

Former Merseyside Dogs Home

East Halewood

Flood Risk Assessment

January 2025

Project Information	
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Document History		
Revision	Date	Comment
01	06/05/2023	First issue
02	12/05/2023	Second issue – Updated with revised development proposals
03	06/06/2024	Third issue – Updated to include latest development plan
04	18/06/2024	Fourth issue - Updated to include latest development plan
05	29/01/2025	Fifth issue – Updated with latest layout and site levels.

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This report will remain valid for a period of twelve months (from the date of last issue) after which the source data should be reviewed in order to reassess the findings and conclusions on the basis of latest available information.

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Introduction

Waterco has been commissioned to undertake a Flood Risk Assessment in relation to a proposed residential development at the Former Merseyside Dogs Home, Greensbridge Lane, Halewood, L35 1QH.

The purpose of this report is to outline the potential flood risk to the site, the impact of the proposed development on flood risk elsewhere, and the proposed measures which could be incorporated to mitigate the identified risk. This report has been prepared in accordance with the guidance contained in the National Planning Policy Framework (NPPF) and the National Planning Practice Guidance (NPPG): Flood Risk and Coastal Change.

This Flood Risk Assessment has been supported by and should be read in conjunction with the Waterco Hydraulic Modelling Report (document reference 14506-25072-HMR-3).

Existing Conditions

The site covers an area of approximately 1.26ha and is located at National Grid Reference (NGR): 345615, 386610. A location plan and an aerial image are included in Appendix A.

Online mapping (including Google Maps / Google Streetview imagery, accessed June 2024) shows that the site comprises a residential property and a former dogs home with associated outbuildings, access, parking and landscaped areas.

The site is bordered by Cartbridge Lane to the north, Greensbridge Lane with agricultural land beyond to the east, and Netherley Brook to the south-west. Access to the site is provided from Greensbridge Lane.

Local Topography

A topographical survey has been undertaken by Ian Strachan Ltd in January 2022. The topographical survey shows that the site slopes from 9.13 metres Above Ordnance Datum (m AOD) in the north-east to 7.67m AOD in the south-west.

Topographic levels to m AOD have also been derived from a 1m resolution Environment Agency (EA) composite 'Light Detecting and Ranging' (LiDAR) Digital Terrain Model (DTM). The LiDAR levels generally reflect those shown on the topographical survey. Topographical information is included as Appendix B.

Ground Conditions

With reference to the British Geological Survey (BGS) online mapping (1:50,000 scale), the majority of the site is underlain by superficial deposits of Alluvium, generally comprising clay, silt, sand and gravel. The north-eastern extent of the site is underlain by Devensian Till, comprising of Diamicton. The superficial deposits are identified as being underlain by the Wilmslow Sandstone Formation.

The geological mapping is available at a scale of 1:50,000 and as such may not be accurate on a site-specific basis.

The closest historical BGS borehole record (BGS reference: SJ48NE18) is located 20m east of the site and is included in Appendix C together with a borehole location plan. The borehole record identifies:

- Topsoil from ground level to 0.15 metres below ground level (m.bgl);
- Sand and gravel from 0.15m.bgl to 1.01m.bgl;
- Brown clay and stone from 1.01m.bgl to 30.48m.bgl;
- Sand and gravel from 30.48m.bgl to 32.31m.bgl;
- Red sandstone from 32.21m.bgl to 152.40m.bgl.

Groundwater was observed at 22.40m.bgl.

The EA's 'Source Protection Zones' data, viewed from MAGIC's online mapping [accessed June 2024], indicates that the southern extent of the site is located within a Zone 1 Inner Groundwater Source Protection Zone. This zone is defined by a travel time of 50-days or less from any point within the zone at, or below, the water table. Additionally, the zone has a minimum a 50-metre radius. The northern extent of the site is identified within a Zone 2 Outer Groundwater Protection Zone. This zone is defined by the 400-day travel time from a point below the water table. Additionally, this zone has a minimum radius of 250 or 500 metres, depending on the size of the abstraction.

The Cranfield University 'Soilscapes' map [accessed June 2024] indicates that the site is underlain by '*slowly permeable, seasonally wet, loamy and clayey soils.*'

Local Drainage

Public sewer records have been obtained from United Utilities (UU) and are included in Appendix D. The UU sewer records show that there is a public foul rising main immediately east of the site.

The public sewer records also show a network of public foul and surface water sewers within the residential area west of the site and beyond Netherley Brook.

Development Proposals

The proposed development is for the erection of 29no. residential properties with associated driveways, access roads and gardens. A proposed development plan is included in Appendix E.

As part of the flood mitigation proposals for the proposed development, all developable areas will be raised to a minimum of 8.815m AOD, which entails raising ground levels by a maximum of approximately 1m. A proposed site levels plan is included in Appendix E.

Flood Zone Classification & Policy Context

The EA 'Flood Map for Planning', included in Appendix F, shows that the north-western extent of the site is located within Flood Zone 3 – an area considered to be at flood risk with a 1% (1 in 100) or greater annual probability of fluvial flooding.

The southern extent of the site and areas adjacent to Flood Zone 3 in the northern extent of the site are located within Flood Zone 2 – an area considered to be at flood risk with between a 1% and 0.1% (1 in 1000) annual probability of flooding. The remainder of the site is located outside of the extreme flood extent (Flood Zone 1), meaning it has a less than 0.1% annual probability of flooding.

In accordance with Annex 3 of the NPPF, residential developments are considered to be 'more vulnerable'. Table 2 of the NPPG: Flood Risk and Coastal Change, states that 'more vulnerable' development is considered appropriate within Flood Zones 1 and 2. However, the Exception Test must be satisfied for more vulnerable development within Flood Zone 3.

For the Exception Test to be passed it should be demonstrated that:

- the development would provide wider sustainability benefits to the community that outweigh flood risk, and
- the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

This report details the flood risk to the site and the mitigation measures which could be carried out to ensure that the development will be safe for its lifetime.

Local Policy

The Knowsley Council Local Plan Core Strategy (adopted January 2016) contains the following policy relating to flood risk:

'Policy CS24 – Managing Flood Risk

- 1) New development that may cause an unacceptable risk of flooding on the site or elsewhere will not be permitted.*
- 2) New development should preferably be located in areas of low probability of flooding. New development in areas of medium or high flood risk will only be permitted if evidence has been submitted demonstrating that the development could not be practicably located in an area of lower flood risk and if applicable the 'exception test' has been complied with, in accordance with national guidance.*
- 3) All development which is within or otherwise affects an area of flood risk or is larger than one hectare in size shall be accompanied by a site-specific Flood Risk Assessment (FRA).*
- 4) New development shall include flood mitigation measures, where necessary, to manage flood risk*

associated with or caused by the development. These measures shall be derived from the Strategic Flood Risk Assessment (SFRA), relevant FRA(s) or a local strategy for flood risk management, and;

- a) Be designed to contribute to the biodiversity of the borough unless it can be demonstrated that this would not be technically feasible;*
 - b) Incorporate s Sustainable Drainage System;*
 - c) Be fully described in the planning application; and*
 - d) Be funded by the developer, including long term maintenance.*
- 5) The drainage of the new development shall be designed to reduce surface water run-off rates to those associated with a green-field site by treating it as its source. The chosen method of implementation should take account of site size, ground contamination or conditions, and potential damage to adjacent buildings or sites.*
- 6) Further guidance on these issues will be provided in a proposed Supplementary Planning Document.'*

The Knowsley Council and Sefton Council Strategic Flood Risk Assessment (SFRA) (June 2009), Knowsley Metropolitan Borough Council Level 2 SFRA (October 2012) and the Knowsley Council Preliminary Flood Risk Assessment (PFRA) (June 2011) have been reviewed and inform this report.

Consultation

A pre-planning opinion request was submitted to the EA in January 2023. In their response (Appendix F), the EA have stated that:

'Our basic constraint check has identified the following environmental issues on your site:

- The site is located within Flood Zone 3 defined as having a high probability of flooding in the National Planning Practice Guidance. The development proposal is for a 'more vulnerable' use.*
- The proposed development site is bounded by Netherley brook which is designated as a Main River watercourse.*
- The proposed development is within an area of Principal Aquifer bedrock.*
- The proposed development is within Source Protection Zones 1 and 2.*

Based on this, the development raises some environmental concerns that you will need to address as part of your planning application. Further work will be needed to show how these issues can be satisfactorily addressed to ensure no environmental impacts.'

Sources of Flooding and Probability

Fluvial

The nearest watercourse is Netherley Brook which is located immediately west of the site. Netherley Brook flows south-east in this location to its confluence with the River Mersey approximately 4.6km from the site.

Other watercourses in the area include an unnamed watercourse which joins Netherley Brook immediately west of the site. The unnamed watercourse serves a limited catchment area and appears to drain nearby agricultural and urban land.

Fluvial flooding could occur if Netherley Brook overtopped its banks during or following an extreme rainfall event. Flooding could also occur from a blockage at the inlet of the Cartbridge Lane road culvert immediately north-west of the site, or the Greensbridge Lane road culvert immediately south-east of the site.

The development site benefits from flood defences in the form of an earth bund located along the sites western boundary.

The EA 'Historic Flood Risk' map (Appendix F) indicates that there are no records of historical flooding at or near to the site.

Modelled Outputs

Modelled outputs for Netherley Brook have been obtained from the EA and updated by Waterco in May 2024. The modelled output data is taken from the EA 'Netherley, Halewood and Woodend' (2012) model. The model has been updated by Waterco to; investigate flood risk in the event of a blockage of nearby hydraulic structures; and simulate a proposed development scenario with site levels raised to 8.74m AOD (as required to create a flood free development platform). The modelled outputs have been processed to create flood depth, velocity, hazard and water level mapping, provided as Appendix G.

Two modelled scenarios have been assessed, namely the existing and proposed scenarios. The existing scenario represents the site with its existing site levels. The proposed scenario represents the site with a development platform raised to 8.74m AOD.

Modelled outputs have been processed for the existing and proposed scenarios for the 5% Annual Exceedance Probability (AEP) event, 1% AEP event, 1% AEP plus 44% CC event and the 0.1% AEP event.

Structure blockages have been assessed at two locations with respect to the 1% AEP plus 44% CC event for both the existing and proposed site layout scenarios. The following structure blockages have been considered: a 33% blockage of a large arch culvert upstream of the site beneath Cartbridge Lane (BL1); and a 33% blockage of a large culvert downstream of the site beneath Greensbridge Lane (BL2).

Existing Scenario

As shown in Figure 1, during the 5% AEP event, the majority of the site remains flood free. Flooding is estimated to the site's western boundary, however, is contained within the channel of Netherley Brook.

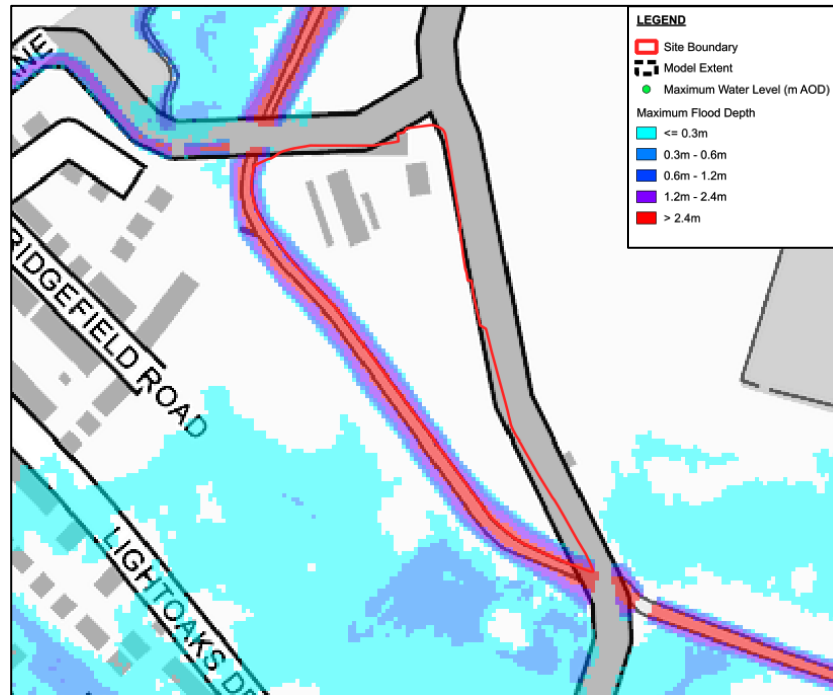


Figure 1 – Existing 5% AEP Event – Maximum Flood Depth (m)

As shown in Figure 2, during the 1% AEP event, the north-western extent of the site is estimated to flood. The flooding mechanism is such that flood flows spill out of channel north of Cartbridge Lane and flow overland, across Cartbridge Lane and onto the site. Flood waters are contained on site by the earth bund on the western site boundary. A maximum water level of 8.31m AOD is estimated with a maximum flood depth of 240mm in the north-western extent of the site. The majority of the site is flood free.

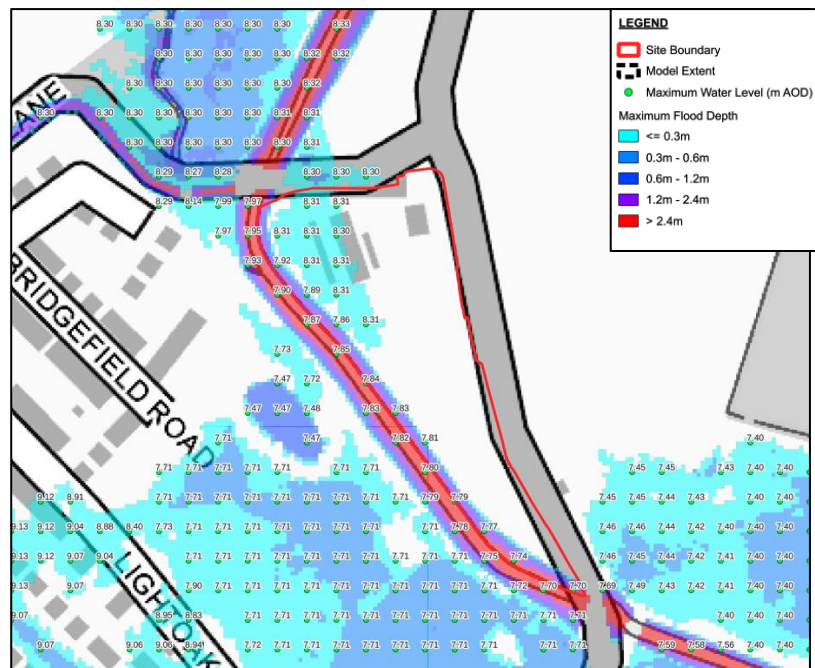


Figure 2 – Existing 1% AEP Event – Maximum Water Levels (m AOD)

As shown in Figure 3, during the 1% AEP plus 44% CC event, the southern and western extents of the site are estimated to flood. A maximum flood level of 8.57m AOD is estimated with a maximum flood depth of 470mm in the north-western extent.

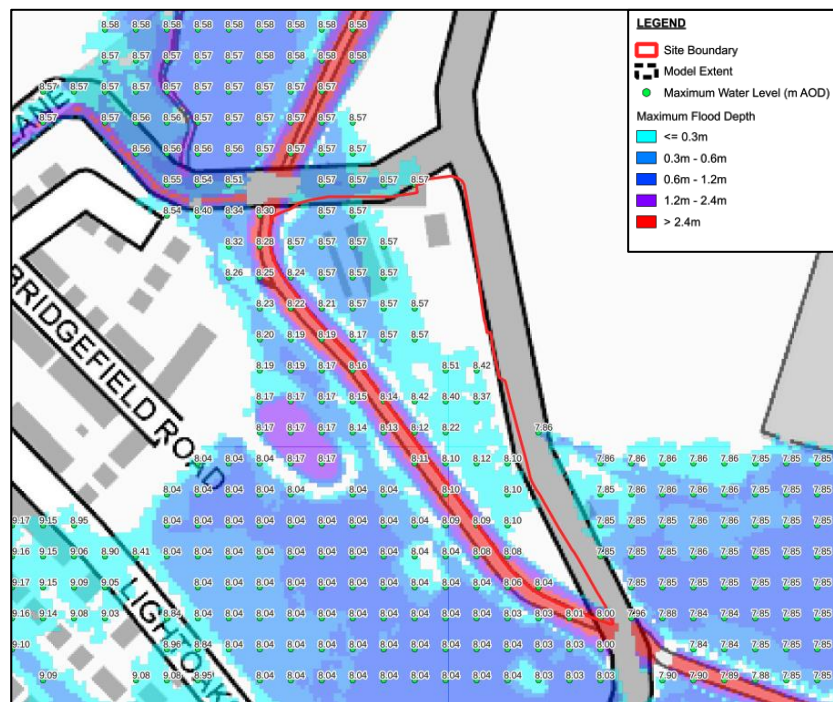


Figure 3 – Existing 1% AEP + 44% CC Event – Maximum Water Levels (m AOD)

As shown in Figure 4, during the 0.1% AEP event, the majority of the site is estimated to flood. A maximum flood level of 8.70m AOD is estimated with a maximum flood depth of 640mm in the north-western extent.

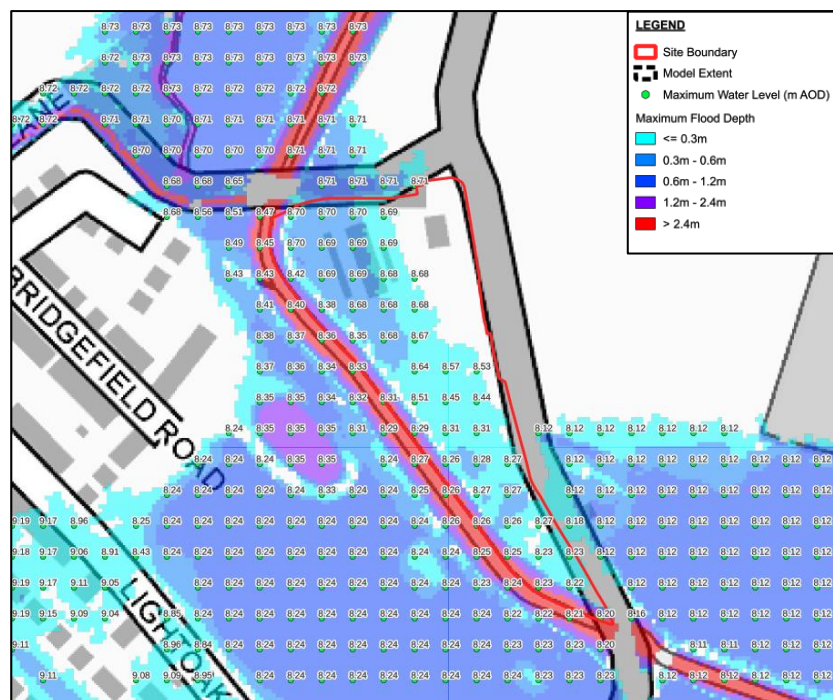


Figure 4 – Existing 0.1% AEP Event – Maximum Water Levels (m AOD)

Existing Scenario – Cartbridge Lane Blockage

As shown in Figure 5, during a 33% blockage of the Cartbridge Lane culvert coinciding with the 1% AEP plus 44% CC event, the majority of the site is estimated to flood. A maximum flood level of 8.67m AOD is estimated with a maximum flood depth of 610mm in the north-western extent. Flood depths, levels and extents remain similar to the ‘normal conditions’ (without blockage) scenario.

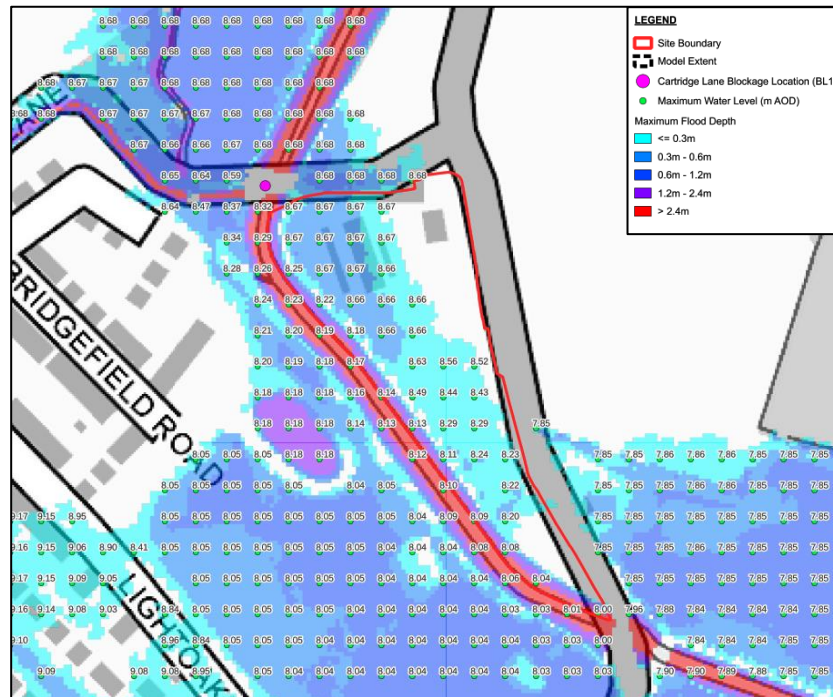


Figure 5 – Existing 1% AEP + 44% CC Event – Maximum Water Levels (m AOD) – Blockage Scenario

Existing Scenario – Greensbridge Lane Blockage

As shown in Figure 6, during a 33% blockage of the Greensbridge Lane culvert coinciding with the 1% AEP plus 44% CC event, the majority of the site is estimated to flood. A maximum flood level of 8.65m AOD is estimated with a maximum flood depth of 590mm in the north-western extent.

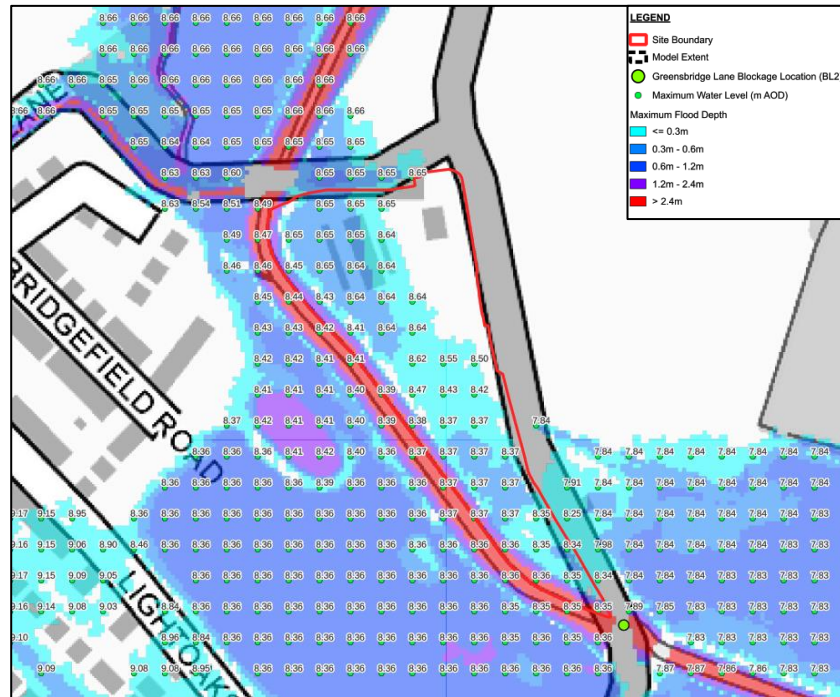


Figure 6 – Existing 1% AEP + 44% CC Event – Maximum Water Levels (m AOD) – Blockage Scenario

It can be concluded that the western and southern extents of the site are at risk from fluvial flooding. Flood depths are generally shallow, and the flooding mechanism is such that flood water enters the site in the northern extent and flows off site in the south-east. The existing bund (flood defence) along the western boundary prevents flood water from flowing from the site and into Netherley Brook.

Proposed Development Scenario

To mitigate the risk of flooding, site levels will be raised above 8.74m AOD and above the 0.1% AEP flood level.

As shown in Figure 7, raising the development platform to 8.74m AOD (or greater) ensures the development is flood free during all events up to and including the 0.1% AEP event. The proposed land raising prevents flood flows from entering the site in the north with flood water directed back into the channel of Netherley Brook. The impact of land raising on flood risk elsewhere is considered in the following sections of this report.

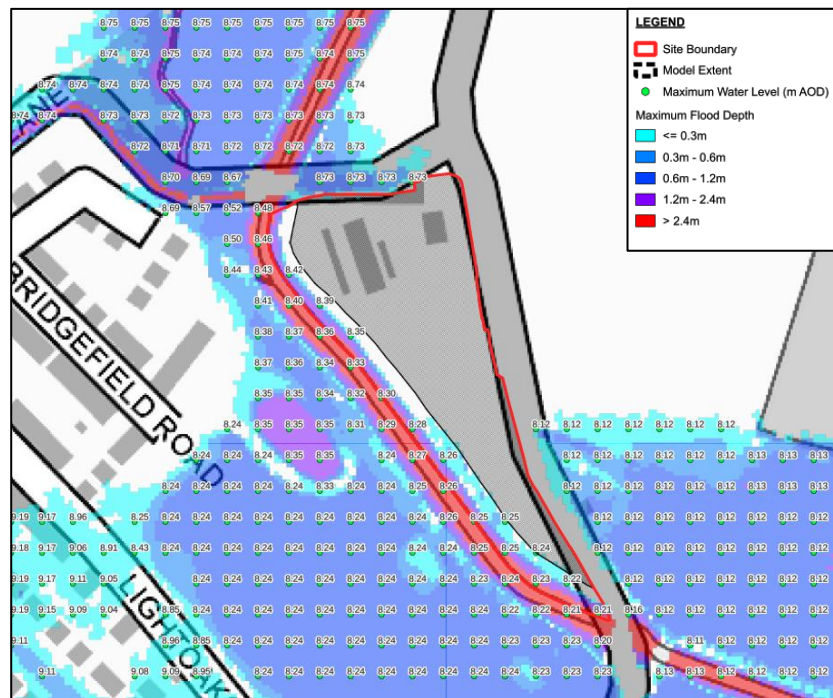


Figure 7 – Proposed Scenario - 0.1% AEP Event – Maximum Water Levels (m AOD)

Tidal

The site is located approximately 4.6km from the Mersey estuary. The EA 'Flood Map for Planning' does not identify any tidal flood risk from the River Mersey to the site.

The EA 'Historic Flood Risk' map (Appendix F) shows that there are no records of tidal flooding affecting the site.

Tidal flood levels and flood extent mapping for the Mersey Estuary have been obtained from the EA. The flood levels are taken from the EA Mersey Estuary 2016 tidal model.

During the present day 0.1% AEP event, the maximum water level is estimated as 7.2m AOD. The site (minimum level of 7.67m AOD) is therefore flood free during all events up to and including the 0.1% AEP tidal event.

Climate Change Scenario

The flood levels for the River Mersey provided by the EA do not include an allowance for climate change. In the absence of modelled data to assess climate change scenarios, a qualitative assessment has been made using the climate change guidance detailed in Table 1 of the GOV.UK 'Flood risk assessments: climate change allowances' document.

