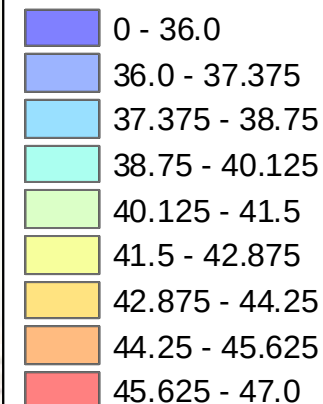
Scale Created
1:2,500 21 Oct 2022

Model name
Knowsley Brook 2017

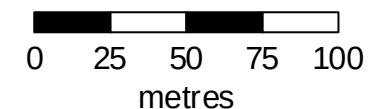
 Selected location

 Main river

Modelled 2D grid
Water level in mAOD



This map shows the
0.1% AEP height data



Sample point data

No defences exist

Label	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
1	343982	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	344007	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	344032	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	344057	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	344082	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	343982	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	344007	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
8	344032	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
9	344057	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	344082	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
11	343982	397177	0.22	40.80	0.25	40.84	0.26	40.86	0.27	40.87	0.29	40.91	0.34	40.99
12	344007	397177	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.07	42.61
13	344032	397177	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.01	42.62
14	344057	397177	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	344082	397177	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
16	343982	397202	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData

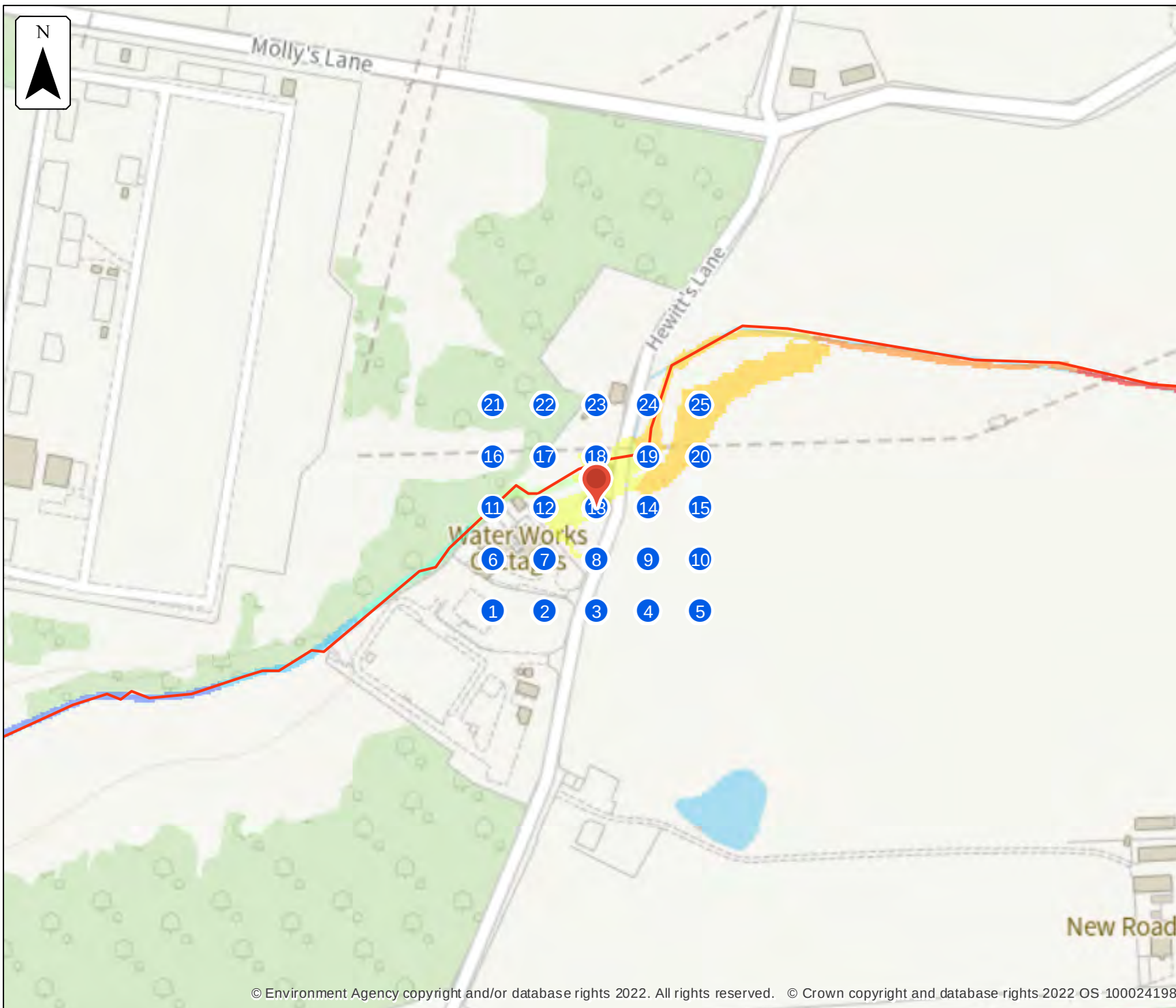
Label	Easting	Northing	5% AEP		2% AEP		1.33% AEP		1% AEP		0.5% AEP		0.1% AEP	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height	Depth	Height
17	344007	397202	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
18	344032	397202	0.79	42.07	0.83	42.12	0.85	42.14	0.86	42.16	0.89	42.20	0.97	42.29
19	344057	397202	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.08	43.23
20	344082	397202	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
21	343982	397227	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
22	344007	397227	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
23	344032	397227	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
24	344057	397227	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	344082	397227	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData	0.16	43.33