Using the 'Upper End' sea level rise allowance, water levels increase by 1.29m when applying climate change to the year 2123 (from a base year of 2016). By applying a 1.29m uplift to account for 100 years climate change on the present day (year 2016) 0.1% AEP flood level of 7.2m AOD, a flood level of 8.49m AOD is estimated for the 0.1% AEP year 2123 event.

When accounting for the minimum proposed site level of 8.74m AOD, the site will be flood free during all tidal events up to and including the 0.1% AEP year 2123 event.

It can therefore be concluded that the risk of tidal flooding is very low.

Surface Water

Surface water flooding occurs when rainwater does not drain away through the normal drainage system or soak into the ground. It is usually associated with high intensity rainfall events but can also occur with lower intensity rainfall or melting snow where the ground is saturated, frozen or developed, resulting in overland flow and ponding in depressions in topography. Surface water flooding can occur anywhere without warning. However, flow paths can be determined by consideration of contours and relative levels.

The EA 'Flood Risk from Surface Water' map (Appendix F) indicates that the site is at very low risk of surface water flooding, meaning it has a less than 0.1% annual probability of flooding.

There are no records of surface water flooding at or near to the site. There are no distinct flow routes in the area that would direct any potential surface water flooding towards the site.

It can therefore be concluded that the risk of surface water flooding is very low.

Sewer

Flooding from sewers can occur when a sewer is overwhelmed by heavy rainfall, becomes blocked, is damaged, or is of inadequate capacity. Flooding is mostly applicable to combined and surface water sewers.

United Utilities sewer records, provided as Appendix D, identify a public foul rising main immediately east of the site within Greensbridge Lane. Flooding from rising mains is rare as flows are controlled by the upstream pumping station. As such, the risk of flooding from the foul rising main in Greensbridge Lane is very low.

The public sewer records also show a network of public foul and surface water sewers within the residential area west of the site and beyond Netherley Brook. Any potential flooding arising from the sewer network in the residential area west of the site would be intercepted by Netherley Brook and would not affect the site.

The SFRA and PFRA contain no records of sewer flooding affecting the site. It can therefore be concluded that the risk of sewer flooding is very low.

Groundwater

Groundwater flooding occurs when water levels underneath the ground rise above normal levels. Prolonged heavy rainfall soaks into the ground and can cause the ground to become saturated. This results in rising groundwater levels which leads to flooding above ground.

As described above, a BGS borehole record located 20m east of the site records groundwater at 22.4m.bgl. The PFRA 'Areas Susceptible to Groundwater Flooding' map (Appendix H) shows that the site is not located in an area susceptible to groundwater flooding.

It can therefore be concluded that the risk of groundwater flooding is very low.

Artificial Sources

There are no canals within the vicinity of the site. The EA 'Flood Risk from Reservoirs' map (Appendix F) shows that the site is at risk from a failure of the following reservoirs when Netherley Brook is also in flood:

Table 1 - EA Flooding from Reservoirs

Name	Location (NGR)	Owner
Pex Hill Number 2 Reservoir	350038, 388921	United Utilities
Pex Hill Number 3 Reservoir	350143, 388958	United Utilities
Prescot Number 3 Reservoir	347115, 393822	United Utilities
Prescot Number 4 Reservoir	346800, 394000	United Utilities
Prescot Number 5 Reservoir	346600, 393500	United Utilities

The EA state that reservoir flooding is extremely unlikely to happen. All large reservoirs must be inspected and supervised by reservoir panel engineers. As the enforcement authority for the Reservoirs Act 1975 in England, the EA ensure that reservoirs are inspected regularly, and essential safety work is carried out.

It can therefore be concluded that the risk of flooding from artificial sources is very low.

Summary of Potential Flooding

It can be concluded that fluvial flooding is the main potential source of flood risk to the site. The associated risk has been used to inform mitigation design.

Mitigation

The site is identified at risk of fluvial flooding from Netherley Brook with a flood level of 8.70m AOD during the 0.1% AEP event. A maximum flood level of 8.57m AOD is estimated during the 1% AEP plus 44% CC event.

All developable areas will be raised to a minimum of 8.815m AOD to create a flood free development platform. A minimum site level of 8.815m AOD provides 245mm freeboard above the 1% AEP plus 44% CC flood level.

Finished floor levels will be set at a minimum level of 9.17m AOD. This level provides 600mm freeboard above the 1% AEP plus 44% CC flood level, 470mm freeboard above the 0.1% AEP flood level and 500mm freeboard above the 1% AEP plus 44% CC including structure blockage flood level.

Safe Access / Egress

Safe access / egress is available from Greensbridge Lane to the east of the site heading north. Greensbridge Lane east and north of the site is shown to be flood free. A safe access / egress route plan is included in Appendix I.

Impact on Flood Risk Elsewhere

The proposed development includes raising ground levels to form a development platform above 8.74m AOD. The impact on flood risk elsewhere as a result of raising ground levels has been assessed by comparing the existing and proposed development modelling scenarios. Water level difference mapping showing any variance in water level (+/- 5mm) is included in Appendix G. The flood depth difference mapping shows that during all events the development does not increase flood risk to third party properties or roads.

Flooding only occurs at the site as flows within Netherley Brook exceed the capacity of the Cartbridge Lane Road Bridge. Flood flows back up behind Cartbridge Lane Bridge, overspill onto Cartbridge Lane and enter the site from the northern boundary. Flood flows are then retained on site by an earth bund along the western boundary. Flood depths and levels increase on site to a point where flows return to Netherley Brook in the southern extent of the site. The earth bund on the western boundary of the site prevents flows from re-entering Netherley Brook immediately downstream of Cartbridge Lane. The proposed site levels will be profiled so that flows entering the site from the northern boundary can re-enter Netherley Brook in the northern extent of the site. Figure 8 shows the flood flow routes post-development.

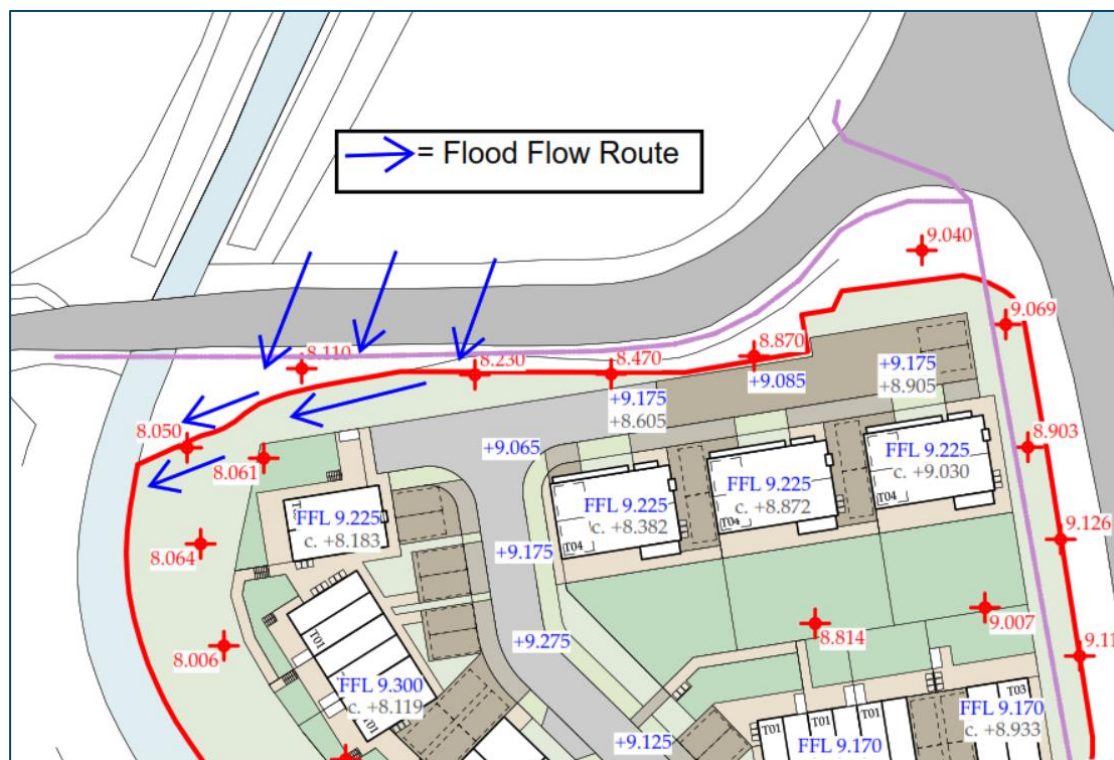


Figure 8 – Post Development Flood Flow Routes

It can therefore be concluded that the impact on flood risk elsewhere as a result of the development is negligible.

Sequential and Exception Test

Sequential Test

The NPPF requires the Local Authority to apply the Sequential Test in consideration of new development. The aim of the Test is to steer new development to areas at the lowest probability of flooding. The Sequential Test is based on the EA Flood Zones and information contained within the SFRA.

The site is partly located in Flood Zone 1, with lower areas of the site in Flood Zones 2 and 3. The development site is located adjacent to an existing residential area and provides opportunity for re-development of a brownfield site.

The flood risk to the site will be removed post-development by raising site levels above 8.74m AOD. As such, it is considered that the Sequential Test is passed.

Exception Test

For the Exception Test to be passed it must be demonstrated that:

- A. the development would provide wider sustainability benefits to the community that outweigh flood risk, and
- B. the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

With reference to point (a) above, the proposed development will contribute to the Council's housing objectives and promotes development of brownfield sites.

With reference to point (b) above, the flood risk to the site will be managed by raising site levels to create a flood free development platform. The proposed development does not increase flood risk elsewhere.

Conclusions

The proposed development is for the erection of 29no. residential properties with associated driveways, access roads and gardens.

The Environment Agency 'Flood Map for Planning' shows that the north-western extent of the site is located within Flood Zone 3 – an area considered to be at flood risk with a 1% (1 in 100) or greater annual probability of fluvial flooding. The sites southern extent of the site is located within Flood Zone 2 – an area considered to be at flood risk with between a 1% and 0.1% (1 in 1000) annual probability of flooding. The remainder of the site is located outside of the extreme flood extent (Flood Zone 1), meaning it has less than 0.1% annual probability of flooding.

Fluvial flooding from Netherley Brook is the main potential source of flood risk to the site. In order to establish the risk of fluvial flooding to the site, modelled outputs for Netherley Brook have been obtained from the EA and updated by Waterco in November 2022.

The results of the hydraulic modelling show that the site is flood free during the 5% AEP fluvial flood event. The site is at risk of flooding during all other simulated fluvial flood events up to and including the 1% AEP plus 44% CC and 0.1% AEP events. A maximum flood level of 8.57m AOD is estimated during the 1% AEP plus 44% CC event with flood depths up to 470mm, however generally less than 200mm. A maximum flood level of 8.70m AOD is estimated during the 0.1% AEP event with flood depths up to 640mm.

As part of the proposed development, site levels will be raised to a minimum of 8.815m AOD. The proposed site levels will ensure that the site will remain flood free during all fluvial flood events up to and including the 0.1% AEP event. Finished floor levels will be set at a minimum level of 9.17m AOD. This level provides 600mm freeboard above the 1% AEP plus 44% CC flood level, 470mm freeboard above the 0.1% AEP flood level and 500mm freeboard above the 1% AEP plus 44% CC including structure blockage flood level.

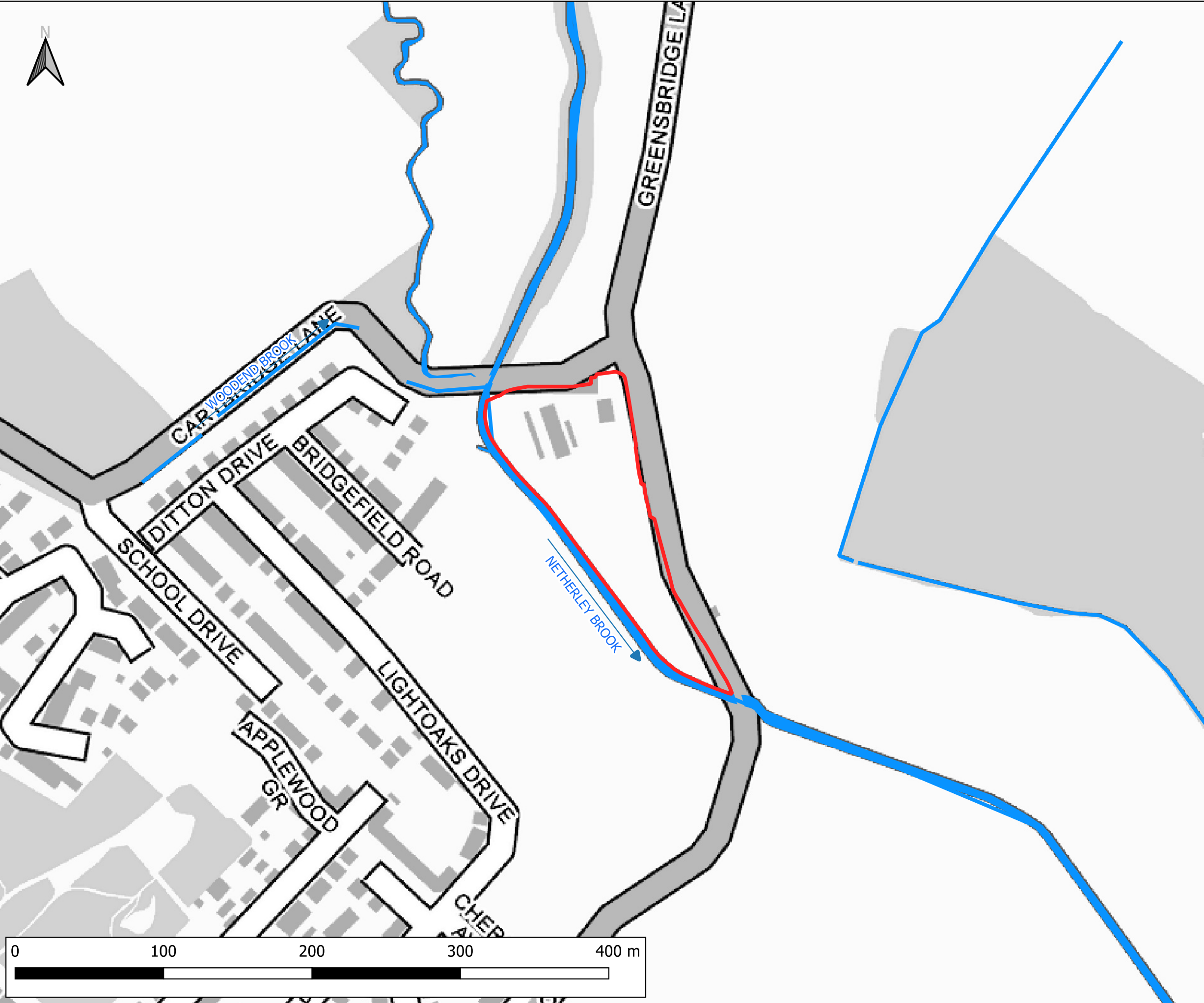
In order to quantify the impact of the proposed ground raising on flood risk elsewhere, a series of water level difference maps have been generated to establish any variations in water levels between the existing and proposed development scenarios. The water level difference mapping shows that during all events the development does not increase flood risk to third party properties or roads.

Safe access / egress is available along Greensbridge Lane heading north during all considered flood events.

Recommendations

1. Submit this Flood Risk Assessment to the Planning Authority in support of the Planning Application.

Appendix A Location Plan & Aerial Image



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Watercourses
- Waterbodies

CLIENT:

BBE Developments Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home,
East Halewood

PLOT TITLE:

Location Plan

PLOT STATUS:		DATE:	
FINAL		23-05-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AW	MW	1:2500

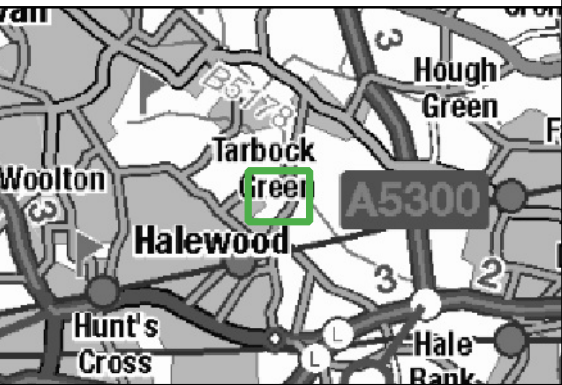
PLOT NAME:	REVISION:
14506_Location_Plan	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

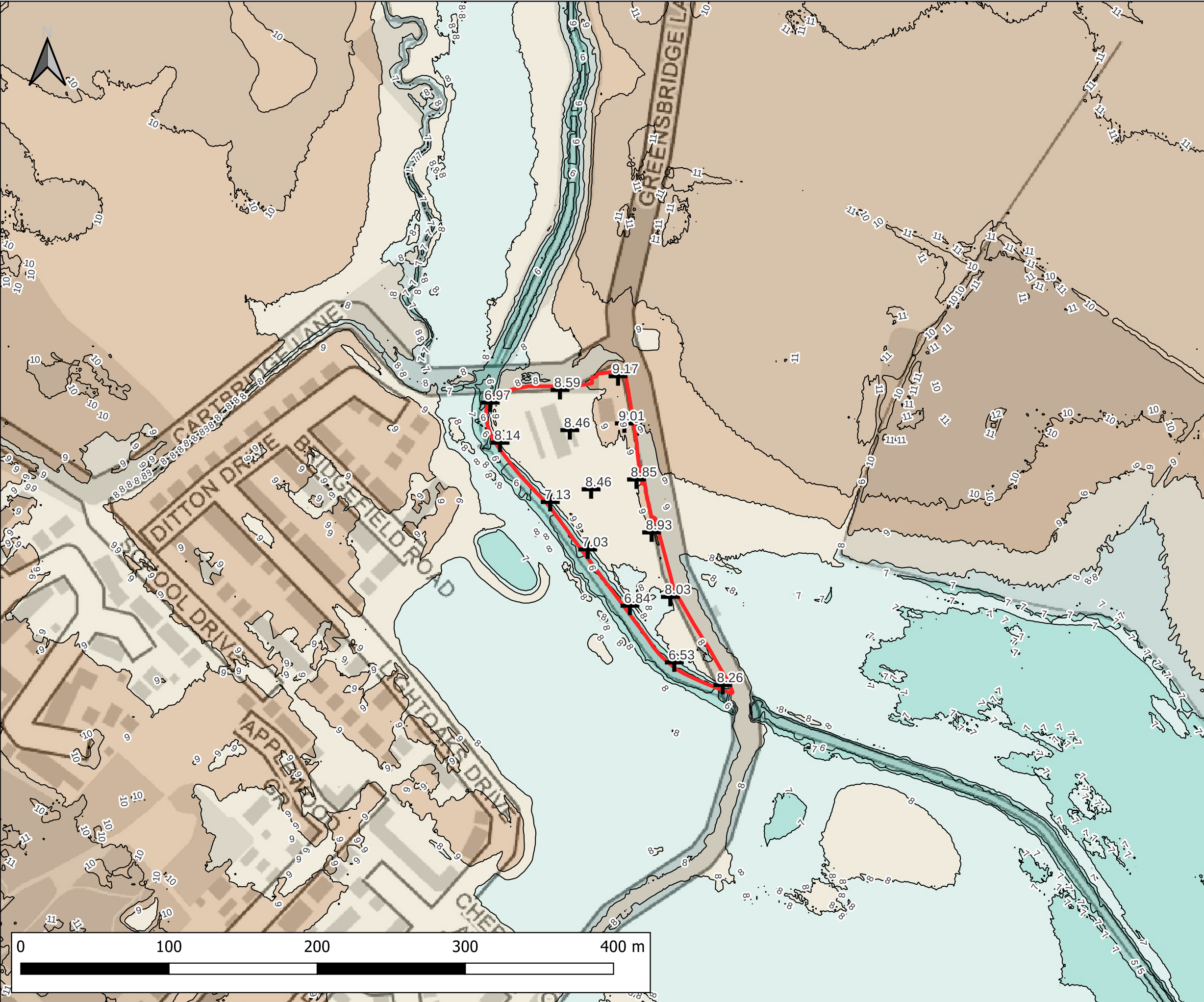
LEGEND

 Site Boundary



CLIENT:				BBE Developments Ltd			
				 www.waterco.co.uk			
SCHEME:				Former Merseyside Dogs Home, East Halewood			
PLOT TITLE:				Aerial Plan			
PLOT STATUS:		FINAL		DATE:		23-05-2024	
DRAWN:	RM	CHECKED:	AW	APPROVED:	MW	PLOT SCALE AT A3:	1:2500
PLOT NAME:						REVISION:	
14506_Aerial_Plan						-	

Appendix B Topographical Information



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary

+ Site Levels (m AOD)

Ground Elevations (m AOD)

	<= 6
	6 - 7
	7 - 8
	8 - 9
	9 - 10
	> 10

CLIENT:

BBE Developments Ltd

SCHEME:

Former Merseyside Dogs Home,
East Halewood

PLOT TITLE:

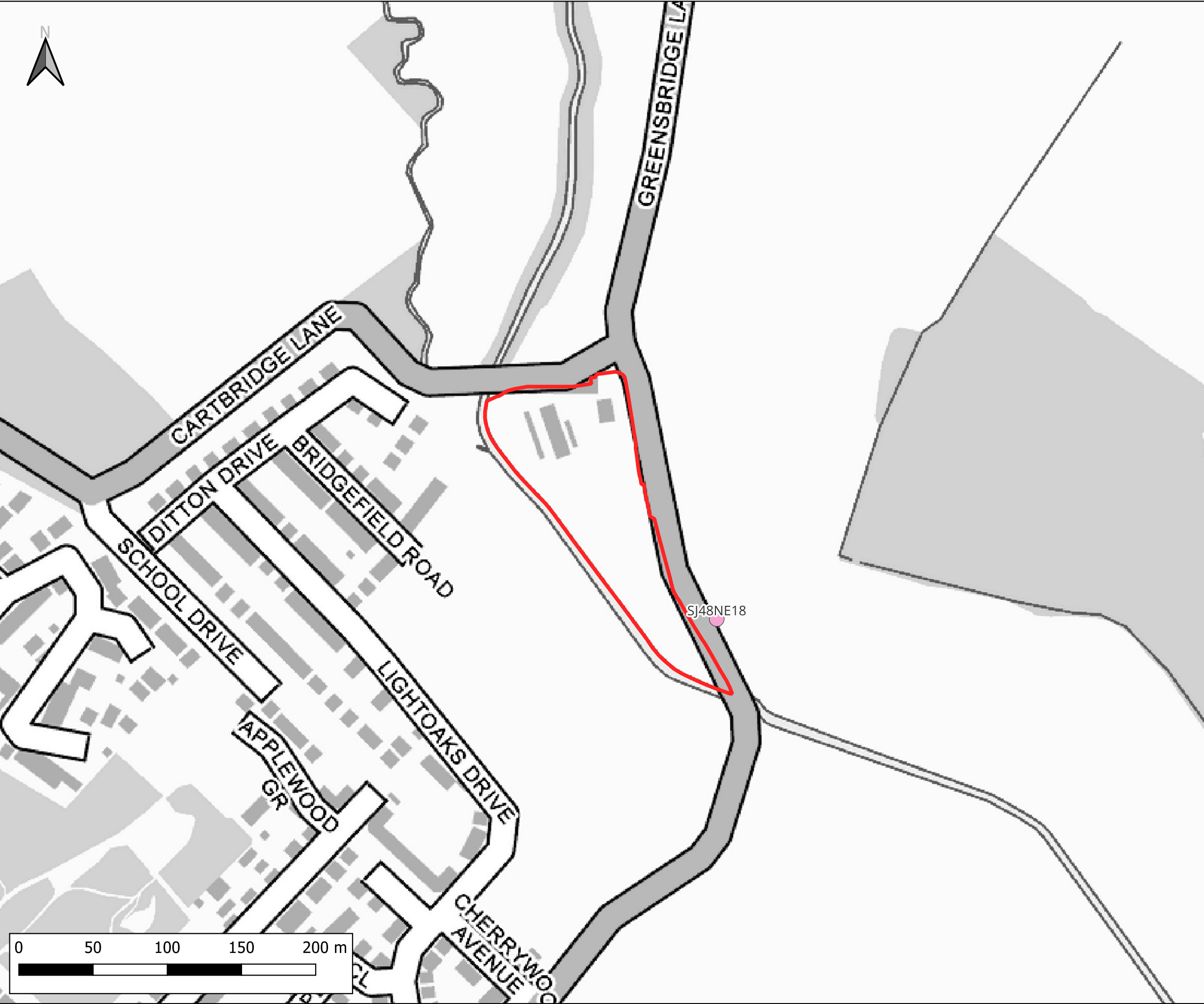
LiDAR Plan
1m Resolution
Data from Environment Agency

PLOT STATUS:		DATE:	
FINAL		20-05-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AW	MW	1:2500

PLOT NAME:	REVISION:
14506_LiDAR_Plan	-

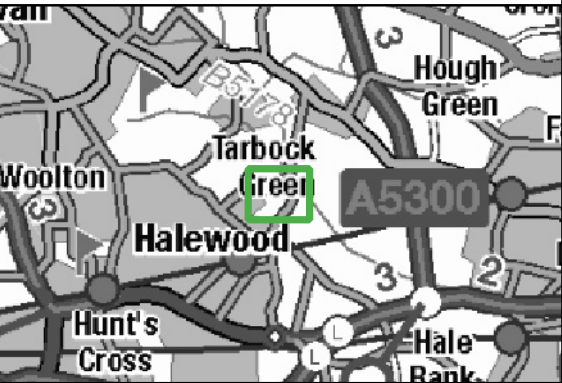
Appendix C BGS Borehole Record & Location Plan



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- BGS Historical Borehole Record



CLIENT:			
BBE Developments Ltd			
 www.waterco.co.uk			
SCHEME:			
Former Merseyside Dogs Home, East Halewood			
PLOT TITLE:			
Historical BGS Borehole Location Plan Data from British Geological Survey (BGS)			
PLOT STATUS:			DATE:
FINAL			20-05-2024
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AW	MW	1:2500
PLOT NAME:			REVISION:
14506_BGS_Borehole_Location_Plan			-

RECORD OF WELL		For Survey use only Licence No.	
At <u>Greenbridge Lane</u>		N.12033	
Pumping station (W2)		97/69B SJ 48 NE/18	
Town or Village.....		NGR 4572 8650	
County <u>Lancashire</u>			
EXACT SITE OF WELL	Six-inch sheet..... <u>11N/E</u> Six-inch National Grid sheet.....	State whether owner, tenant, builder, contractor, consultant, etc.:—	
DELETE WHICHEVER IS INAPPLICABLE	For <u>Widnes Corporation</u>		
	Address (if different from above) <u>Carlisle St. Widnes.</u>		
	Level of ground surface above sea level (O.D.).....ft.	If well top is not at ground level, state how far above: * below:	
	SHAFT.....ft.; diameter.....ft.; HEADINGS (please attach details—dimensions and directions)		
	BORE <u>5.00</u> ft.; diameter of bore: at top <u>24</u> in.; at bottom <u>18</u> in.		
	Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.).....		
	<u>See attached sheet.</u>		
	Water struck at depths of.....ft. below well top.		
TEST CONDITIONS	Rest level of water <u>73.5</u> ft. ^{above} well top. Suction at.....ft. Yield on..... hours' test pumping at.....galls. per.....with depression to.....ft. below well top.		
	Recovery to rest level in..... mins.* Capacity of pump.....g.p.h. Date of measurements.....		
	DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:		
NORMAL CONDITIONS	Make and/or type.....Motive power.....		
	Capacity.....galls. per hour. Suction at.....ft. below well top.		
	Amount pumped.....galls. per day. Estimated consumption.....galls. per week.		
	Well made by <u>J. Smith & Son (Cm) Ltd</u> Date of sinking <u>Nov '65</u>		
	Information from.....		
	ADDITIONAL NOTES ANALYSIS (please attach copy if available)		
		For Survey use only	
		Date Received <u>S.1.67</u>	
		Section 6	
		Pumping test	
		Observ. well	
		Recorder	
		E.R. log	
		Site marked on	
		1" map ☐ <u>18</u>	
		6" map ☒ <u>7</u> (7) (use symbol)	
		Record forwarded	
		to <u>N. West Dist</u>	
		date <u>2</u>	
		GEOLOGICAL SURVEY, WATER DIVISION SOUTH KENTON	

[illegible]

Appendix D United Utilities Sewer Plan

Waterco

**Waterco
Eden Court,,
Ruthin, Denbighshire
LL15 1NJ**

FAO:

How to contact us:

**United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP**

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

**Your Ref: 14506-Former Merseyside Dogs Home
Our Ref: UUPS-ORD-455839
Date: 06/01/2023**

Dear Sirs

Location: Former Merseyside Dogs Home Greensbridge Lane, Halewood, L35 1QH

I acknowledge with thanks your request dated 05/01/2023 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. <http://www.unitedutilities.com/work-near-asset.aspx>.

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please [contact us](#).

Yours Faithfully,



Karen McCormack
Property Searches Manager

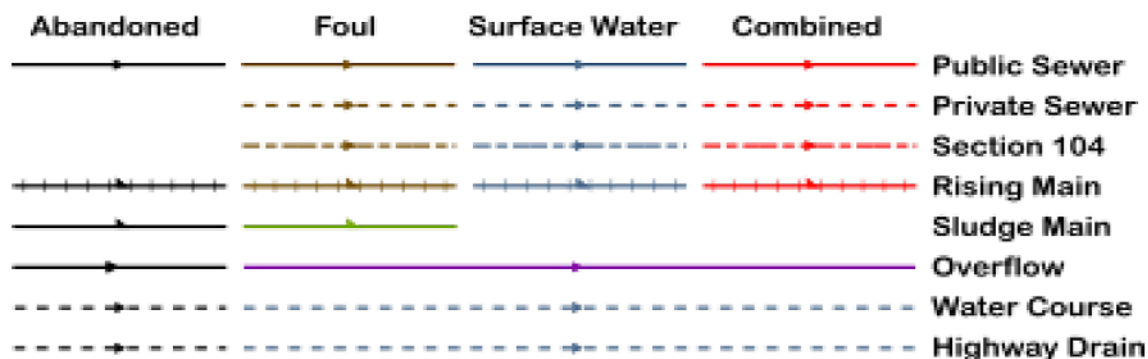
TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

TERMS AND CONDITIONS:

- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
- This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
- The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
- The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
- This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
- If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
- This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

Wastewater Symbolology



All point assets follow the standard colour convention: **red** – combined **brown** - foul
blue – surface water **purple** - overflow

Manhole	Side Entry Manhole
Head of System	Outfall
Extent of Survey	Screen Chamber
Rodding Eye	Inspection Chamber
Inlet	Bifurcation Chamber
Discharge Point	Lamp Hole
Vortex	T Junction / Saddle
Penstock	Catchpit
Washout Chamber	Valve Chamber
Valve	Vent Column
Air Valve	Vortex Chamber
Non Return Valve	Penstock Chamber
Soakaway	Network Storage Tank
Gully	Sewer Overflow
Cascade	Ww Treatment Works
Flow Meter	Ww Pumping Station
Hatch Box	Septic Tank
Oil Interceptor	Control Kiosk
Summit	
Drop Shaft	Change of Characteristic
Orifice Plate	



SEWER RECORDS

Address or Site Reference

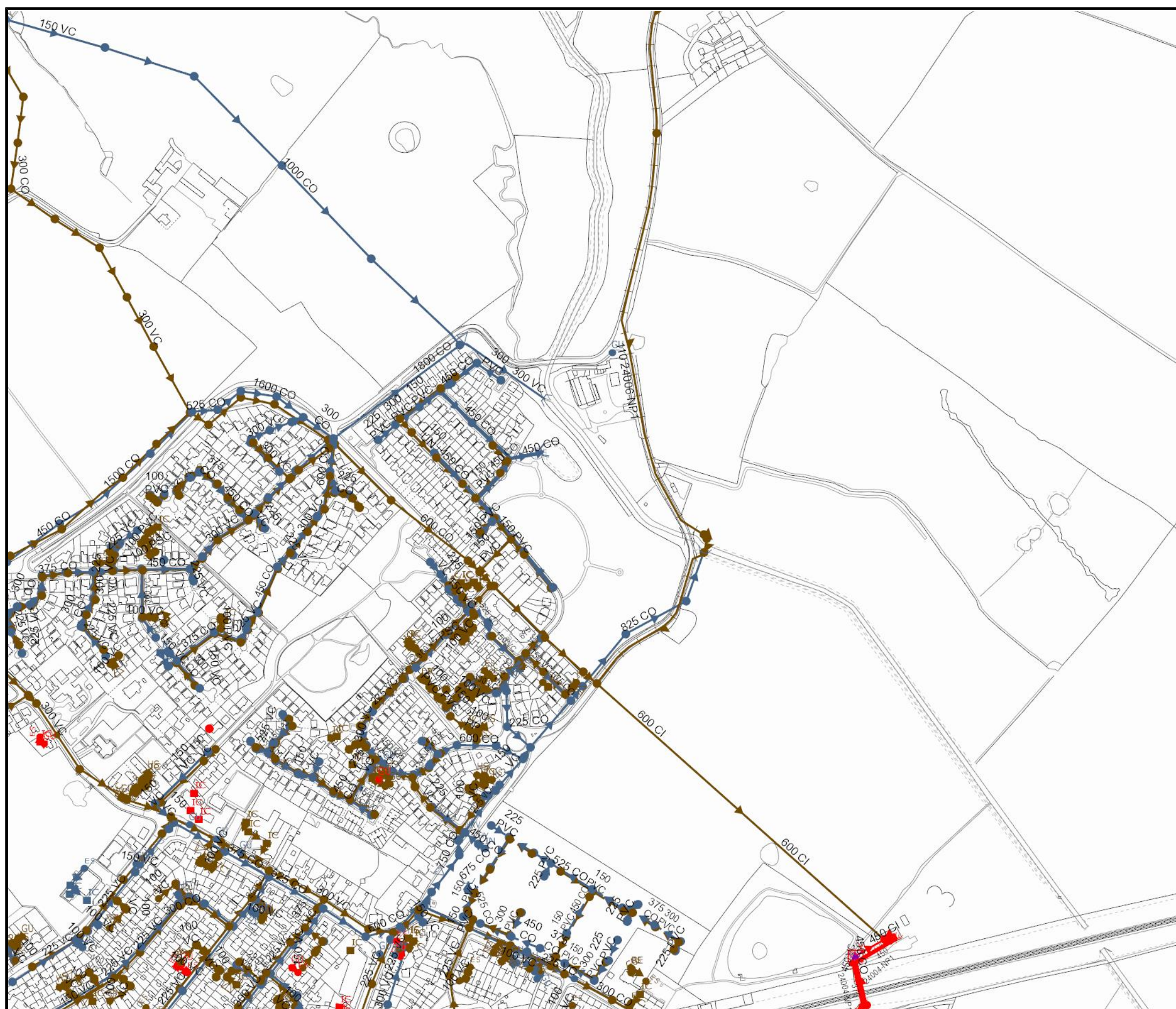
Former Merseyside Dogs Home
Greensbridge Lane,
Halewood,
L35 1QH

Scale: 1:5000
Date: 06/01/2023

Printed by: Property Searches

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

Crown copyright and database rights 2017
Ordnance Survey 100022432. Unauthorised
reproduction will infringe these copyrights.

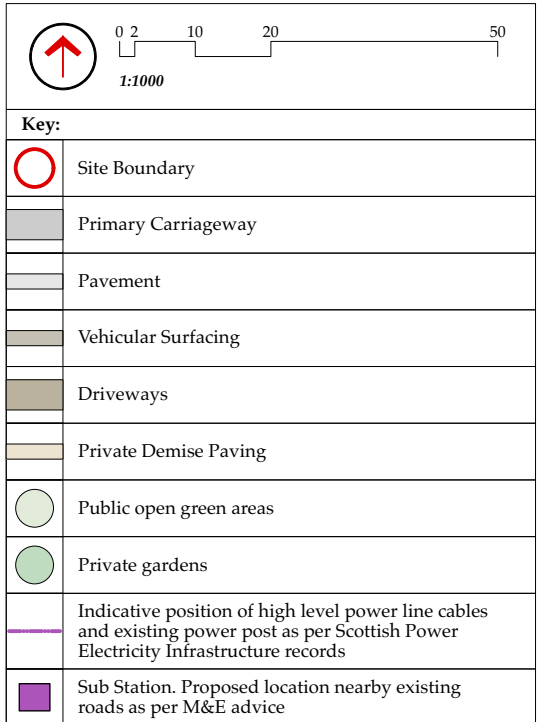
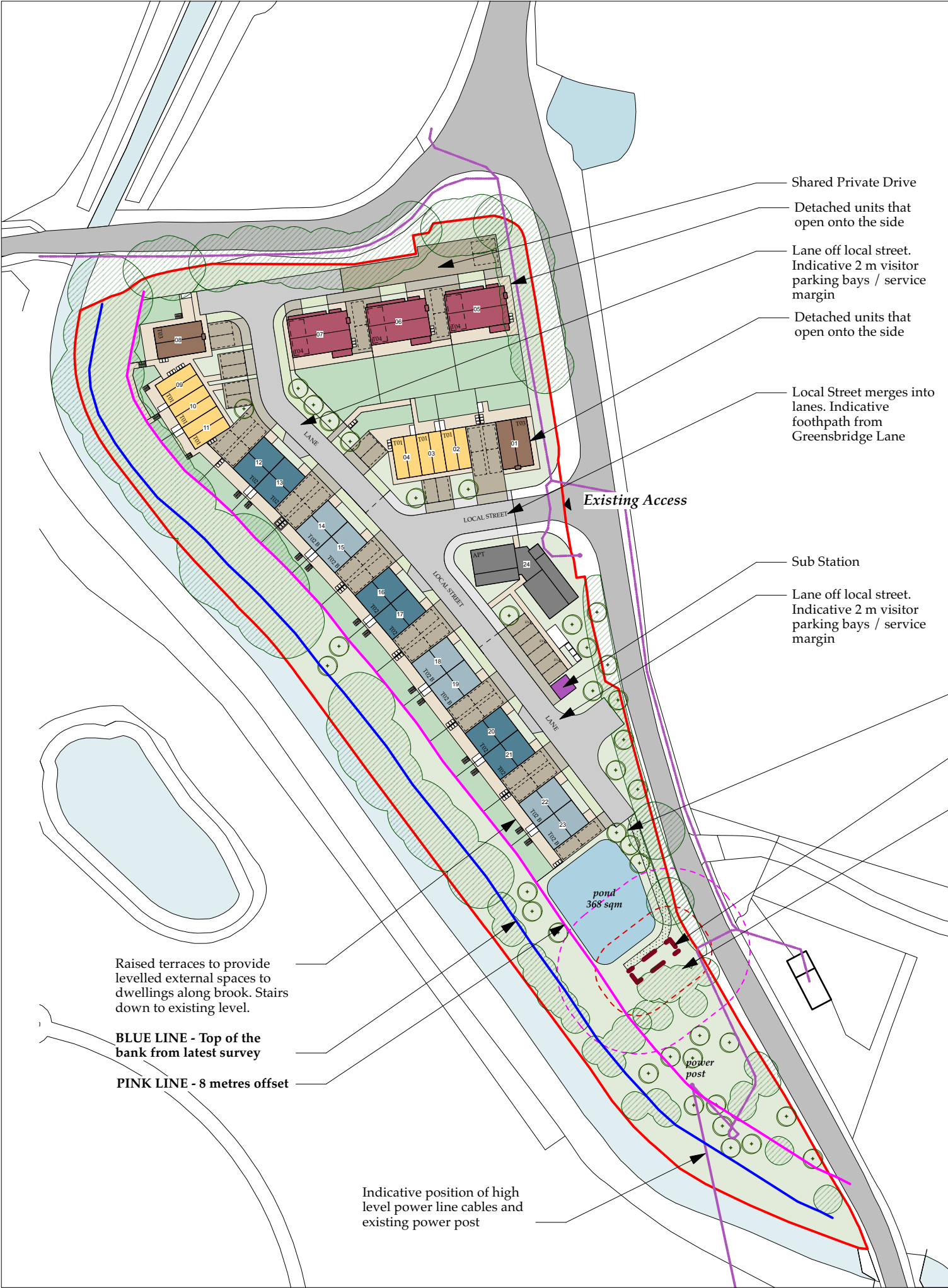


Appendix E Proposed Development Plan

MASTERPLAN

RESIDENTIAL UNITS:						
Type	Description	Bedrooms	People	GIFA		NO.
T01	 Terrace	2	3	c. 70.2 sqm	c. 755 sq ft	6
T02 A	 Semi Detached	3	5	c. 93 sqm	c. 1001 sq ft	6
T02 B	 Semi Detached	3	5	c. 93 sqm	c. 1001 sq ft	6
T03	 Detached	3	6	c. 106 sqm	c. 1001 sq ft	2
T04	 Detached	5	8	c. 147 sqm	c. 1582 sq ft	3
APT	 Apartment	1	2	c. 53.2 sqm	c. 573 sq ft	6
TOTAL						29

Note: All areas stated do not include garages. Integral or otherwise



NOTE:

- Trees shown on Masterplan in line with Landscape and Arboricultural Proposal. For further information refer to ARBORICULTURAL IMPACT ASSESSMENT (AIA) Landscape and Arboricultural.
- All areas stated do not include garages. Integral or otherwise

B	24/01/2025	AK	LC	Updates following Planning comments
Rev.	Date	Drawn	Checked	Note



ARCHITECTURAL EMPORIUM Ltd
www.architectural-emporium.co.uk / mail@architectural-emporium.co.uk
87 Kempston St, Liverpool, L3 8HE / +44 (0)151 363 0000

JOB: Greensbridge Lane - 531

STATUS: PLANNING

SCALE: 1:1000 @ ISO A3

FIRST ISSUE: 07/06/2024

DRAWING No: 2.010 - B

Masterplan Layout

Proposed Levels

Mitigation

From a flood risk point of view, the minimum development platform is 8.74m AOD. The platform can be above this level if required to make the drainage work by gravity.

The minimum finished floor level (600mm above flood levels) should be 9.17m AOD. Again, the level can be higher if required.

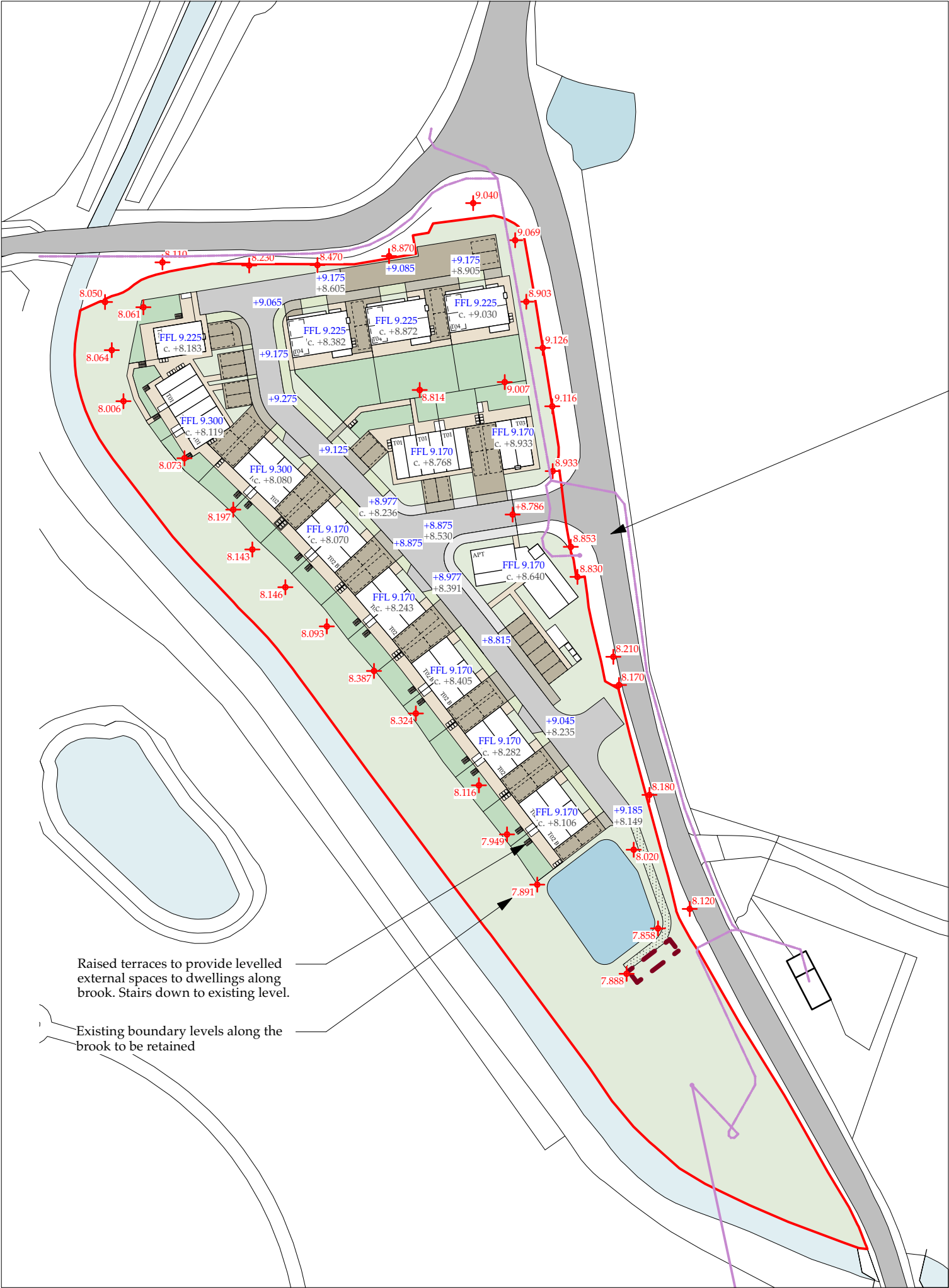
02102050

1:1000

Key:

	Site Boundary
+00	Existing Level
+00	Proposed Level
+00	Previous Existing Level
FFL	Building FFL (150mm higher than surrounding ground levels with ramp to entrance)

NOTE:
- Design Intent only, final levels to be coordinated on site



Existing boundary levels along Cartbridge and Geensbridge Lanes to be retained

Raised terraces to provide levelled external spaces to dwellings along brook. Stairs down to existing level.

Existing boundary levels along the brook to be retained

B

24/01/2025

AK

LC

Proposed Levels revised

Rev.

Date

Drawn

Checked

Note

ARCHITECTURAL EMPORIUM Ltd

www.architectural-emporium.co.uk / mail@architectural-emporium.co.uk

87 Kempston St, Liverpool, L3 8HE / +44 (0)151 363 0000

JOB:

Greensbridge Lane - 531

STATUS:

PLANNING

SCALE:

1:1000 @ ISO A3

FIRST ISSUE:

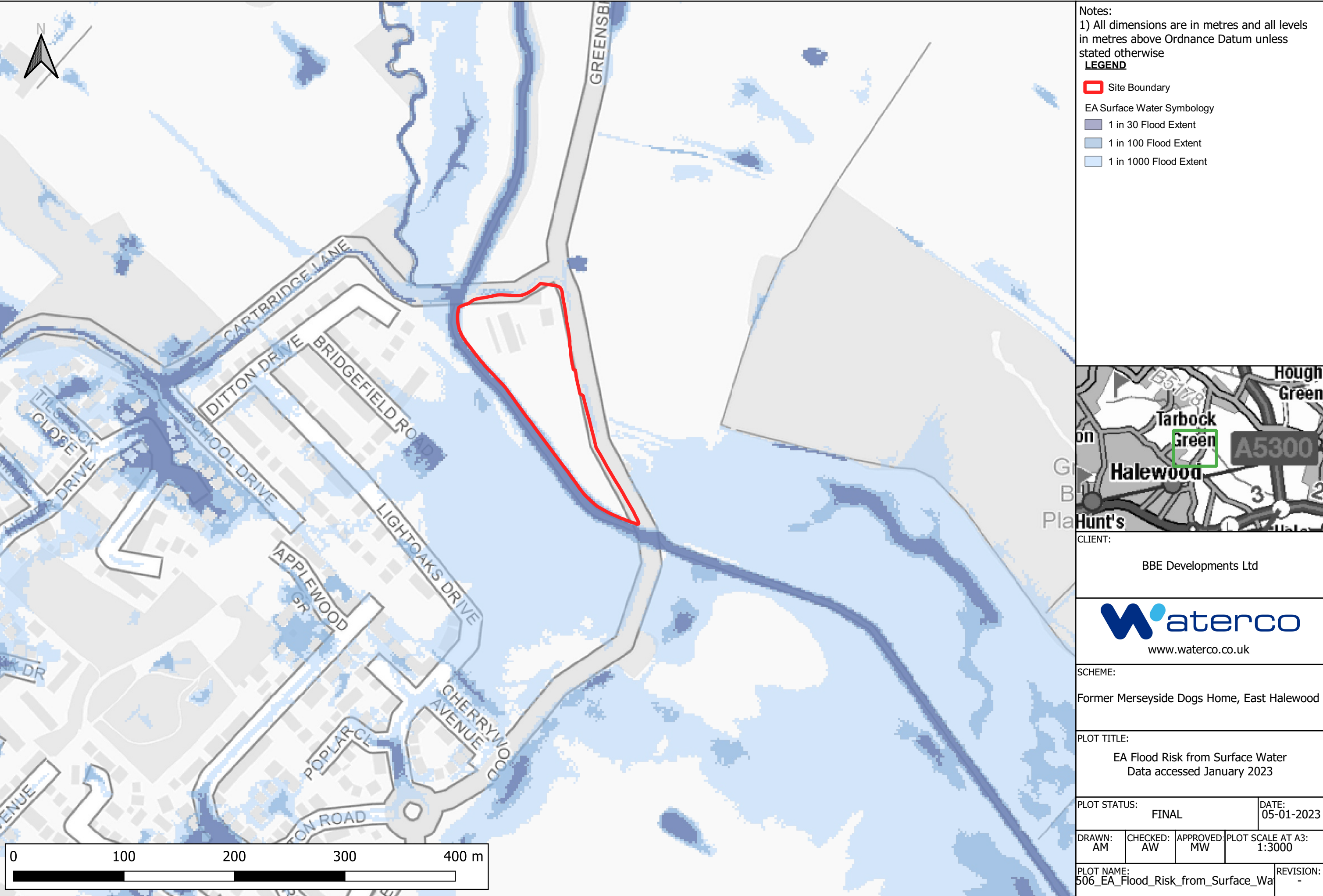
21/06/2024

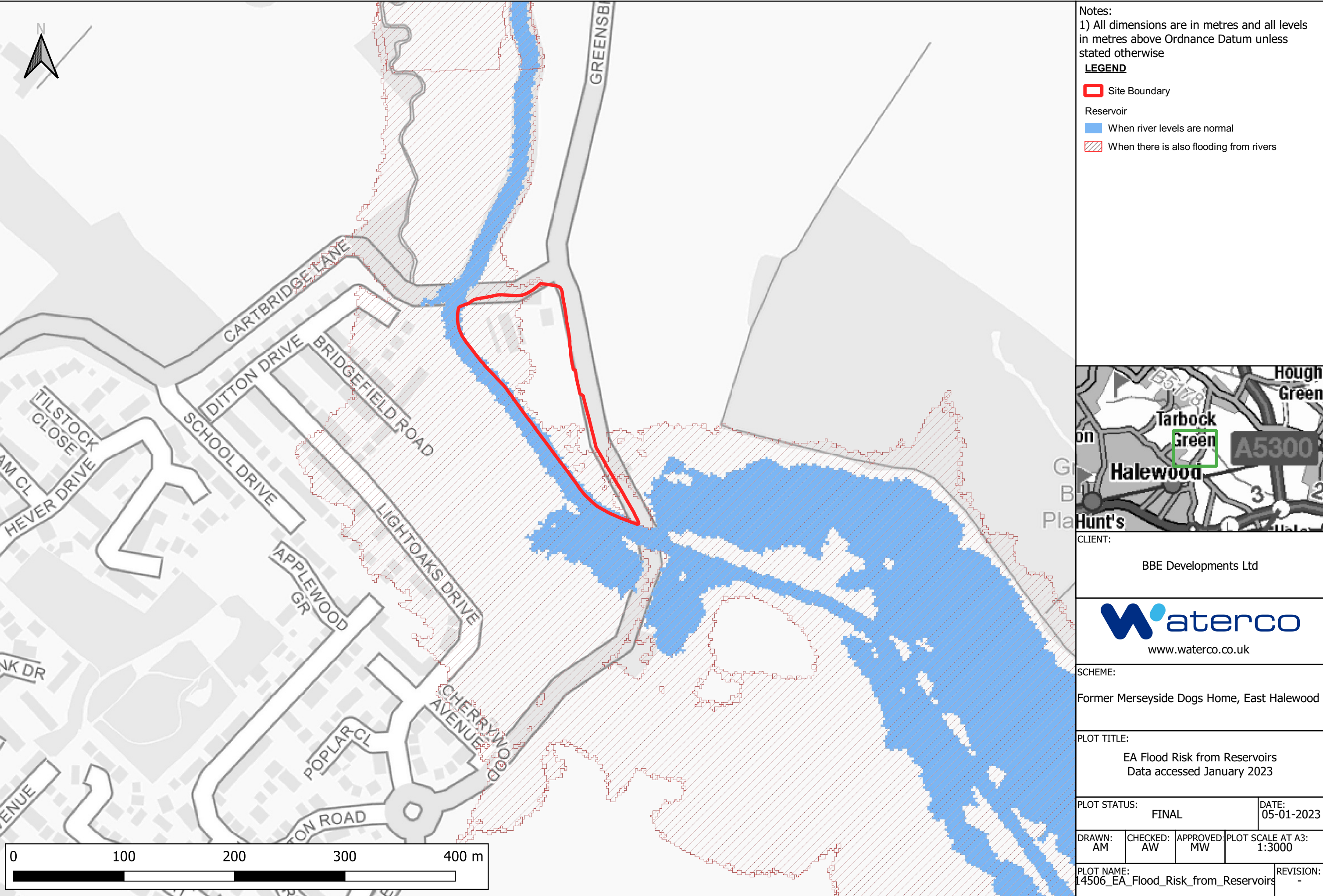
DRAWING No:

2.020 - B

Proposed Levels

Appendix F EA Flood Maps & Correspondence







Notes:

1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

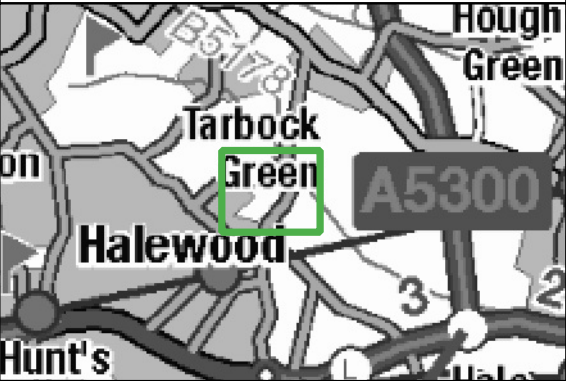
2) The Historic Flood Map is a GIS layer showing the maximum extent of individual Recorded Flood Outlines from river, the sea and groundwater springs that meet a set criteria. It shows areas of land that have previously been subject to flooding in England. This excludes flooding from surface water, except in areas where it is impossible to determine whether the source is fluvial or surface water but the dominant source is fluvial.