Data in this table comes from the Knowsley Brook 2017 model.

Height values are shown in mAOD, and depth values are shown in metres.

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

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.



No defences exist climate change modelled fluvial extent and height

Location (easting/northing)
344032/397177

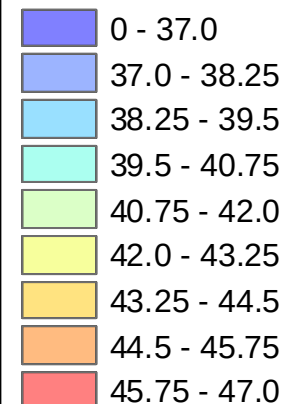
Scale Created
1:2,500 21 Oct 2022

Model name
Knowsley Brook 2017

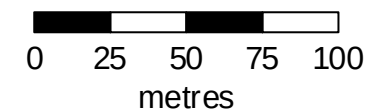
 Selected location

 Main river

Modelled 2D grid
Water level in mAOD



This map shows the
0.1% AEP +30% height data



Sample point data

No defences exist climate change

Label	Easting	Northing	1% AEP (+30%)		1% AEP (+35%)		1% AEP (+70%)		0.1% AEP (+30%)	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height
1	343982	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
2	344007	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
3	344032	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
4	344057	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
5	344082	397127	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
6	343982	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
7	344007	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
8	344032	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
9	344057	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
10	344082	397152	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
11	343982	397177	0.31	40.94	0.31	40.94	0.34	40.98	0.38	41.05
12	344007	397177	NoData	NoData	NoData	NoData	NoData	NoData	0.11	42.68
13	344032	397177	NoData	NoData	NoData	NoData	NoData	NoData	0.09	42.72
14	344057	397177	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
15	344082	397177	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
16	343982	397202	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData

Label	Easting	Northing	1% AEP (+30%)		1% AEP (+35%)		1% AEP (+70%)		0.1% AEP (+30%)	
			Depth	Height	Depth	Height	Depth	Height	Depth	Height
17	344007	397202	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
18	344032	397202	0.93	42.24	0.93	42.24	0.96	42.28	0.98	42.31
19	344057	397202	NoData	NoData	NoData	NoData	0.04	43.17	0.11	43.27
20	344082	397202	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
21	343982	397227	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
22	344007	397227	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
23	344032	397227	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
24	344057	397227	NoData	NoData	NoData	NoData	NoData	NoData	NoData	NoData
25	344082	397227	NoData	NoData	NoData	NoData	0.10	43.27	0.22	43.38

Data in this table comes from the Knowsley Brook 2017 model.

Height values are shown in mAOD, and depth values are shown in metres.

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

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that 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

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 Cumbria and Lancashire Environment Agency team at inforequests.cmblnc@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