3) If an area is not covered by the Historic Flood Map it does not mean that the area has never flooded, only that the EA do not currently have records of flooding in this area that meet the criteria for inclusion.

4) The Historic Flood Map takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding. It will include flood extents that may have been affected by overtopping, breaches or blockages.

LEGEND

-  Site Boundary
-  Historic Flood Map



CLIENT:			
BBE Developments Ltd			
 www.waterco.co.uk			
SCHEME:			
Former Merseyside Dogs Home, East Halewood			
PLOT TITLE:			
EA Historic Flood Risk Data accessed January 2023			
PLOT STATUS:			DATE:
FINAL			05-01-2023
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
AM	AW	MW	1:3000
PLOT NAME:			REVISION:
14506_EA_Historic_Flood_Risk			-

Adam McCulloch

From: SPPlanning.RFH <SPPlanning.RFH@environment-agency.gov.uk>
Sent: 19 January 2023 11:49
To: Adam McCulloch
Subject: Preliminary opinion response: SO/2023/122828/01 - Former Merseyside Dogs Home, Greensbridge Lane, Halewood, L35 1QH
Attachments: Preliminary Opinion.pdf

Dear Adam McCulloch,

Thank you for requesting a preliminary opinion from the Environment Agency in regards to your development proposal. As part of our free service, we undertake a basic environmental constraint check of your site and provide the attached guidance note which outlines our expectations as a statutory consultee in the planning process. This should support you in planning and designing your development proposal.

Our preliminary opinion

Based on a high level mapping exercise undertaken of your development site (as per the geographic information you have provided to us), along with any information you have provided us with on the nature of the development, we have been able to provide the below preliminary advice. We have not undertaken a detailed review of any technical documents as part of this preliminary opinion. If you would like any further advice concerning technical issues for this proposal it will need to be as part of our charged service. Further information on this service is set out below, and within the attached guidance note.

Our basic constraint check has identified the following environmental issues on your site:

- The site is located within Flood Zone 3 defined as having a high probability of flooding in the National Planning Practice Guidance. The development proposal is for a 'more vulnerable' use.
- The proposed development site is bounded by Netherley brook which is designated as a Main River watercourse.
- The proposed development is within an area of Principal Aquifer bedrock
- The proposed development is within Source Protection Zones 1 and 2.

Based on this, the development raises some environmental concerns that you will need to address as part of your planning application. Further work will be needed to show how these issues can be satisfactorily addressed to ensure no environmental impacts.

Our charged service

As stated above, we have not undertaken a detailed review of your pre-application enquiry. We therefore cannot confirm at this stage whether the proposed development is acceptable to us. We do have a voluntary charged-for service where we can provide more detailed pre-application advice to the applicant. As part of this service, we can provide a dedicated project manager to act as a single point of contact to coordinate any problems, data requests or review technical documents. Should you wish us to undertake a detailed review of the proposal (or any subsequent documentation) or want further advice, we can do this as part of our charged service.

Further engagement at the pre-application stage will speed up our formal response to your planning application and provide you with certainty as to what our response to your planning application will be. It should also result in a better quality and more environmentally sensitive development. As part of our charged advice service we will provide a dedicated project manager to act as a single point of contact to help resolve any problems.

We currently charge £100 per hour/per person plus VAT. We will provide you with an estimated cost for any further discussions or review of documents. The terms of our charged for service can be found on GOV.UK.

Final comments

Please note this response is based on the information you have made available at this time. It is based on current national planning policy, associated legislation and environmental data / information. If any of these elements change in the future then we may need to reconsider our position.

We also recommend that you consult with the relevant Local Planning Authority (LPA) to ensure that your planning application meets their requirements.

We trust that the above information is of assistance. If you would like further detailed advice, please do not hesitate to contact us.

Kind regards,

India Blythin

Pronouns: she/her

Planning Advisor | Sustainable Places | Greater Manchester, Merseyside, Cheshire

Environment Agency | Richard Fairclough House, Knutsford Road, Latchford, Warrington WA4 1HT

Email: SPPlanning.RFH@environment-agency.gov.uk

From: Adam McCulloch <adam.mcculloch@waterco.co.uk>

Sent: 06 January 2023 09:35

To: Enquiries, Unit <enquiries@environment-agency.gov.uk>

Subject: RE: 14506-Pre-planning Opinion 230113/NW11

Proposed residential development at the Former Merseyside Dogs Home, Greensbridge Lane, Halewood, L35 1QH. Grid reference: 345627, 386583

Dear Sir / Madam,

We are currently preparing a Flood Risk Assessment for the site at the above address and are seeking a pre-planning opinion relating to flood risk. The proposed development is for the demolition of an existing Dog Home and residential property, and the erection of 40no. residential dwellings with associated access and parking. Please see attached a location plan and proposed site plan for your reference.

If you require any further information, please do not hesitate to contact me.

Kind Regards,

Adam McCulloch

Environmental Consultant

Teams: adam.mcculloch@waterco.co.uk

We're recruiting! For more information, please take a look at our [website](#).



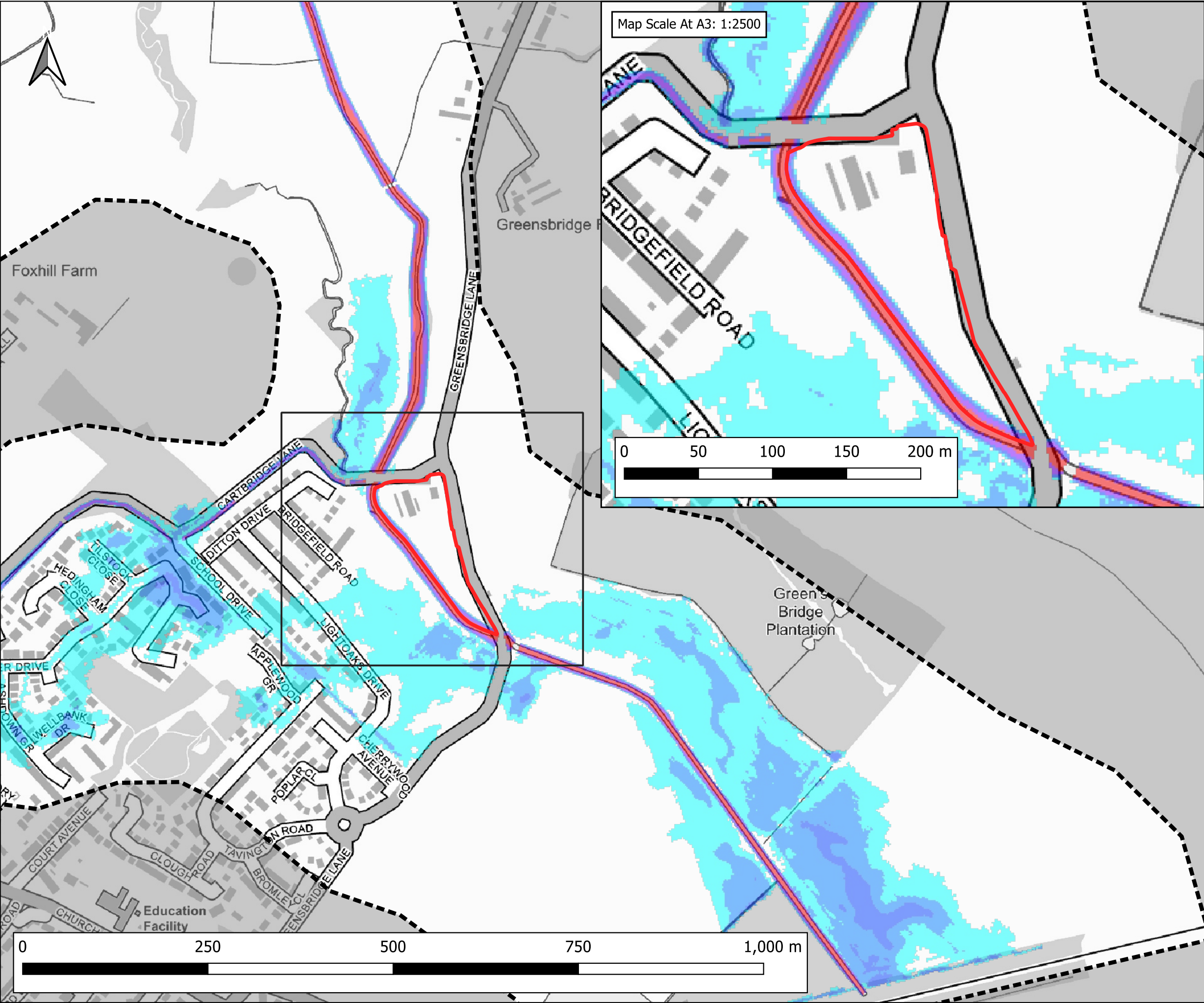
For email confidentiality, limitations and company details please see our disclaimer webpage. Registered in Wales under company no. 3577754. Waterco Ltd, Eden Court, Ruthin LL15 1NJ. Please click for our GDPR policy.

Please consider the environment before printing this email.

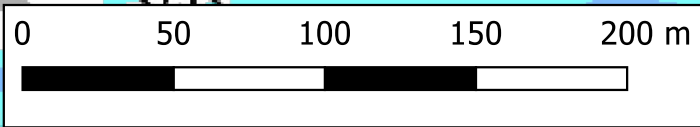
Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act

or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.

Appendix G Modelled Outputs



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:
BBE Development Ltd

SCHEME:
Former Merseyside Dogs Home, East Halewood

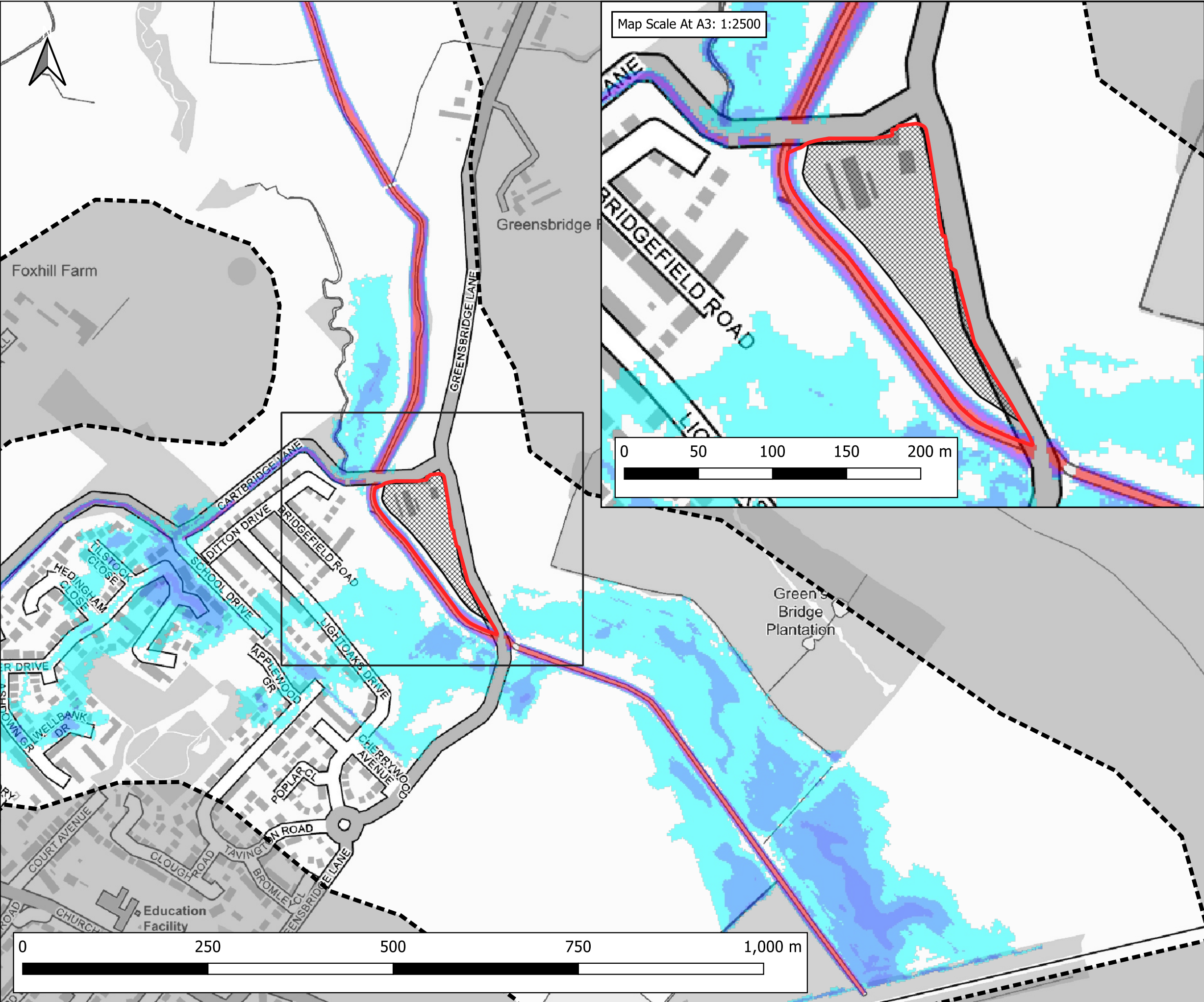
PLOT TITLE:
MAXIMUM FLOOD DEPTH
5% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:
FINAL

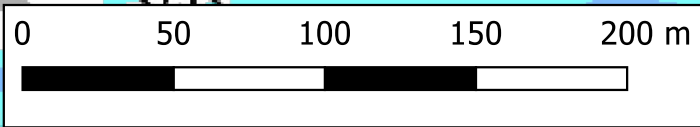
DATE:
03-06-2024

DRAWN: RM **CHECKED:** AP **APPROVED:** LS **PLOT SCALE AT A3:** 1:5000

PLOT NAME: 14506_Neth_Q20_EXG_NC_016_d_Max **REVISION:** -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

BBE Development Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home,
East Halewood

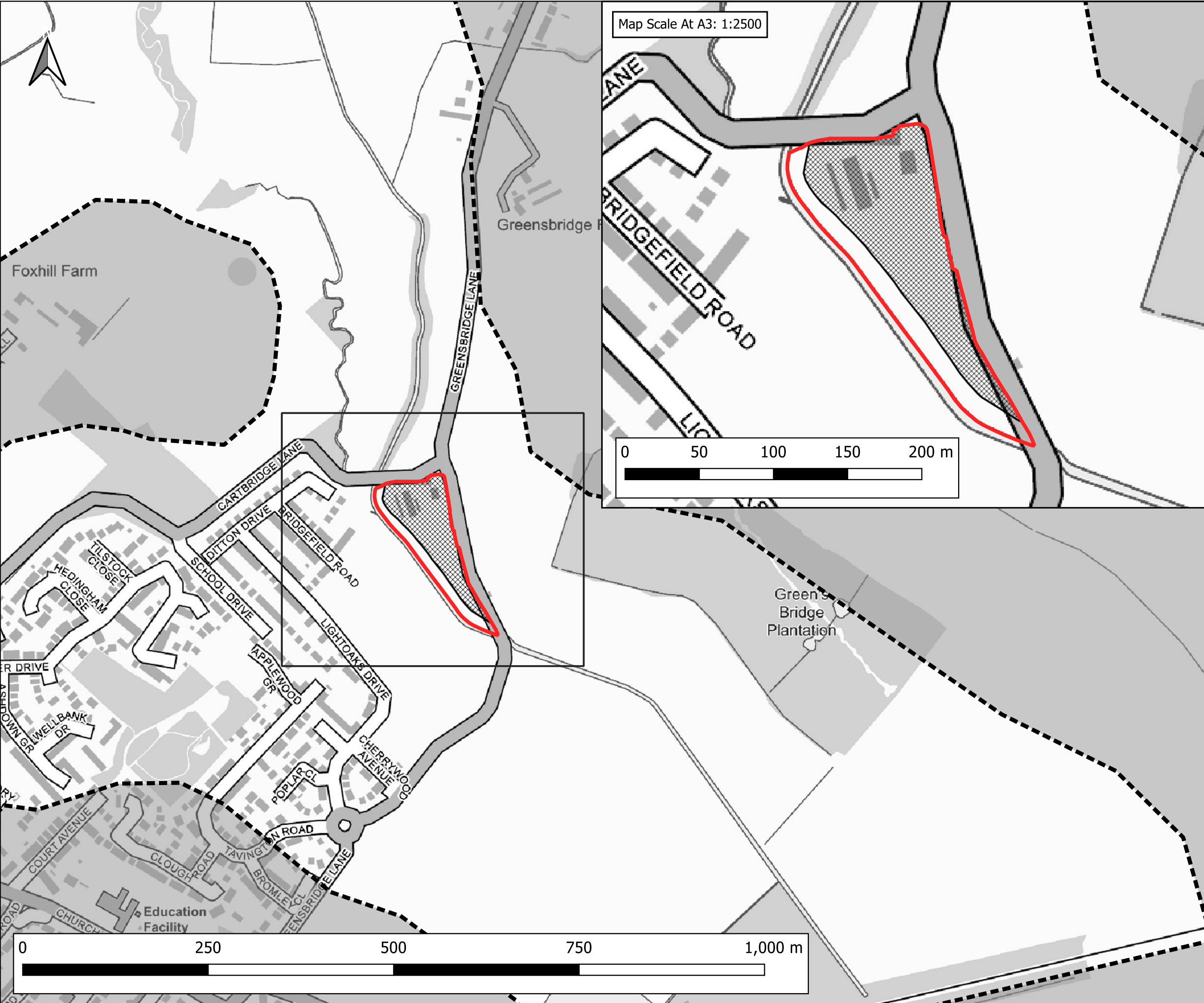
PLOT TITLE:

MAXIMUM FLOOD DEPTH
5% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q20_DEVSITE_NC_016_d_Max	-



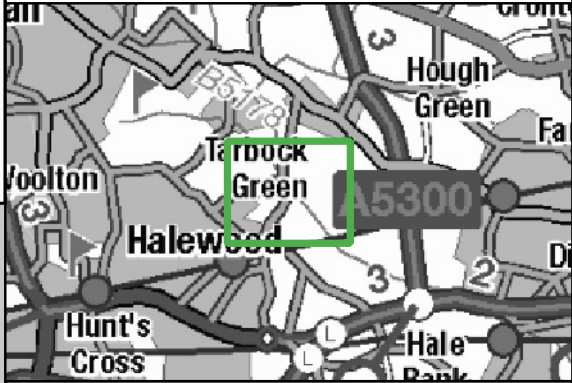
Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

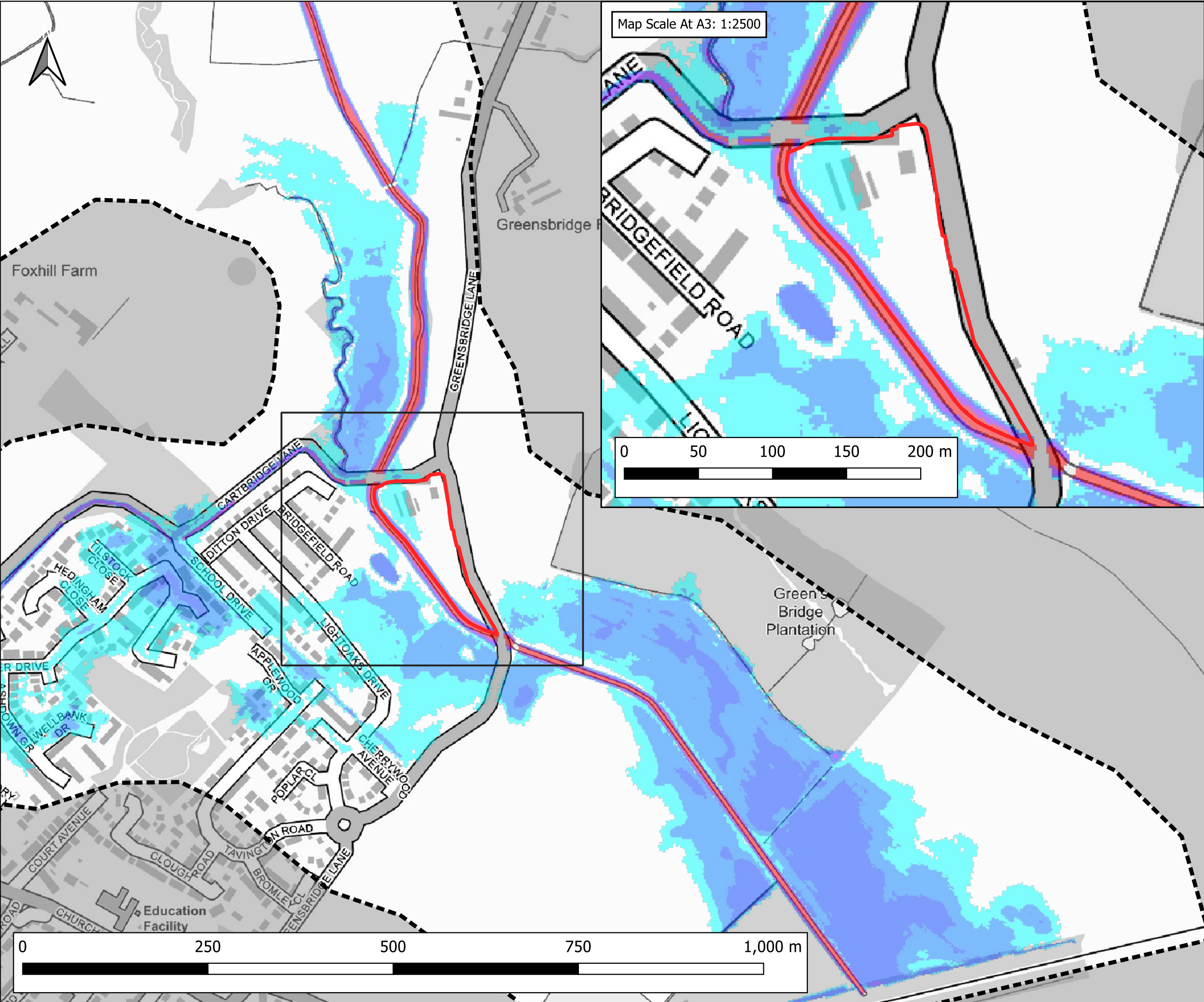
- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Depth Difference

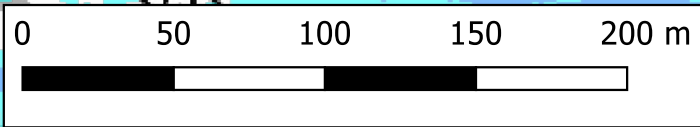
- > -100mm
- 50mm to -100mm
- 20mm to -50mm
- No Change (+/- 20mm)
- +20mm to +50mm
- +50mm to +100mm
- > +100mm



CLIENT: BBE Development Ltd			
 www.waterco.co.uk			
SCHEME: Former Merseyside Dogs Home, East Halewood			
PLOT TITLE: MAXIMUM FLOOD DEPTH DIFFERENCE 5% AEP FLUVIAL EVENT DEVSITE-EXG NORMAL FLOW CONDITIONS (NC)			
PLOT STATUS: FINAL			DATE: 03-06-2024
DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:5000
PLOT NAME: 14506_Neth_Q20_DEVSITE-EXG_NC_016_d-Diff			REVISION: -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

an
Hough
Green
Tarbock
Green
Halewood
Hunt's
Cross
Hale
Park

CLIENT:

BBE Development Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home,
East Halewood

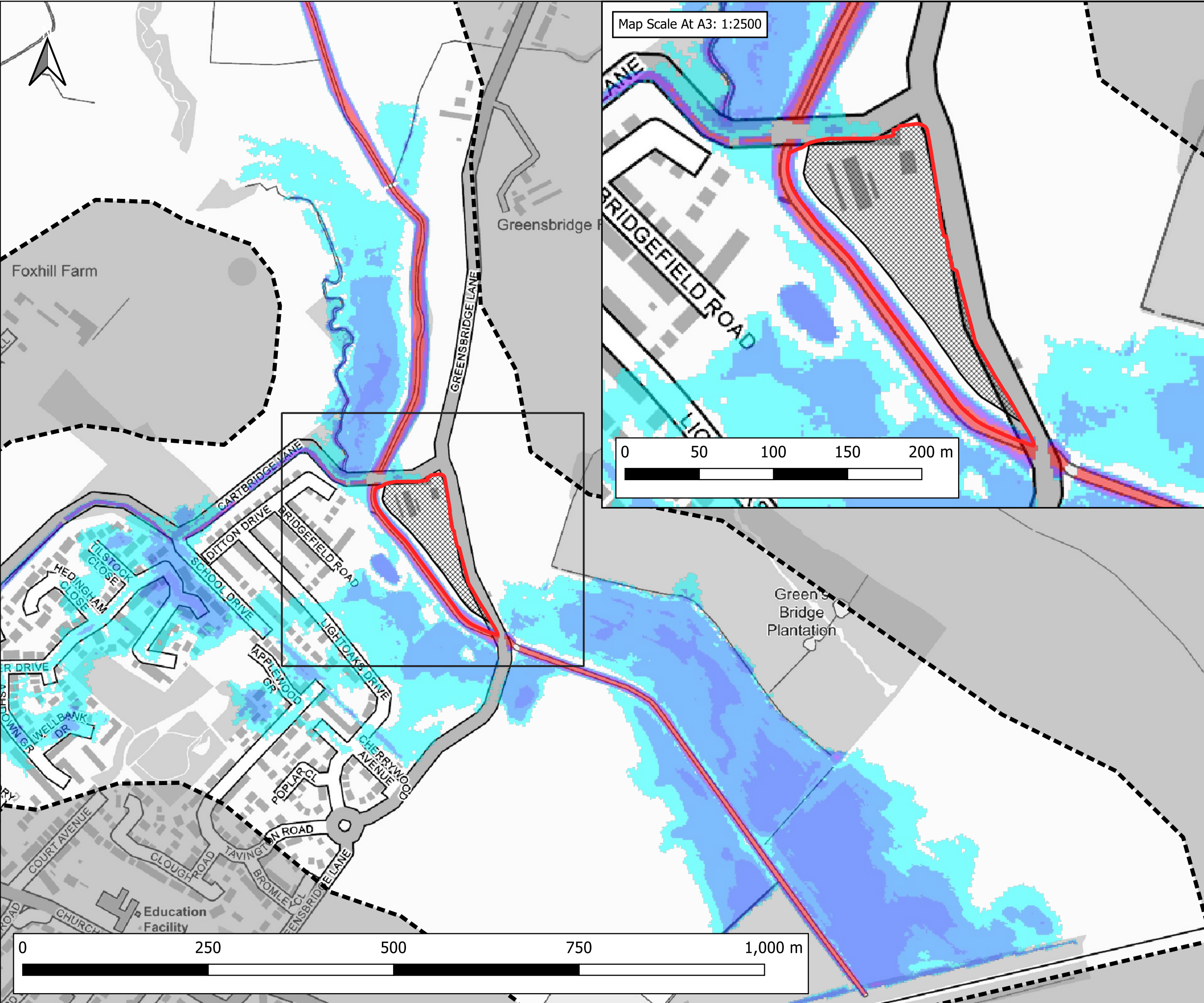
PLOT TITLE:

MAXIMUM FLOOD DEPTH
1% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:	FINAL	DATE:	03-06-2024
--------------	-------	-------	------------

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q100_EXG_NC_016_d_Max	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

an
Hough
Green
Fa
B5178
Tarbock
Green
Halewood
A5300
Hunt's
Cross
Hale
Park

CLIENT:

BBE Development Ltd

waterco
www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home,
East Halewood

PLOT TITLE:

MAXIMUM FLOOD DEPTH
1% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:

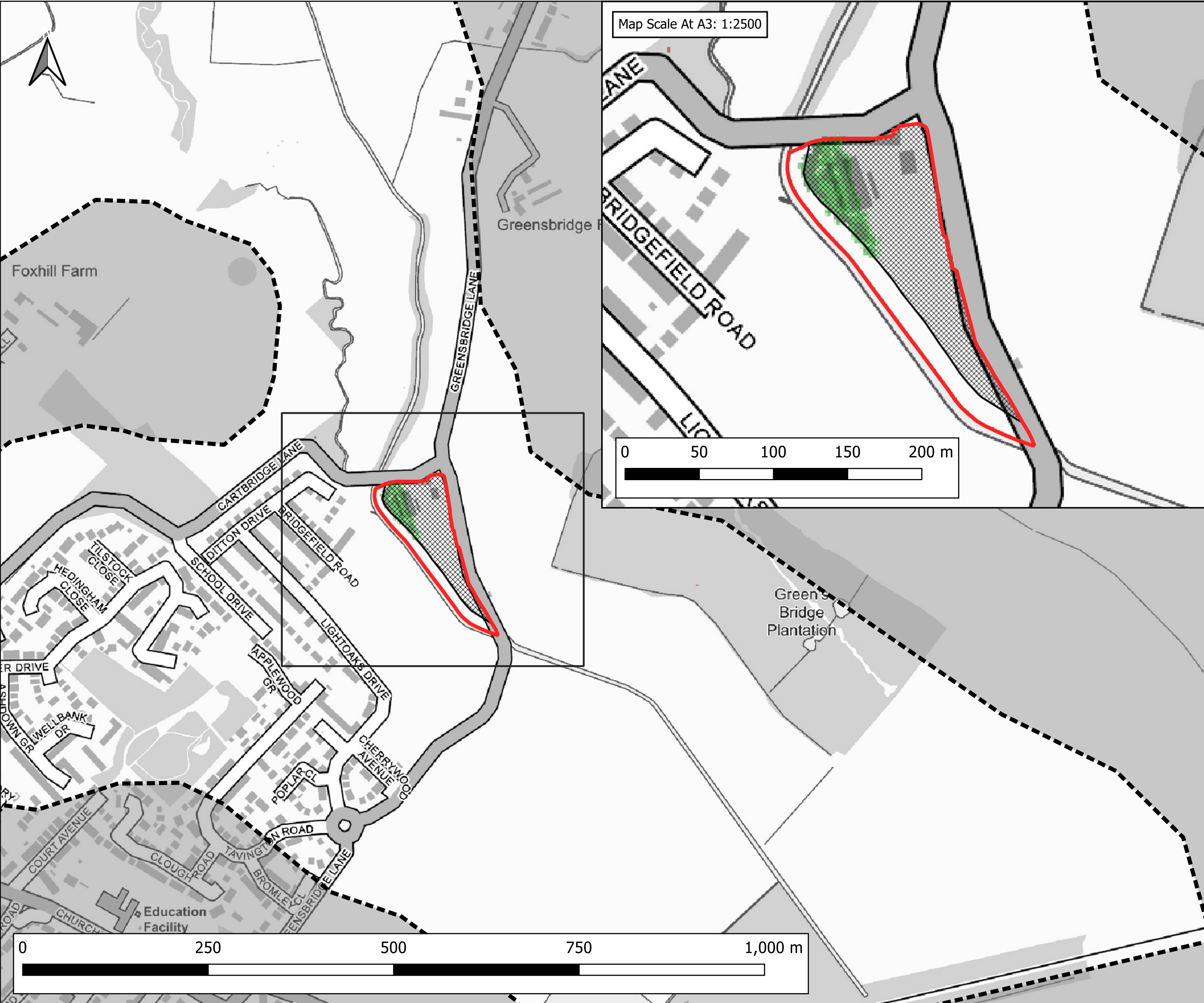
FINAL

DATE:
03-06-2024

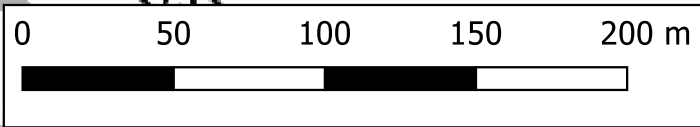
DRAWN: RM CHECKED: AP APPROVED: LS PLOT SCALE AT A3: 1:5000

PLOT NAME:
14506_Neth_Q100_DEVSITE_NC_016_d_Max

REVISION:
-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Depth Difference

- > -100mm
- 50mm to -100mm
- 20mm to -50mm
- No Change (+/- 20mm)
- +20mm to +50mm
- +50mm to +100mm
- > +100mm

CLIENT:
BBE Development Ltd

SCHEME:
Former Merseyside Dogs Home, East Halewood

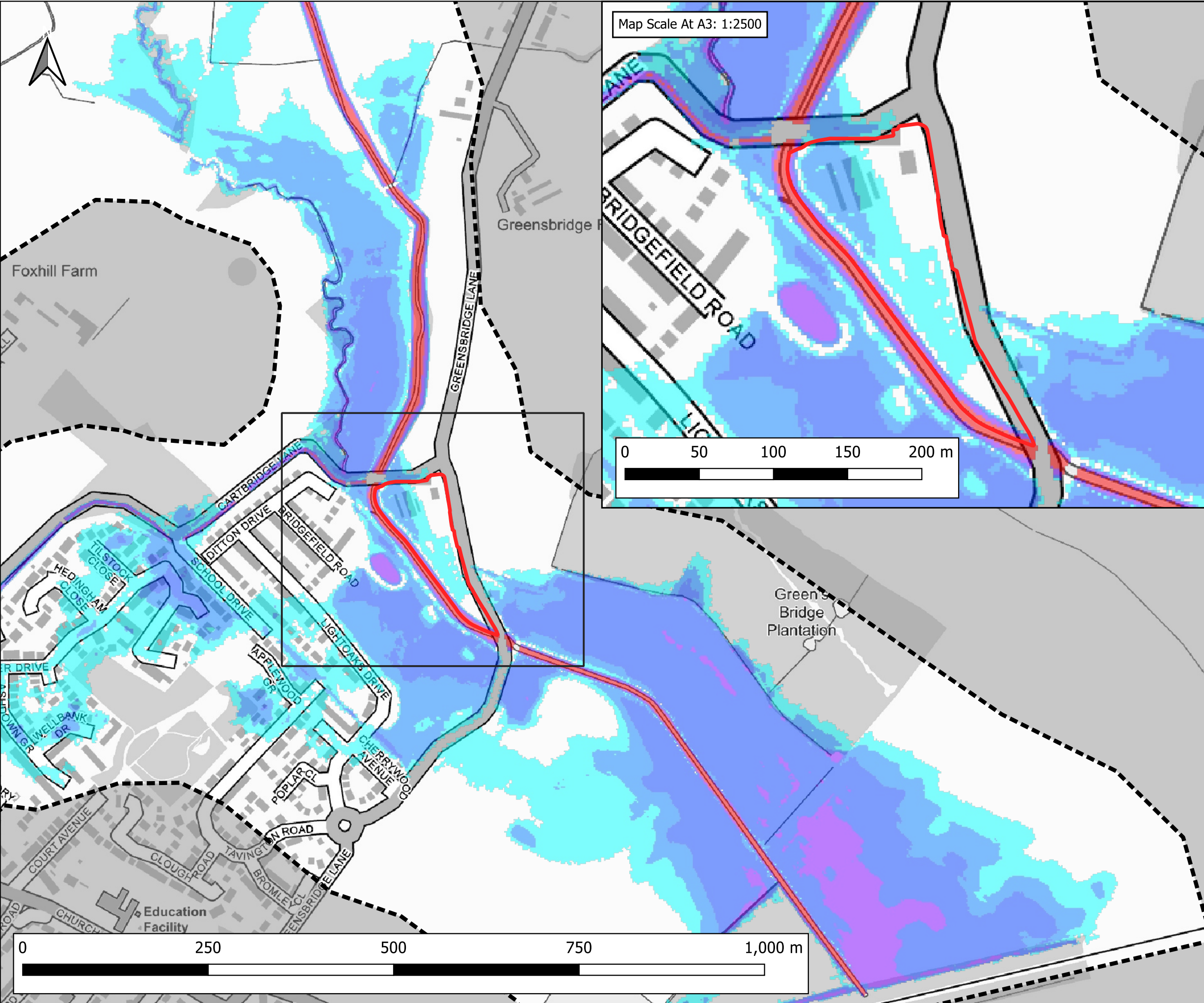
PLOT TITLE:
MAXIMUM FLOOD DEPTH DIFFERENCE
1% AEP FLUVIAL EVENT
DEVSITE-EXG
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:
FINAL

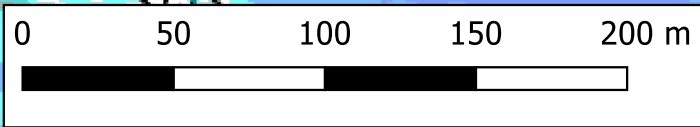
DATE:
03-06-2024

DRAWN: RM **CHECKED:** AP **APPROVED:** LS **PLOT SCALE AT A3:** 1:5000

PLOT NAME: 14506_Neth_Q100_DEVSITE-EXG_NC_016_d-Diff **REVISION:** -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Maximum Flood Depth
 - <= 0.3m
 - 0.3m - 0.6m
 - 0.6m - 1.2m
 - 1.2m - 2.4m
 - > 2.4m

CLIENT:

BBE Development Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home, East Halewood

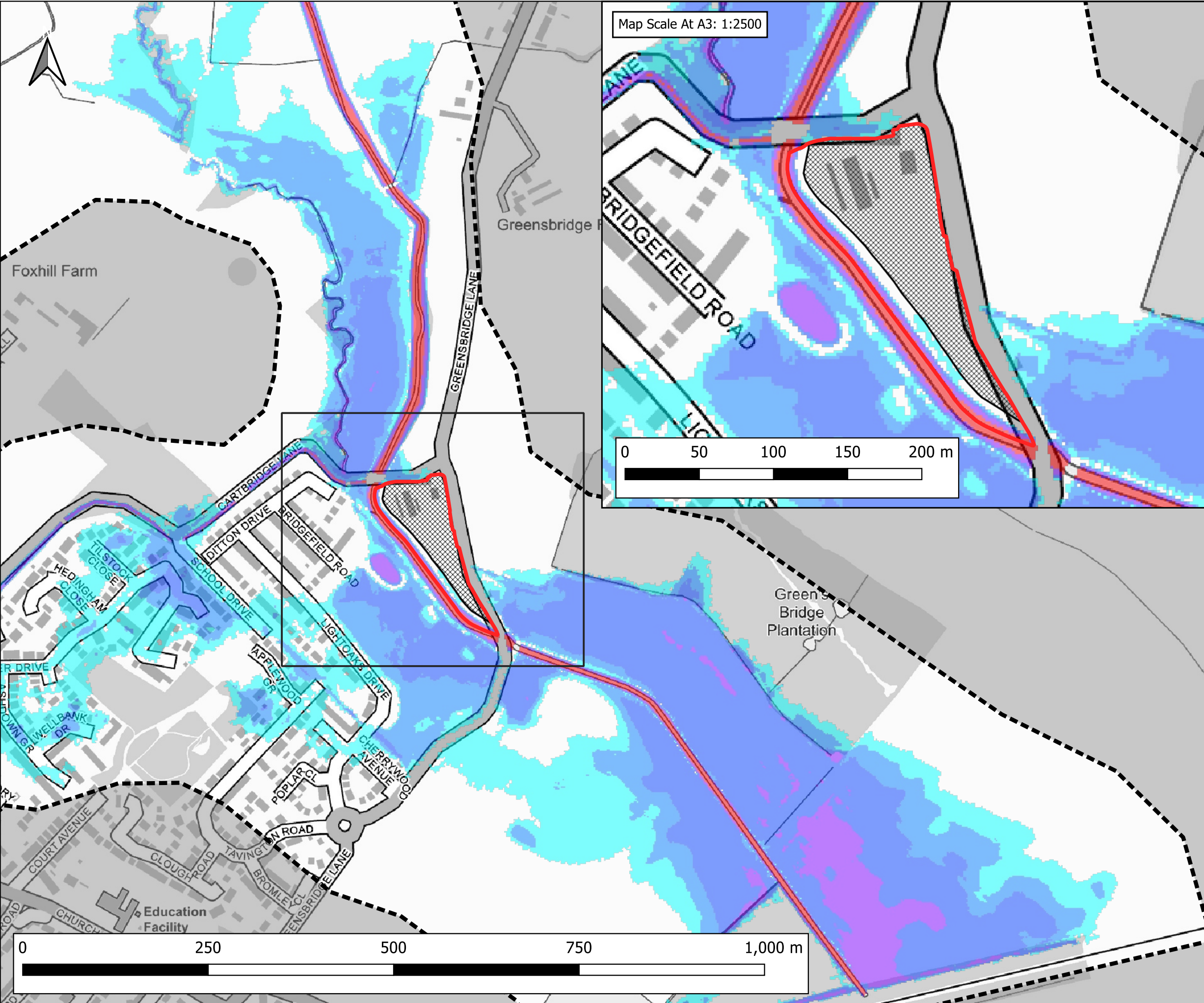
PLOT TITLE:

MAXIMUM FLOOD DEPTH
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q100CC44_EXG_NC_016_d_Max	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:
BBE Development Ltd

waterco
www.waterco.co.uk

SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

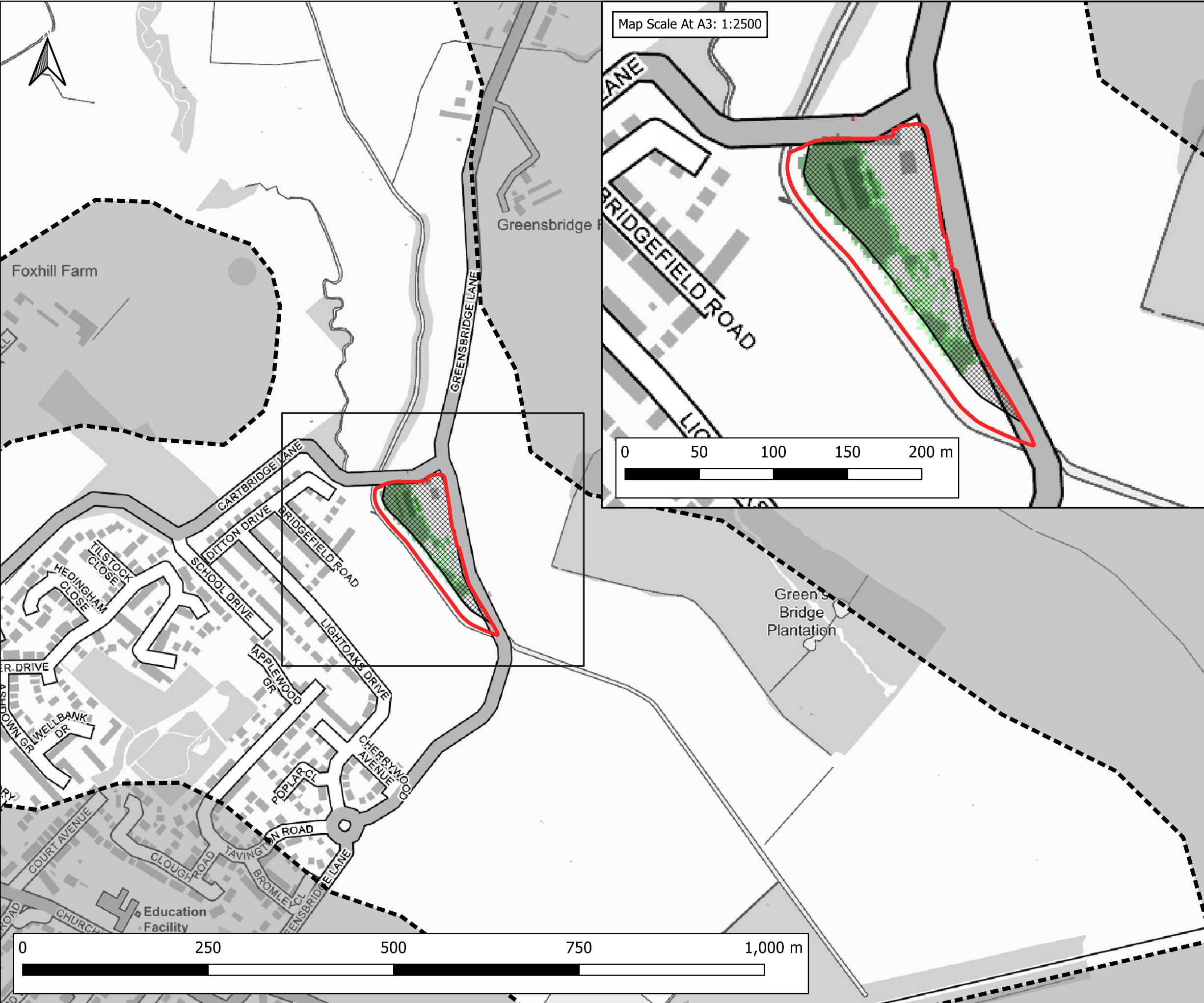
PLOT STATUS:
FINAL

DATE:
03-06-2024

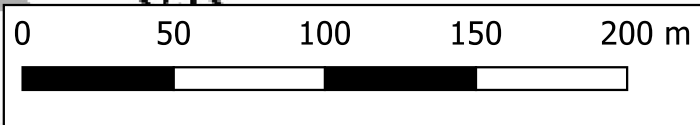
DRAWN: RM
CHECKED: AP
APPROVED: LS
PLOT SCALE AT A3: 1:5000

PLOT NAME:
14506_Neth_Q100CC44_DEVSITE_NC_016_d_Max

REVISION:
-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Depth Difference

- > -100mm
- 50mm to -100mm
- 20mm to -50mm
- No Change (+/- 20mm)
- +20mm to +50mm
- +50mm to +100mm
- > +100mm

CLIENT:
BBE Development Ltd

waterco
www.waterco.co.uk

SCHEME:
Former Merseyside Dogs Home, East Halewood

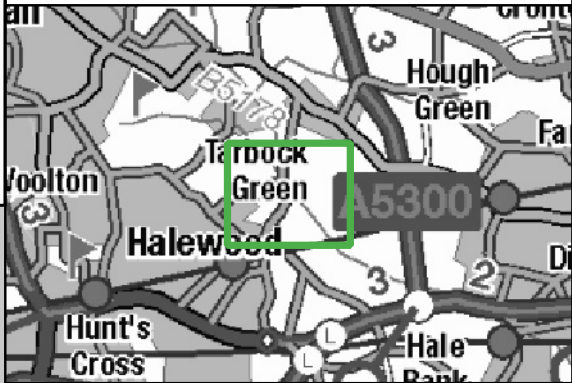
PLOT TITLE:
MAXIMUM FLOOD DEPTH DIFFERENCE
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
DEVSITE-EXG
NORMAL FLOW CONDITIONS (NC)

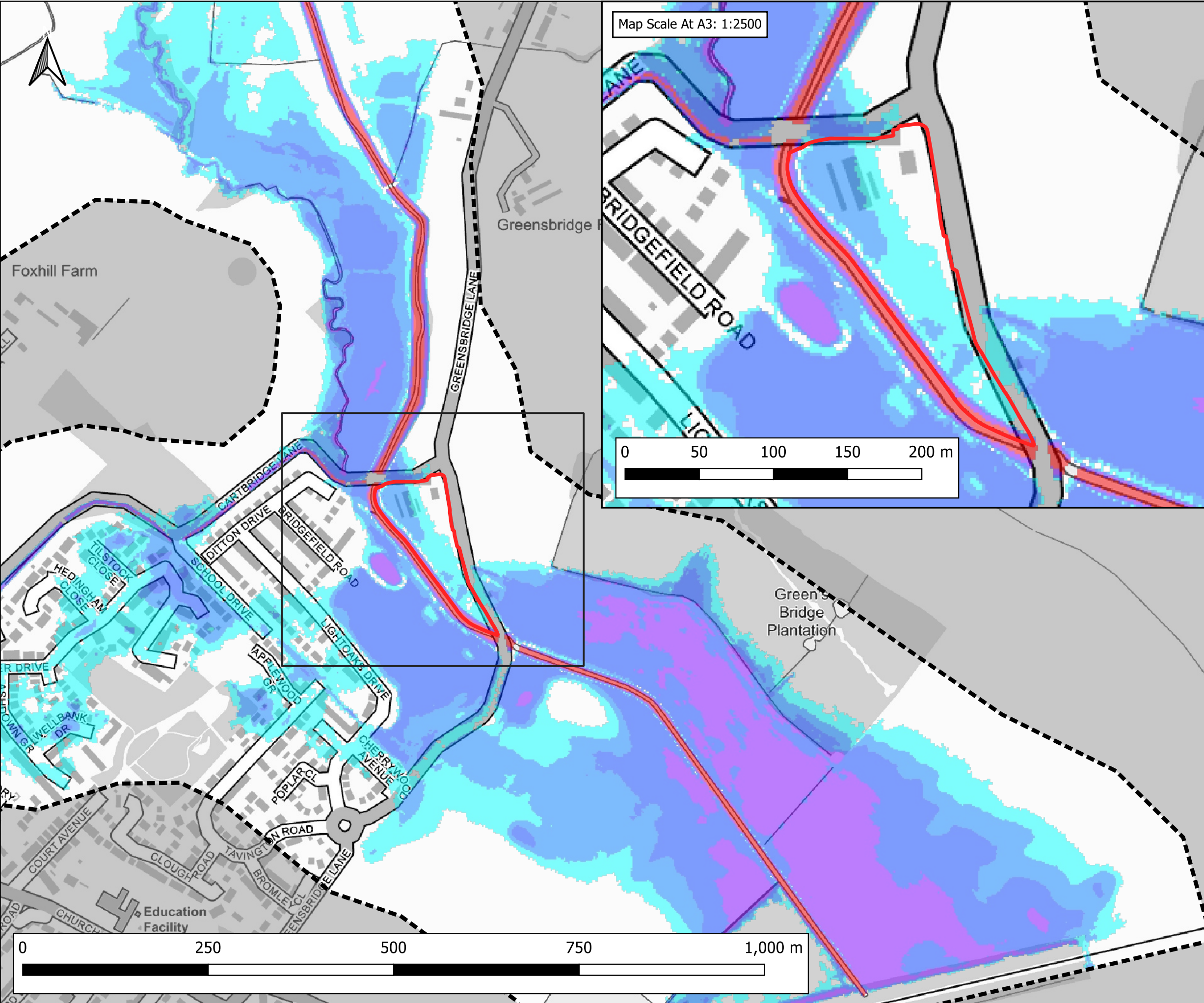
PLOT STATUS:
FINAL

DATE:
03-06-2024

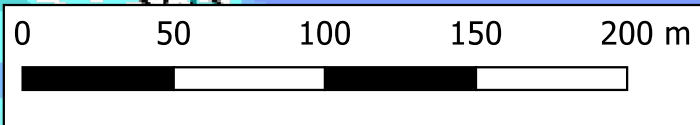
DRAWN: RM **CHECKED:** AP **APPROVED:** LS **PLOT SCALE AT A3:** 1:5000

PLOT NAME: 14506_Neth_Q100CC44_DEVSITE-EXG_NC_016_d-Diff **REVISION:** -





Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent

Maximum Flood Depth

- ≤ 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:
BBE Development Ltd

waterco
www.waterco.co.uk

SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
MAXIMUM FLOOD DEPTH
0.1% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

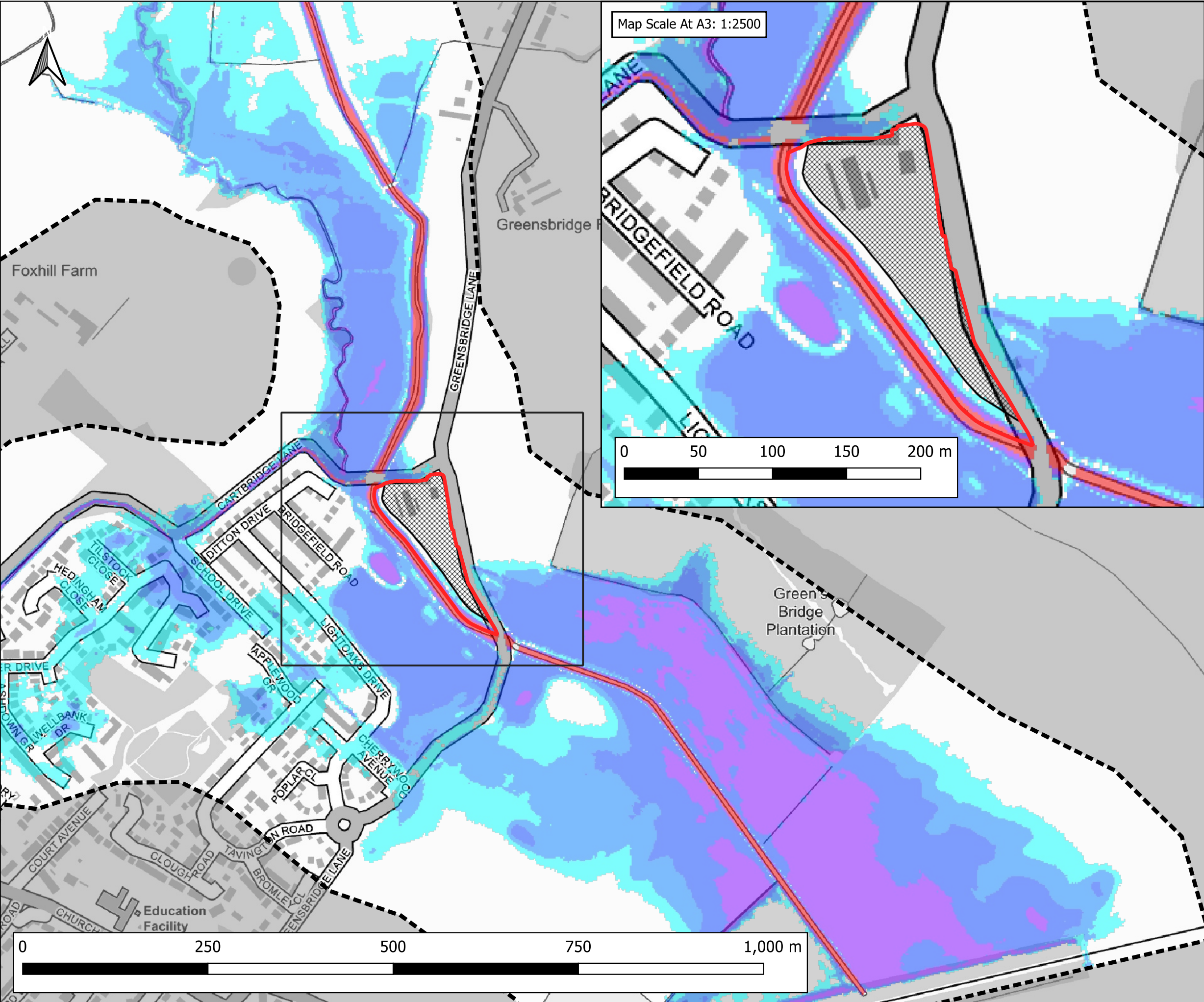
PLOT STATUS:
FINAL

DATE:
03-06-2024

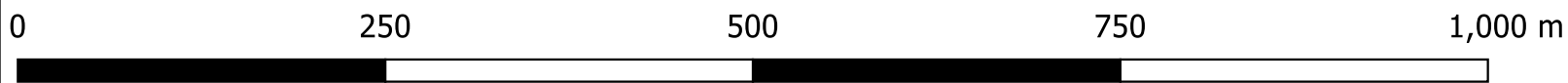
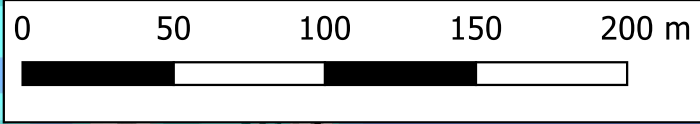
DRAWN: RM CHECKED: AP APPROVED: LS PLOT SCALE AT A3: 1:5000

PLOT NAME:
14506_Neth_Q1000_EXG_NC_016_d_Max

REVISION:
-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:
BBE Development Ltd

waterco
www.waterco.co.uk

SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
MAXIMUM FLOOD DEPTH
0.1% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

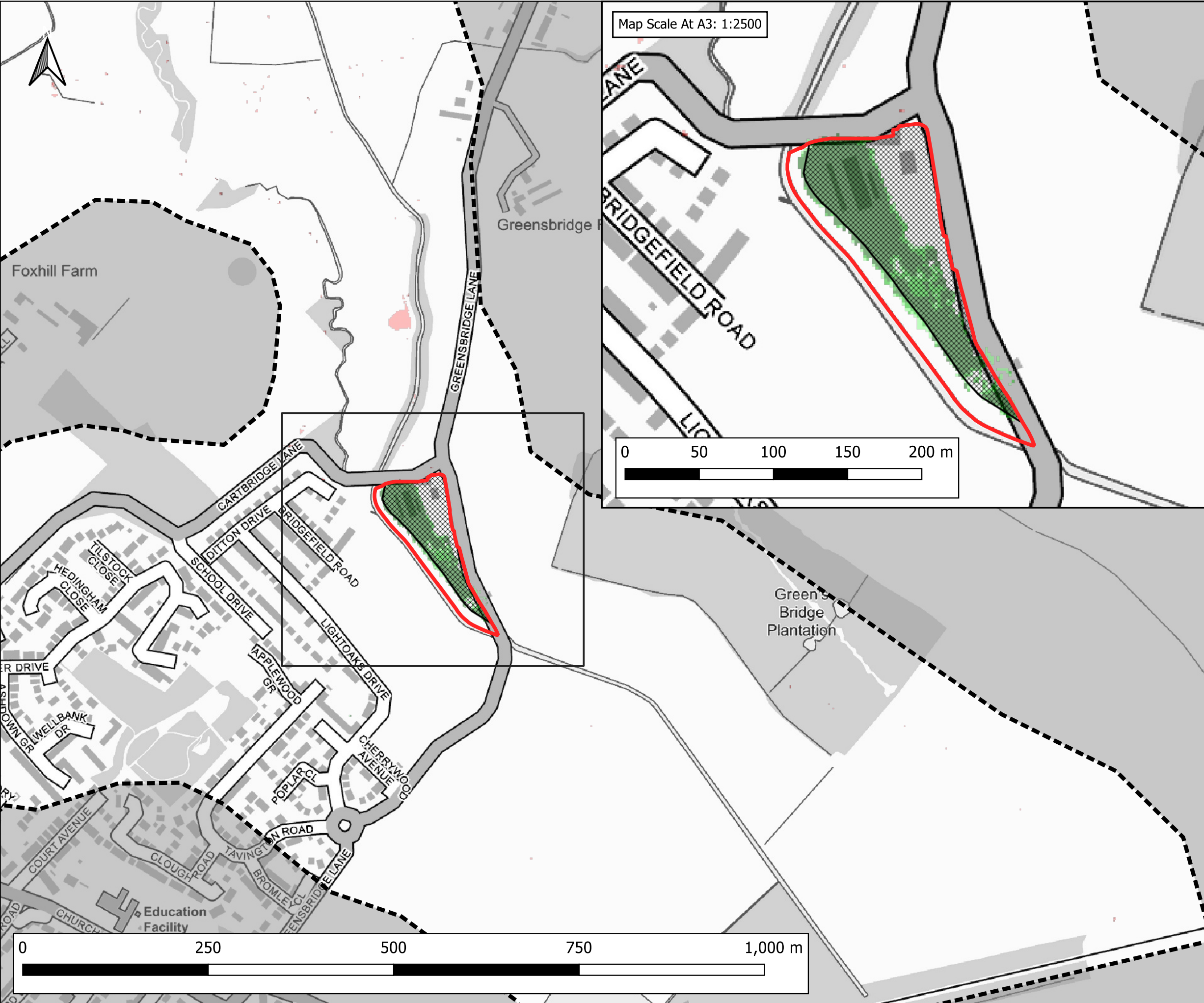
PLOT STATUS:
FINAL

DATE:
03-06-2024

DRAWN: RM
CHECKED: AP
APPROVED: LS
PLOT SCALE AT A3:
1:5000

PLOT NAME:
14506_Neth_Q1000_DEVSITE_NC_016_d_Max

REVISION:
-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Depth Difference

- > -100mm
- 50mm to -100mm
- 20mm to -50mm
- No Change (+/- 20mm)
- +20mm to +50mm
- +50mm to +100mm
- > +100mm

Client: BBE Development Ltd

waterco
www.waterco.co.uk

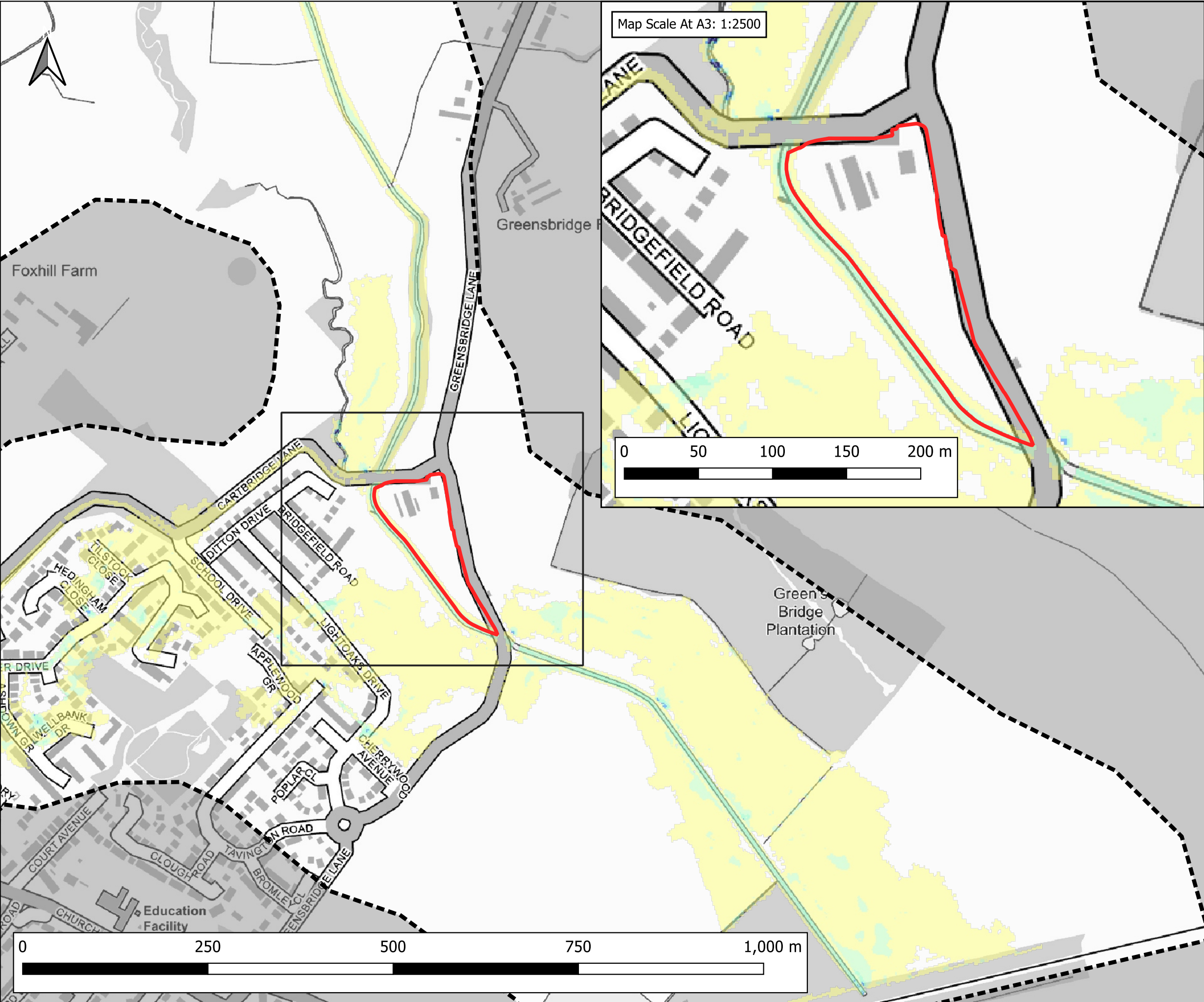
Scheme: Former Merseyside Dogs Home, East Halewood

Plot Title: MAXIMUM FLOOD DEPTH DIFFERENCE
0.1% AEP FLUVIAL EVENT
DEVSITE-EXG
NORMAL FLOW CONDITIONS (NC)

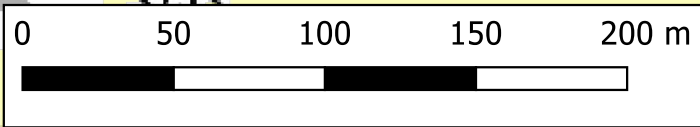
Plot Status: FINAL DATE: 03-06-2024

Drawn: RM Checked: AP Approved: LS Plot Scale At A3: 1:5000

Plot Name: 14506_Neth_Q1000_DEVSITE-EXG_NC_016_d-Diff Revision: -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

Site Boundary

Model Extent

Maximum Flood Velocity (m/s)

0.0 - 0.3

0.3 - 0.6

0.6 - 0.9

0.9 - 1.2

> 1.2

CLIENT:

BBE Development Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home,
East Halewood

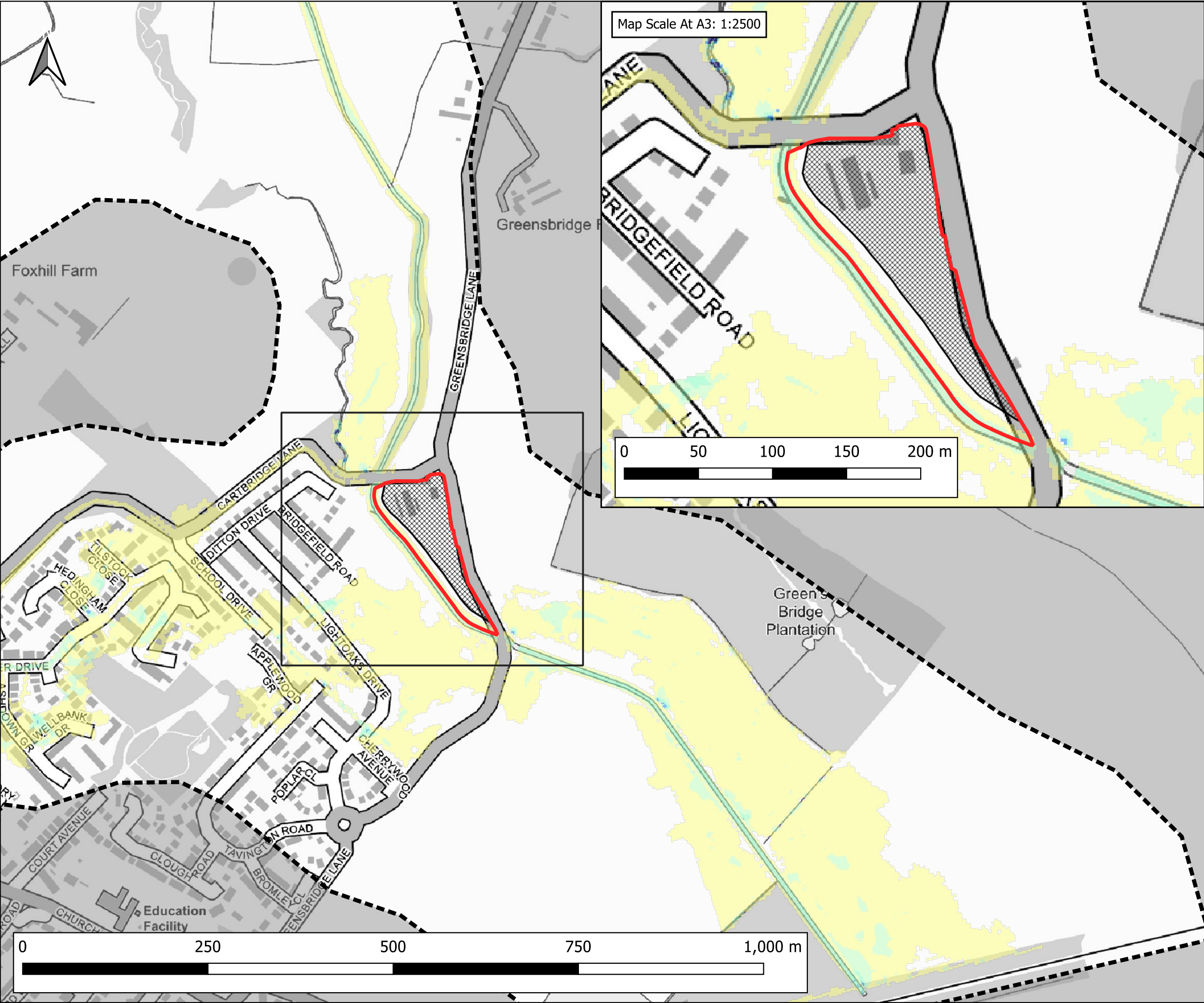
PLOT TITLE:

MAXIMUM FLOOD VELOCITY
5% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

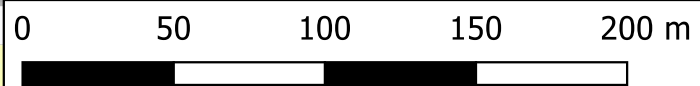
PLOT STATUS:		FINAL		DATE:	03-06-2024
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DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q20_EXG_NC_016_V_Max	-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:

BBE Development Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home, East Halewood

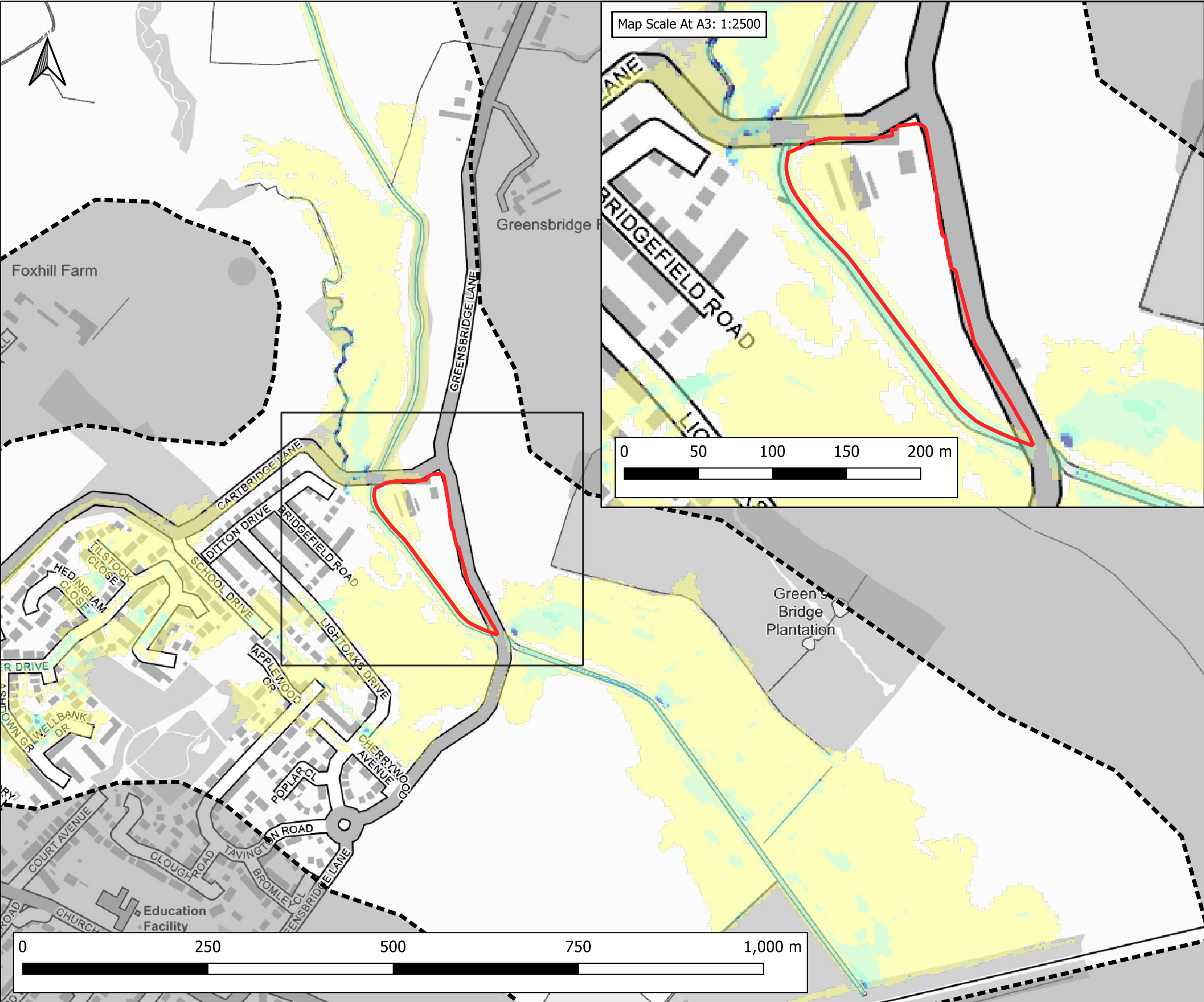
PLOT TITLE:

MAXIMUM FLOOD VELOCITY
5% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

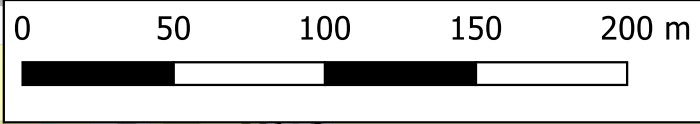
PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q20_DEVSITE_NC_016_V_Max	-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

Site Boundary

Model Extent

Maximum Flood Velocity (m/s)

0.0 - 0.3

0.3 - 0.6

0.6 - 0.9

0.9 - 1.2

> 1.2

CLIENT:

BBE Development Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home, East Halewood

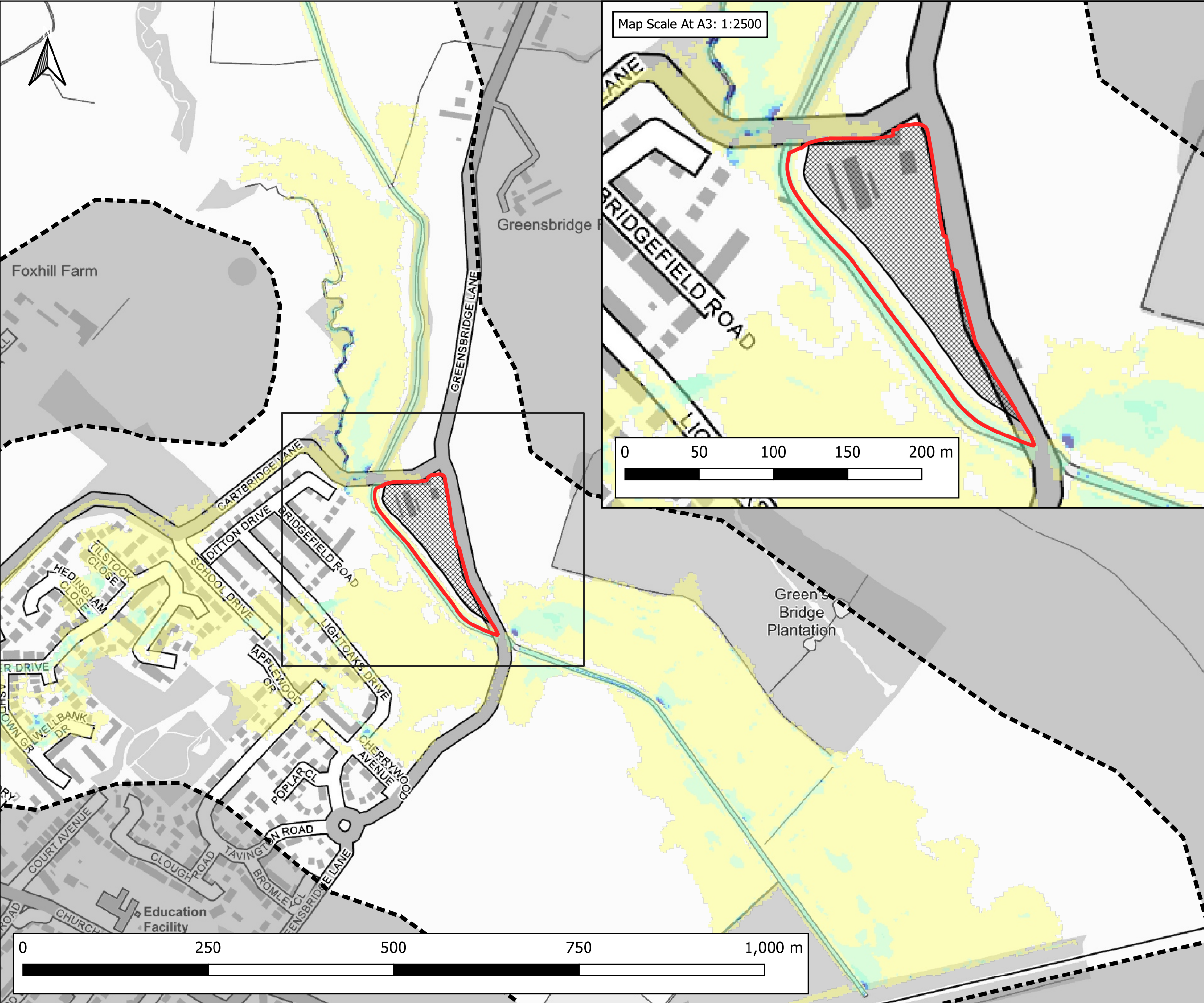
PLOT TITLE:

MAXIMUM FLOOD VELOCITY
1% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

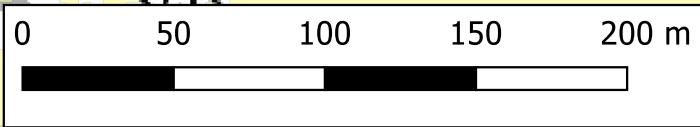
PLOT STATUS:		FINAL		DATE:	03-06-2024
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DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q100_EXG_NC_016_V_Max	-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:

BBE Development Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home, East Halewood

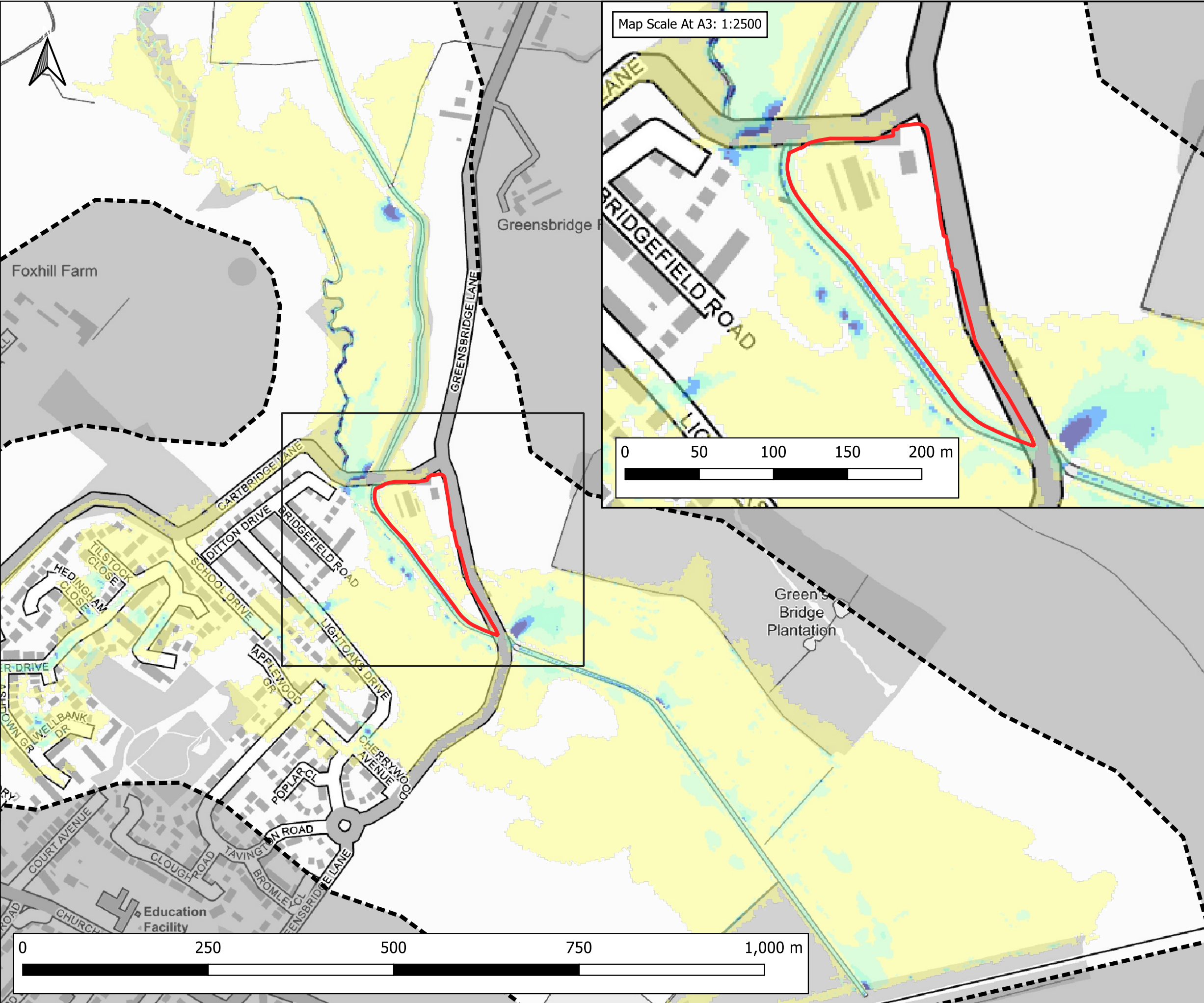
PLOT TITLE:

MAXIMUM FLOOD VELOCITY
1% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

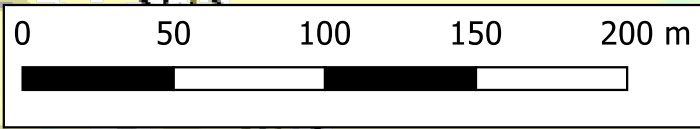
PLOT STATUS:		FINAL		DATE:	03-06-2024
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DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:	
RM	AP	LS	1:5000	

PLOT NAME:		REVISION:
14506_Neth_Q100_DEVSITE_NC_016_V_Max		-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent

Maximum Flood Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:
BBE Development Ltd

waterco
www.waterco.co.uk

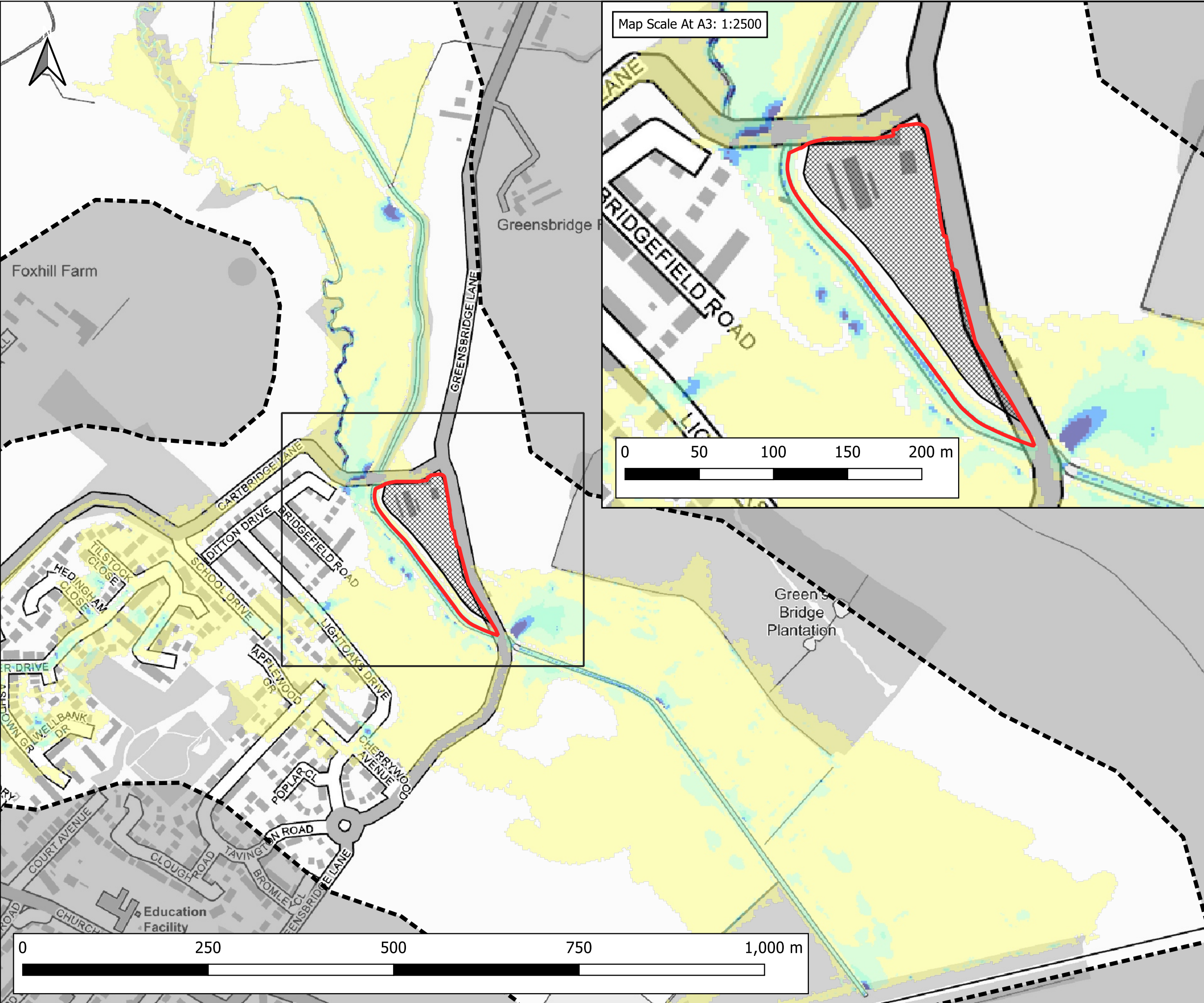
SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
MAXIMUM FLOOD VELOCITY
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

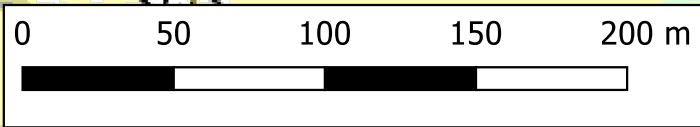
PLOT STATUS: FINAL **DATE:** 03-06-2024

DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:5000
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PLOT NAME: 14506_Neth_Q100CC44_EXG_NC_016_V_Max **REVISION:** -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:

BBE Development Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home, East Halewood

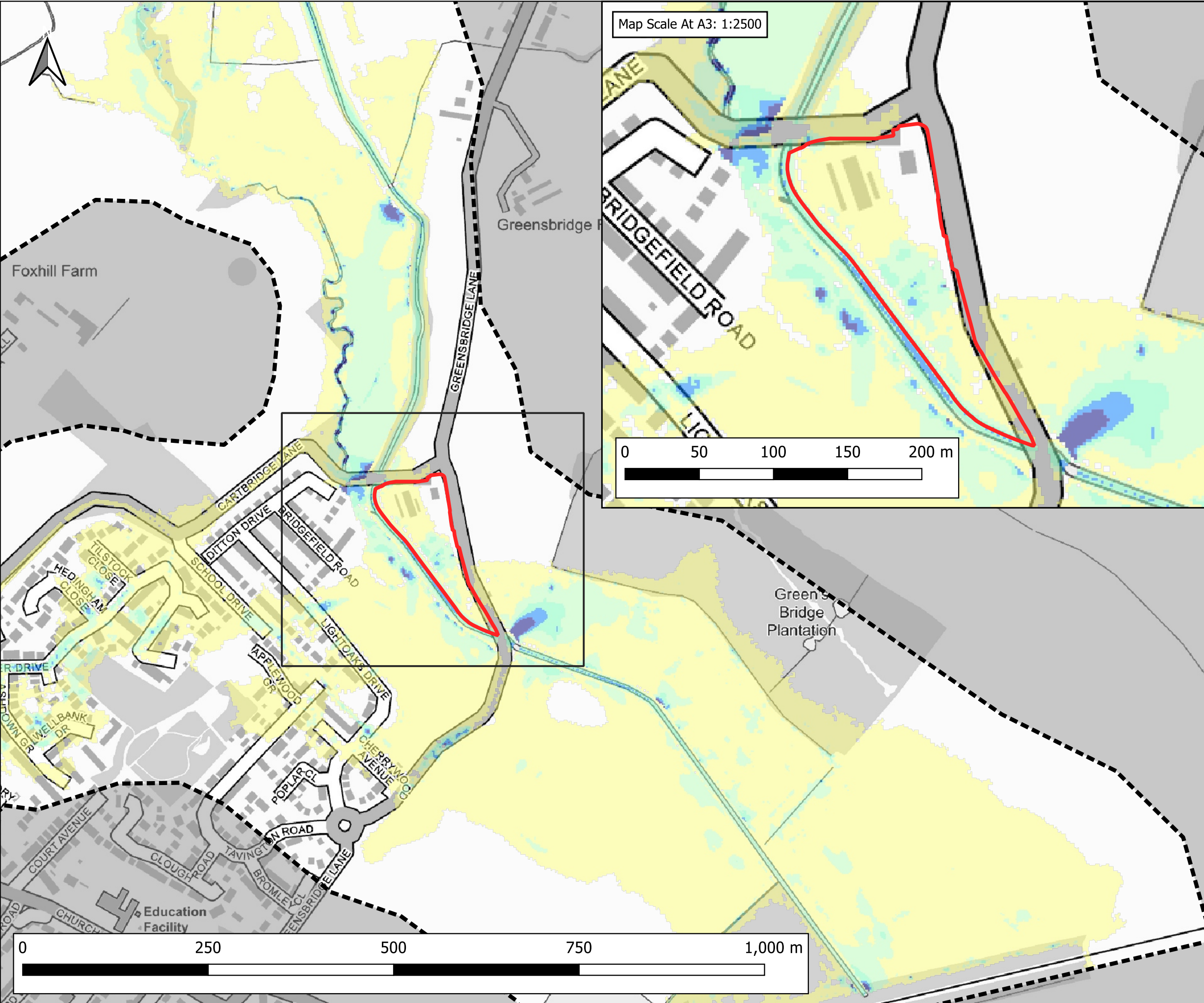
PLOT TITLE:

MAXIMUM FLOOD VELOCITY
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

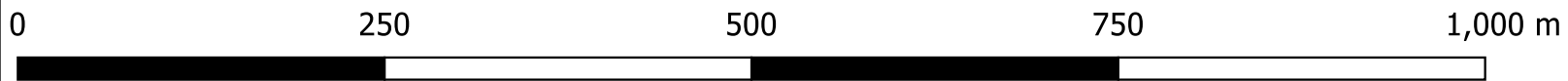
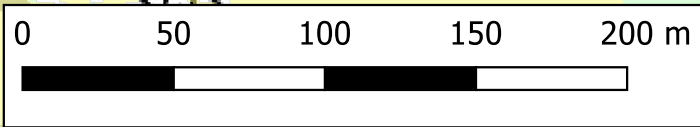
PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q100CC44_DEVSITE_NC_016_V_Max	-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

Site Boundary

Model Extent

Maximum Flood Velocity (m/s)

0.0 - 0.3

0.3 - 0.6

0.6 - 0.9

0.9 - 1.2

> 1.2

CLIENT:

BBE Development Ltd

www.waterco.co.uk

SCHEME:

Former Merseyside Dogs Home,
East Halewood

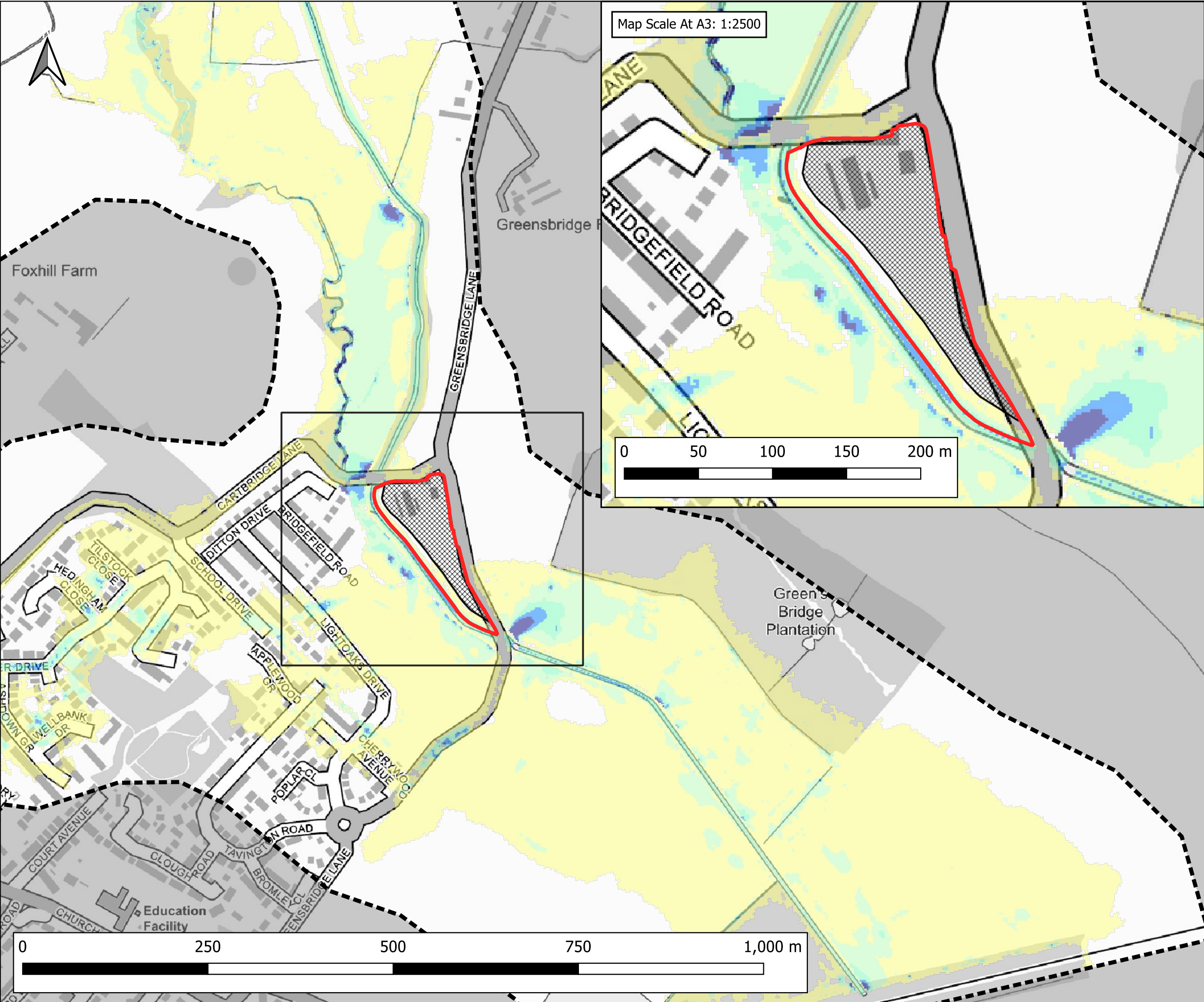
PLOT TITLE:

MAXIMUM FLOOD VELOCITY
0.1% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

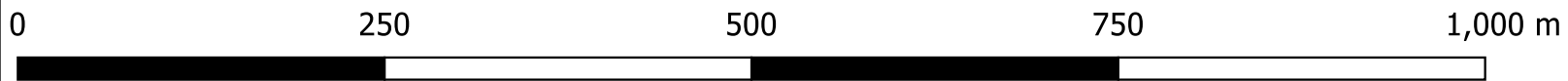
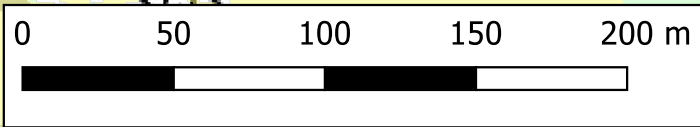
PLOT STATUS:		FINAL		DATE:	03-06-2024
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DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:	
RM	AP	LS	1:5000	

PLOT NAME:	REVISION:
14506_Neth_Q1000_EXG_NC_016_V_Max	-



Map Scale At A3: 1:2500



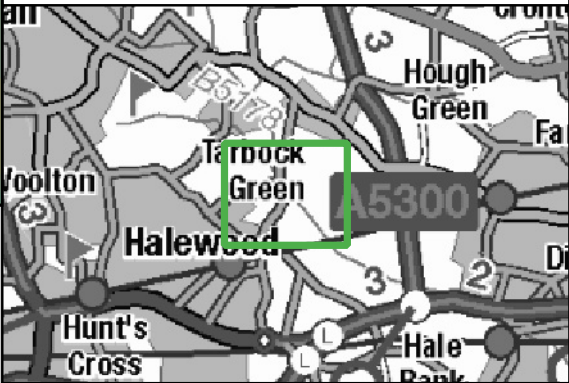
Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

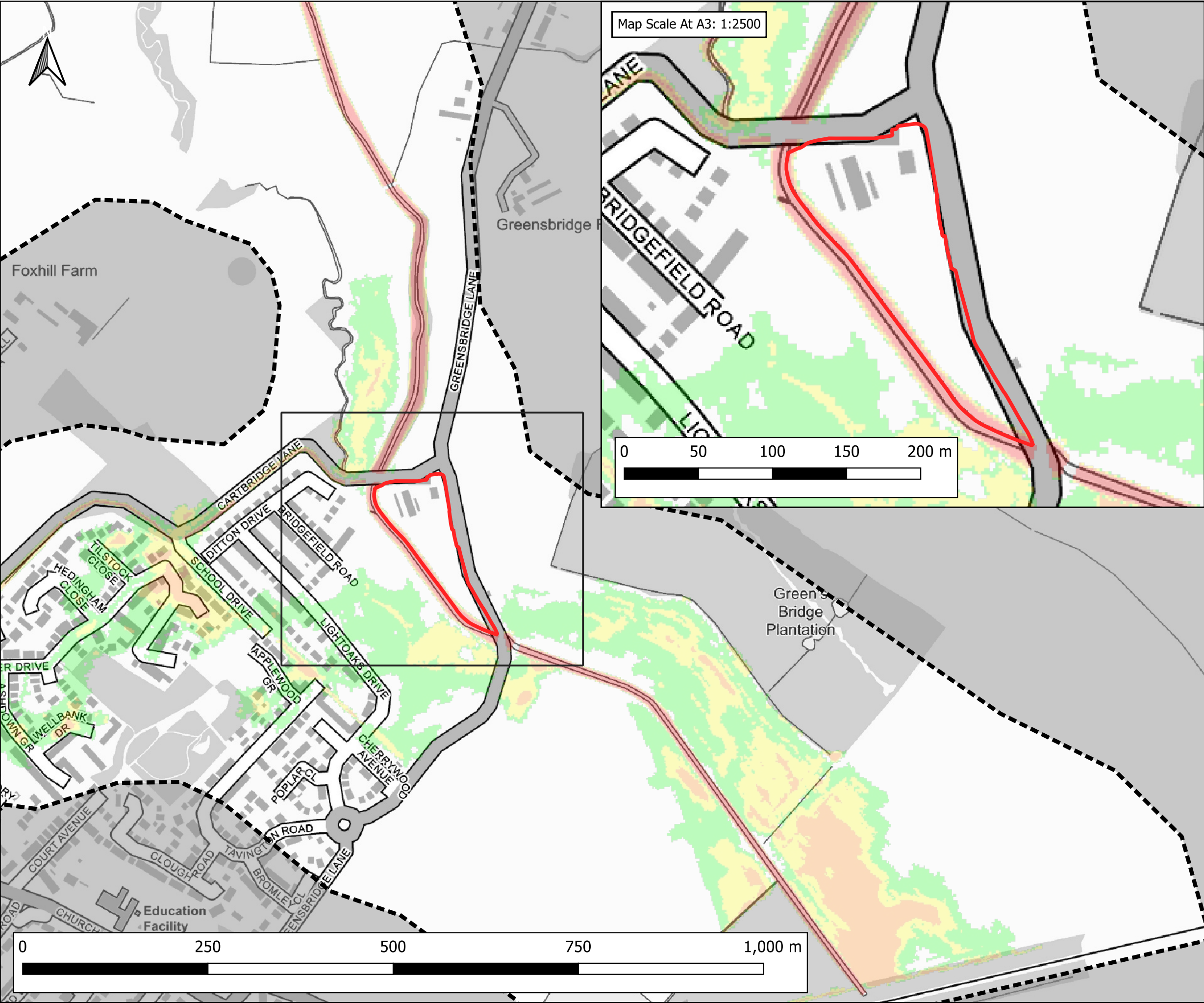
- Site Boundary
- Model Extent
- Development Platform

Maximum Flood Velocity (m/s)

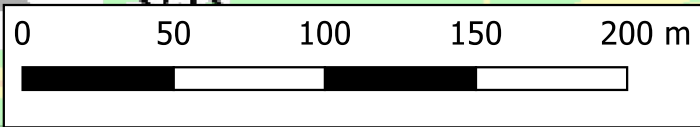
- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2



CLIENT: BBE Development Ltd			
 www.waterco.co.uk			
SCHEME: Former Merseyside Dogs Home, East Halewood			
PLOT TITLE: MAXIMUM FLOOD VELOCITY 0.1% AEP FLUVIAL EVENT PROPOSED DEVELOPMENT SCENARIO (DEVSITE) NORMAL FLOW CONDITIONS (NC)			
PLOT STATUS: FINAL			DATE: 03-06-2024
DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:5000
PLOT NAME: 14506_Neth_Q1000_DEVSITE_NC_016_V_Max			REVISION: -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Flood Hazard Rating (FD2320)
 - Caution
 - Danger for Some
 - Danger for Most
 - Danger for All

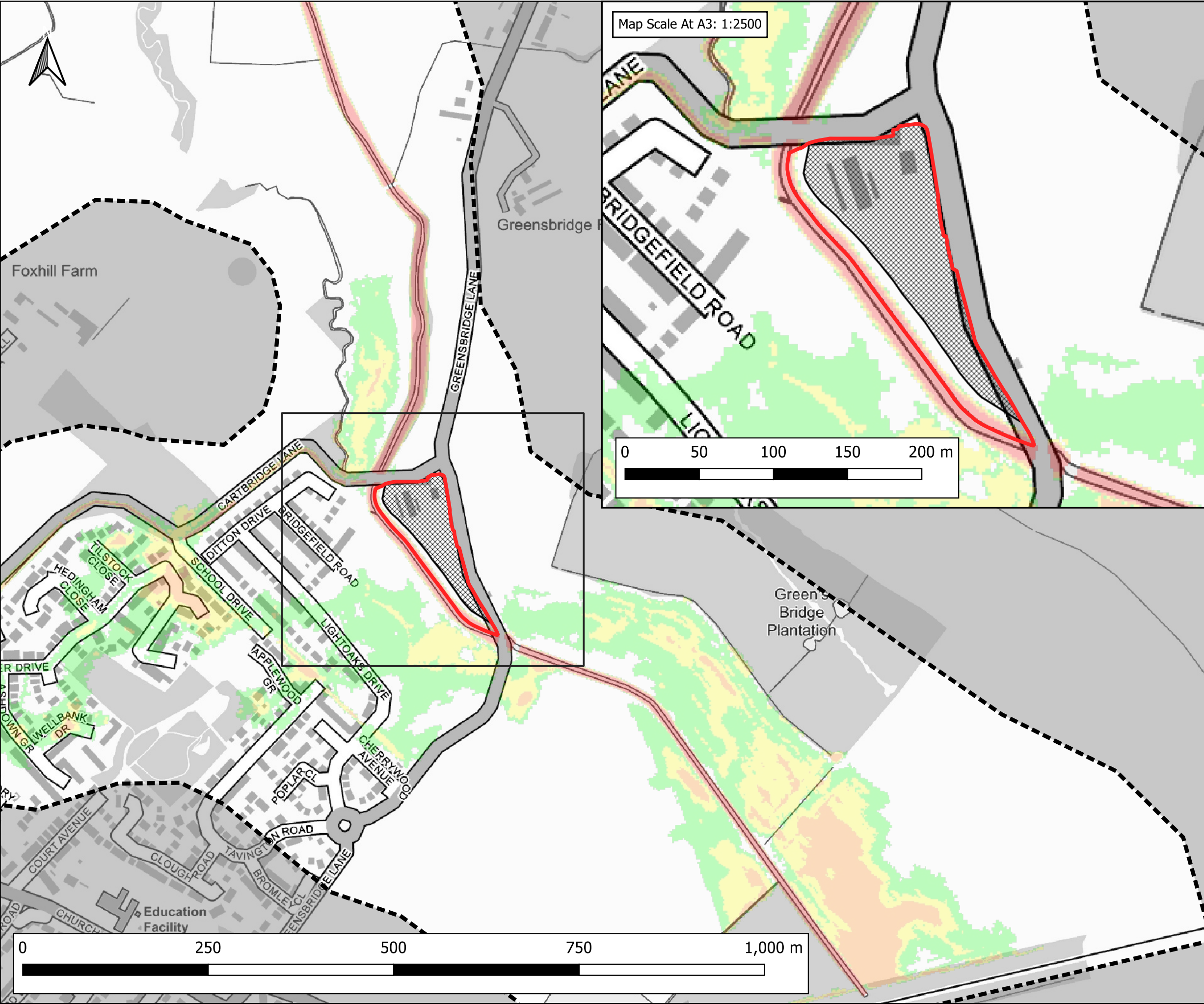
CLIENT:
BBE Development Ltd

waterco
www.waterco.co.uk

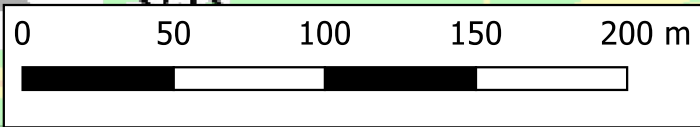
SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
FLOOD HAZARD RATING
5% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS: FINAL			DATE: 03-06-2024
DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:5000
PLOT NAME: 14506_Neth_Q20_EXG_NC_016_ZUK2_Max			REVISION: -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Flood Hazard Rating (FD2320)

- Caution
- Danger for Some
- Danger for Most
- Danger for All

CLIENT:
BBE Development Ltd

waterco
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SCHEME:
Former Merseyside Dogs Home, East Halewood

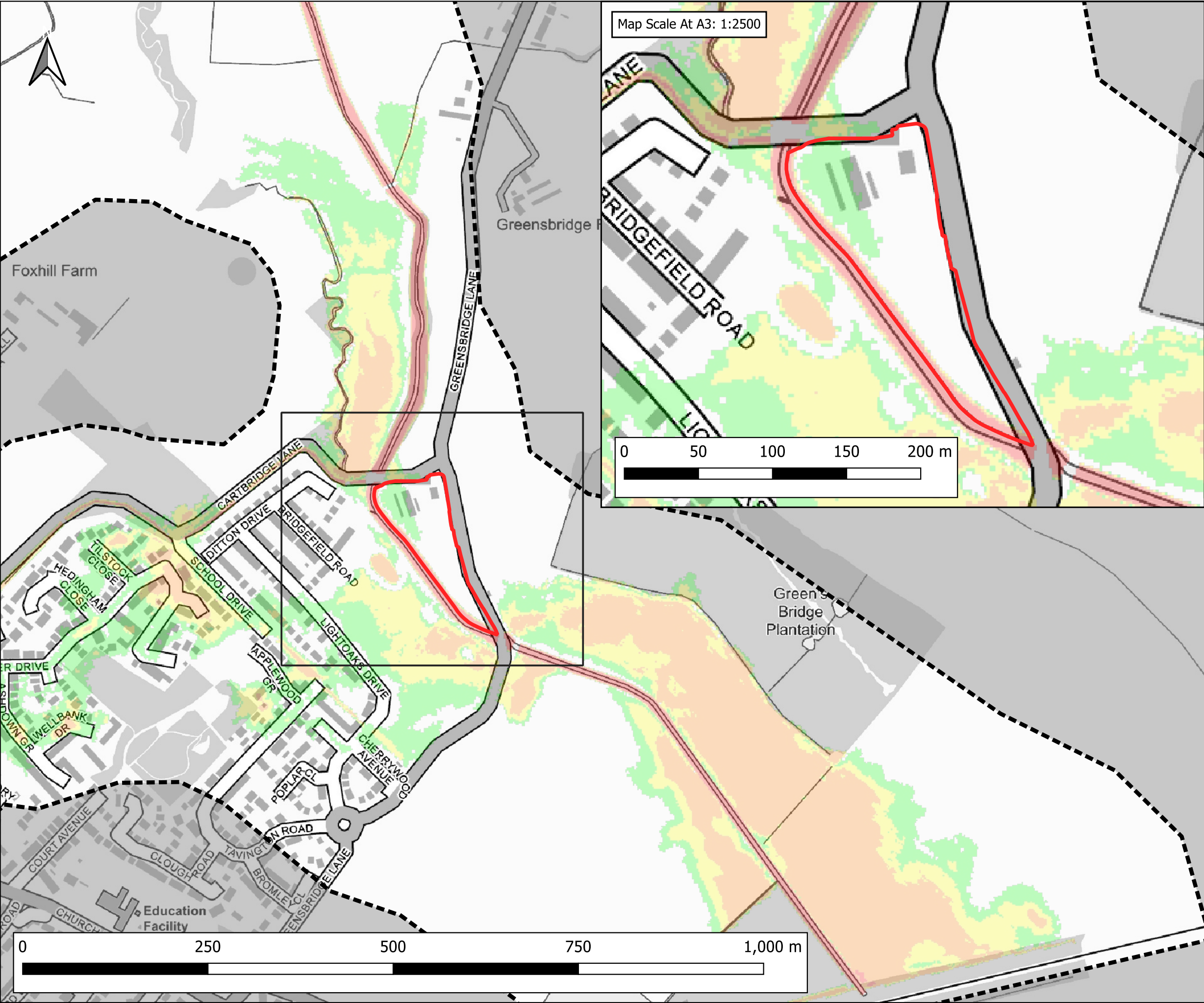
PLOT TITLE:
FLOOD HAZARD RATING
5% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:
FINAL

DATE:
03-06-2024

DRAWN: RM **CHECKED:** AP **APPROVED:** LS **PLOT SCALE AT A3:** 1:5000

PLOT NAME: 14506_Neth_Q20_DEVSITE_NC_016_ZUK2_Max **REVISION:** -



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Flood Hazard Rating (FD2320)
 - Caution
 - Danger for Some
 - Danger for Most
 - Danger for All

CLIENT:

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SCHEME:

Former Merseyside Dogs Home, East Halewood

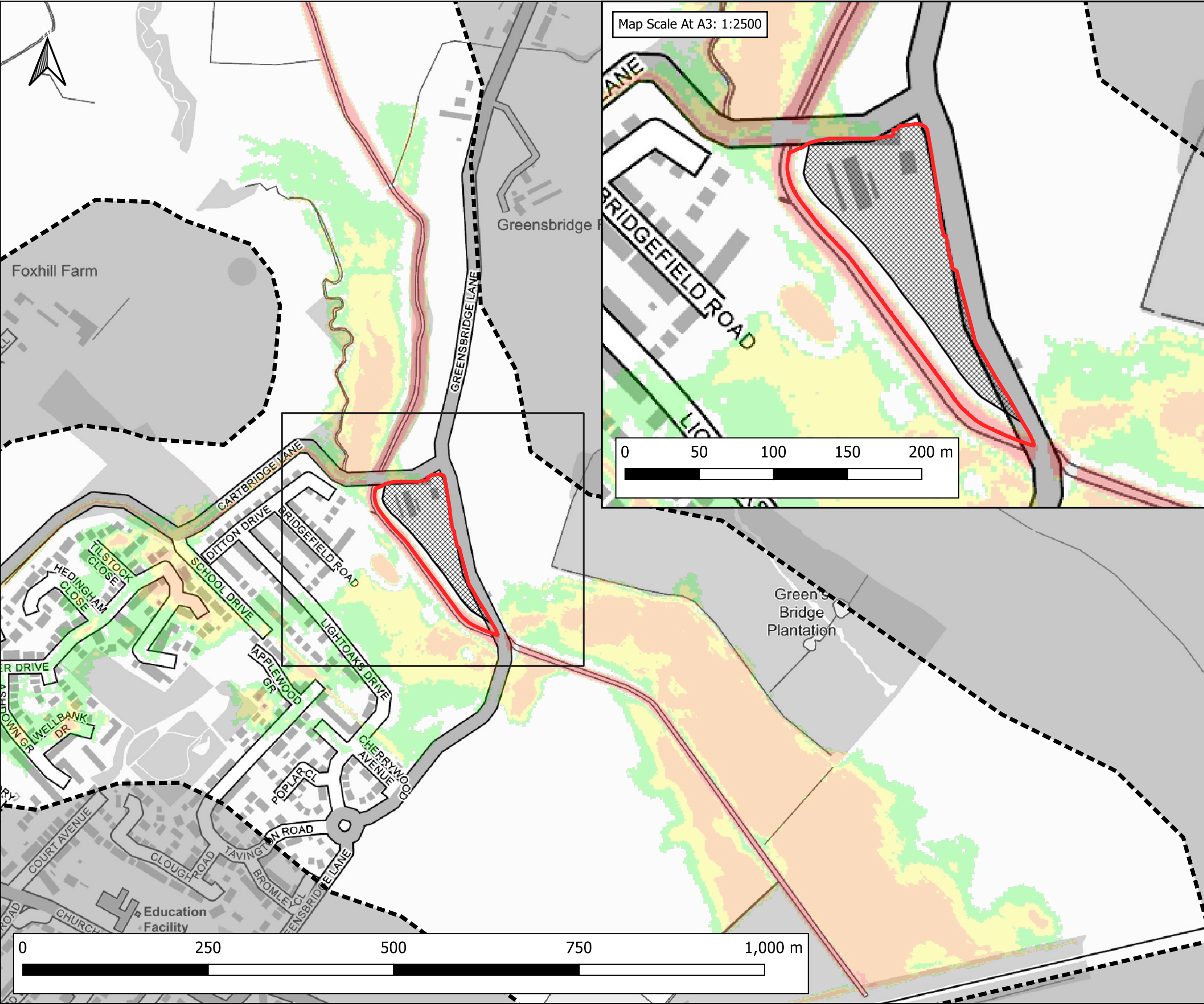
PLOT TITLE:

FLOOD HAZARD RATING
1% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

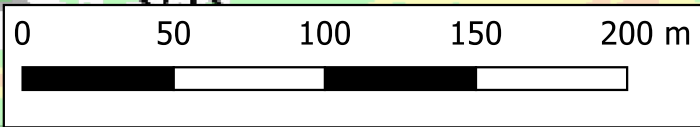
PLOT STATUS:		FINAL		DATE:	03-06-2024
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DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q100_EXG_NC_016_ZUK2_Max	-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform
- Flood Hazard Rating (FD2320)
 - Caution
 - Danger for Some
 - Danger for Most
 - Danger for All

CLIENT:

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SCHEME:

Former Merseyside Dogs Home, East Halewood

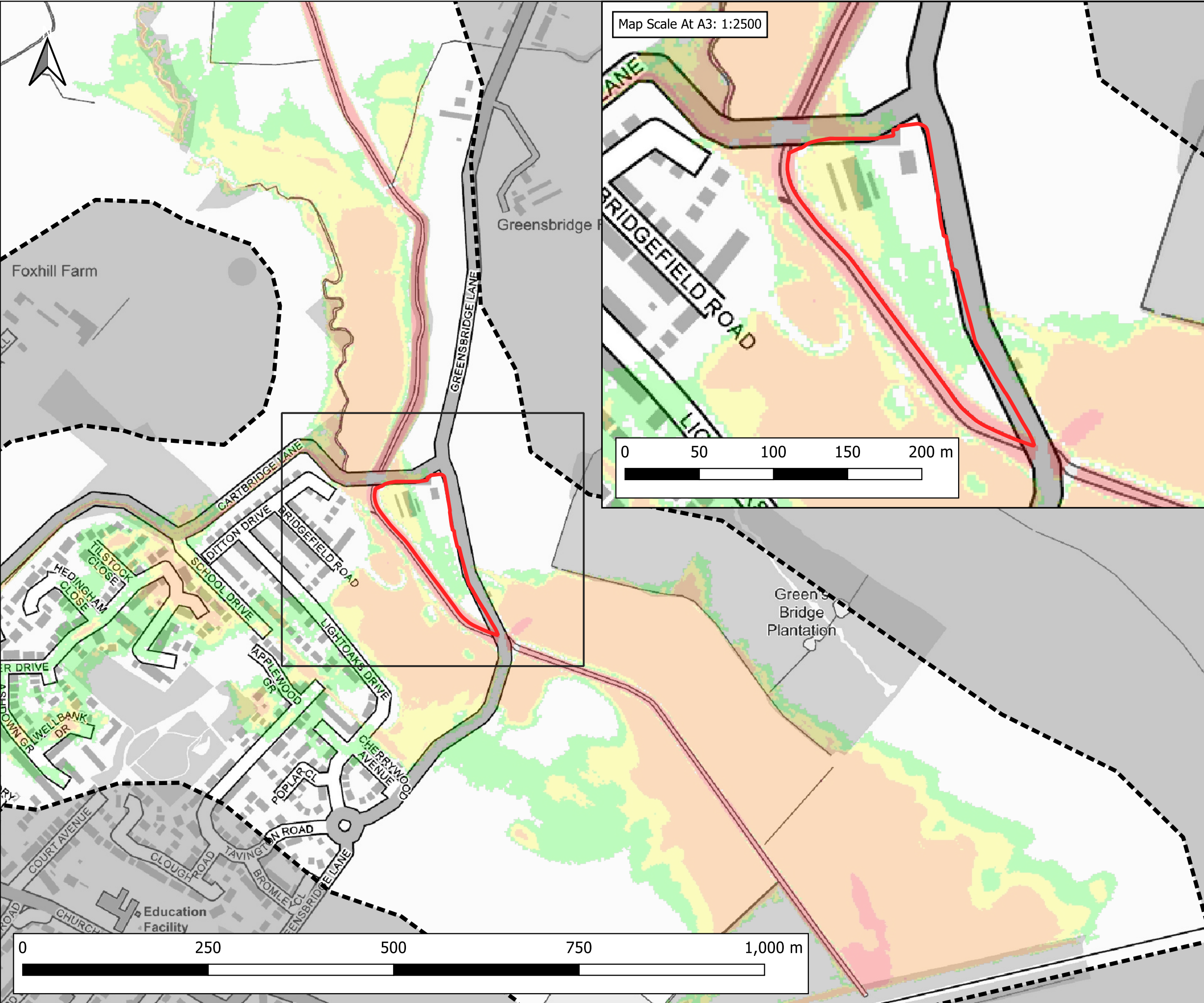
PLOT TITLE:

FLOOD HAZARD RATING
1% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q100_DEVSITE_NC_016_ZUK2_Max	-



Map Scale At A3: 1:2500

0 50 100 150 200 m

0 250 500 750 1,000 m

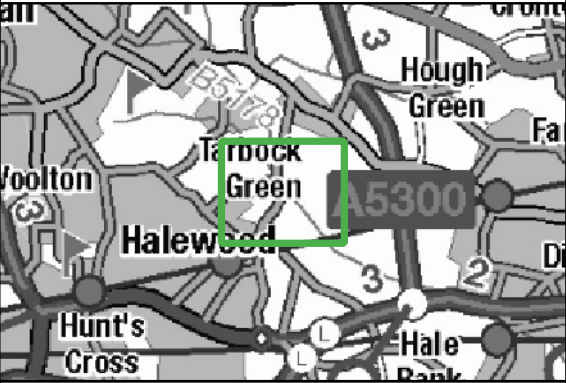
Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

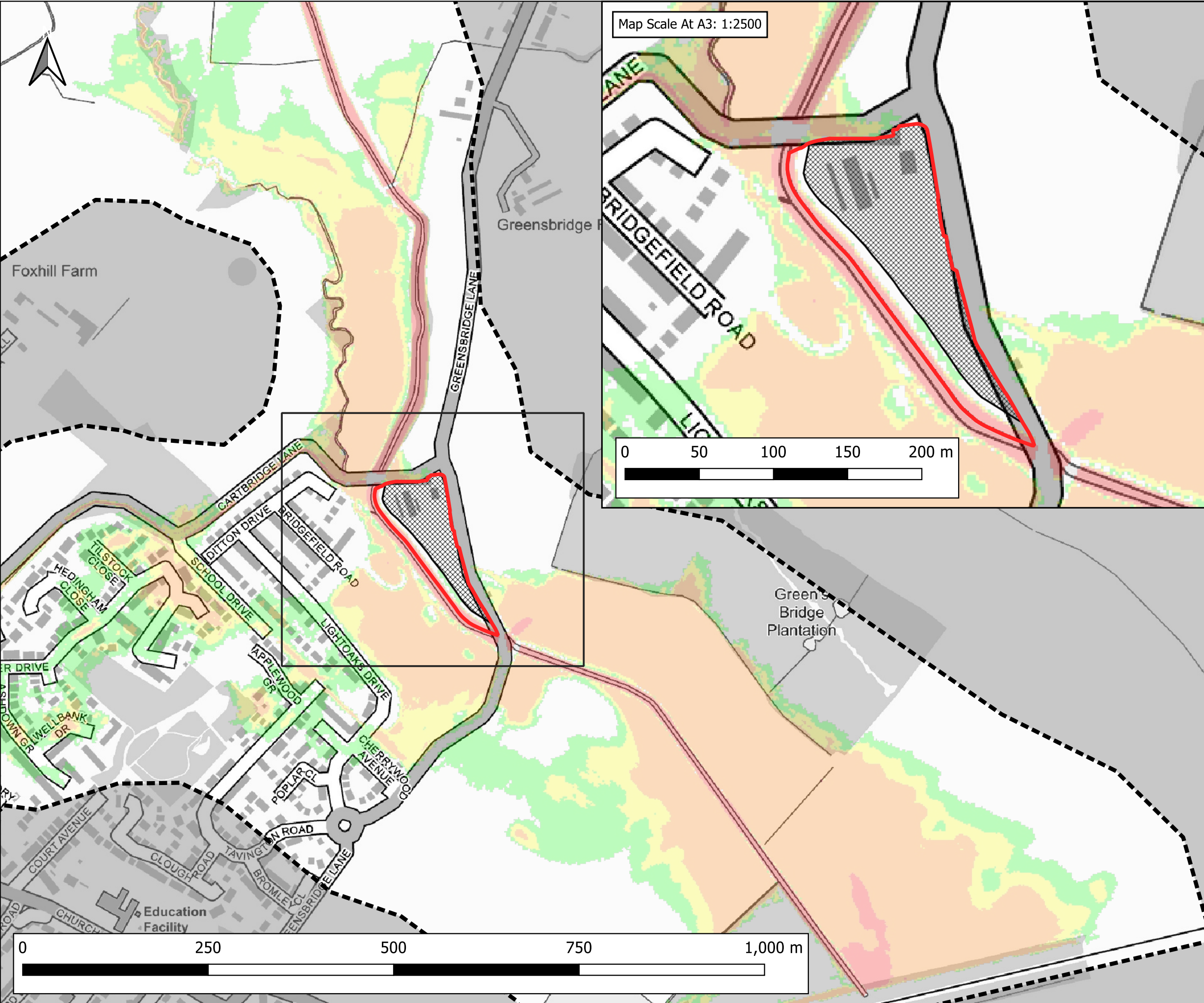
- Site Boundary
- Model Extent

Flood Hazard Rating (FD2320)

- Caution
- Danger for Some
- Danger for Most
- Danger for All



CLIENT: BBE Development Ltd			
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SCHEME: Former Merseyside Dogs Home, East Halewood			
PLOT TITLE: FLOOD HAZARD RATING 1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT EXISTING SCENARIO (EXG) NORMAL FLOW CONDITIONS (NC)			
PLOT STATUS: FINAL			DATE: 03-06-2024
DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:5000
PLOT NAME: 14506_Neth_Q100CC44_EXG_NC_016_ZUK2_Max			REVISION: -



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Flood Hazard Rating (FD2320)

- Caution
- Danger for Some
- Danger for Most
- Danger for All

CLIENT:
BBE Development Ltd

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SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
FLOOD HAZARD RATING
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

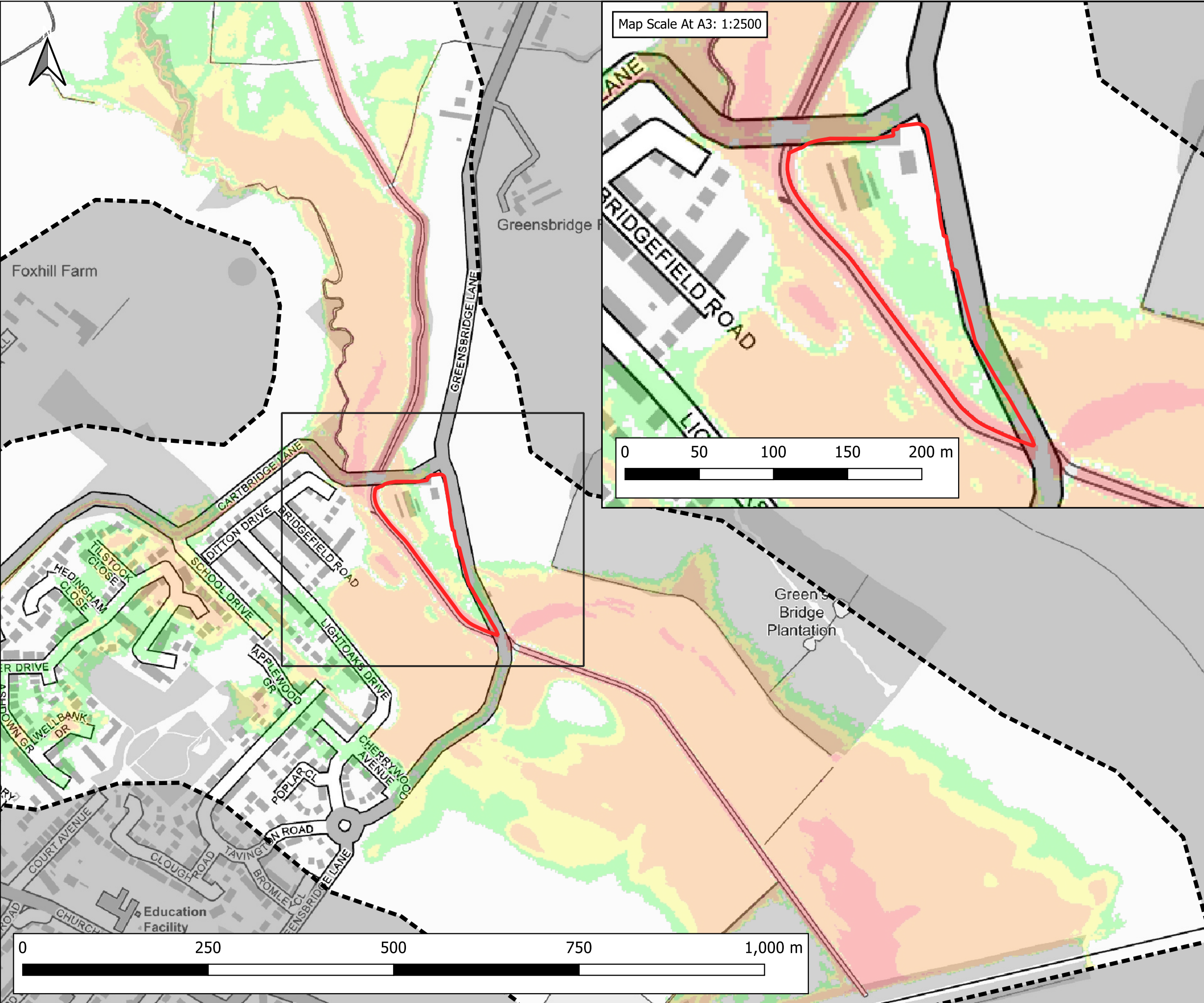
PLOT STATUS:
FINAL

DATE:
03-06-2024

DRAWN: **RM** CHECKED: **AP** APPROVED: **LS** PLOT SCALE AT A3:
1:5000

PLOT NAME:
14506_Neth_Q100CC44_DEVSITE_NC_016_ZUK2_Max

REVISION:
-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Flood Hazard Rating (FD2320)
 - Caution
 - Danger for Some
 - Danger for Most
 - Danger for All

CLIENT:

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SCHEME:

Former Merseyside Dogs Home,
East Halewood

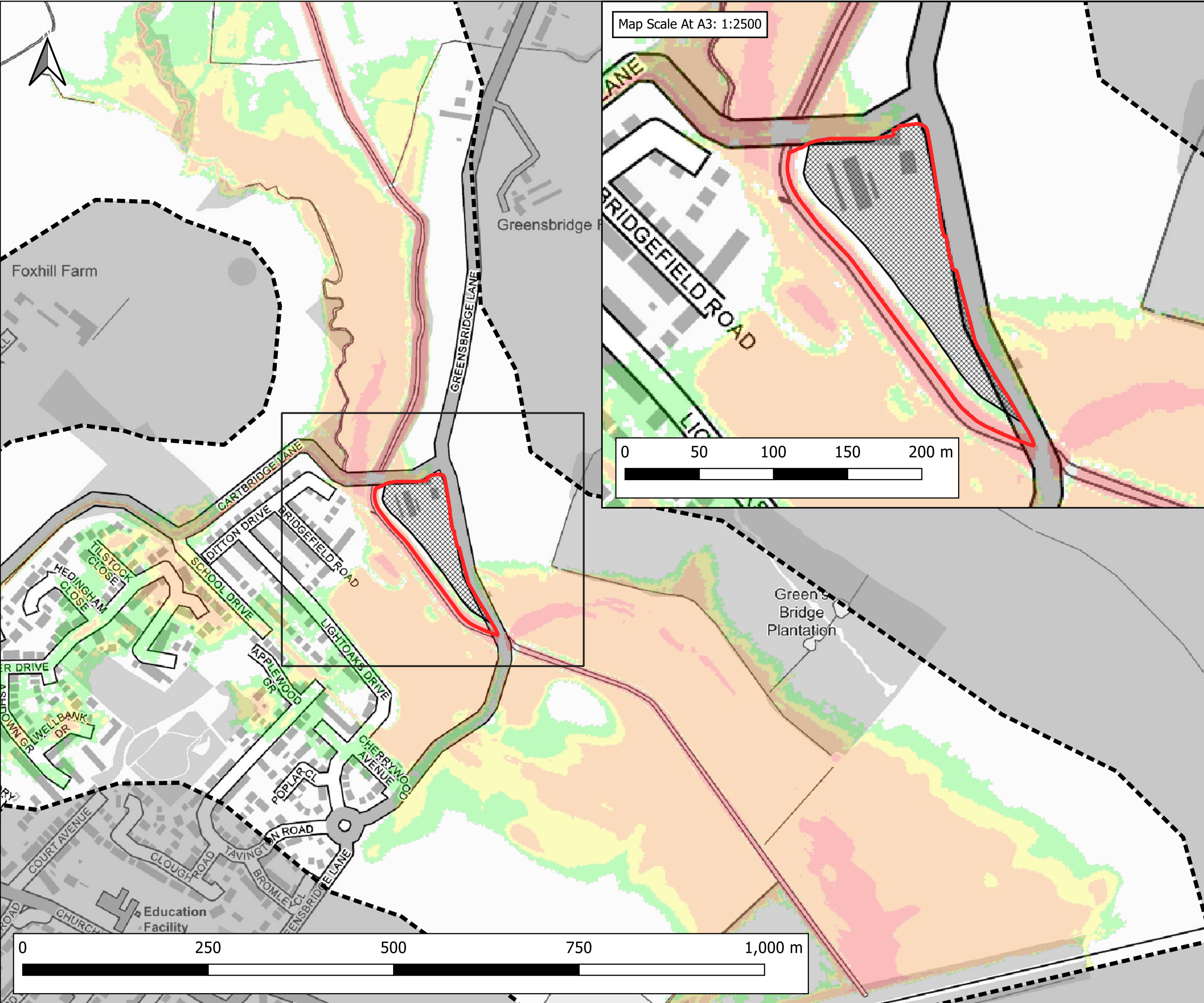
PLOT TITLE:

FLOOD HAZARD RATING
0.1% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q1000_EXG_NC_016_ZUK2_Max	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform

Flood Hazard Rating (FD2320)

- Caution
- Danger for Some
- Danger for Most
- Danger for All

CLIENT:
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SCHEME:
Former Merseyside Dogs Home, East Halewood

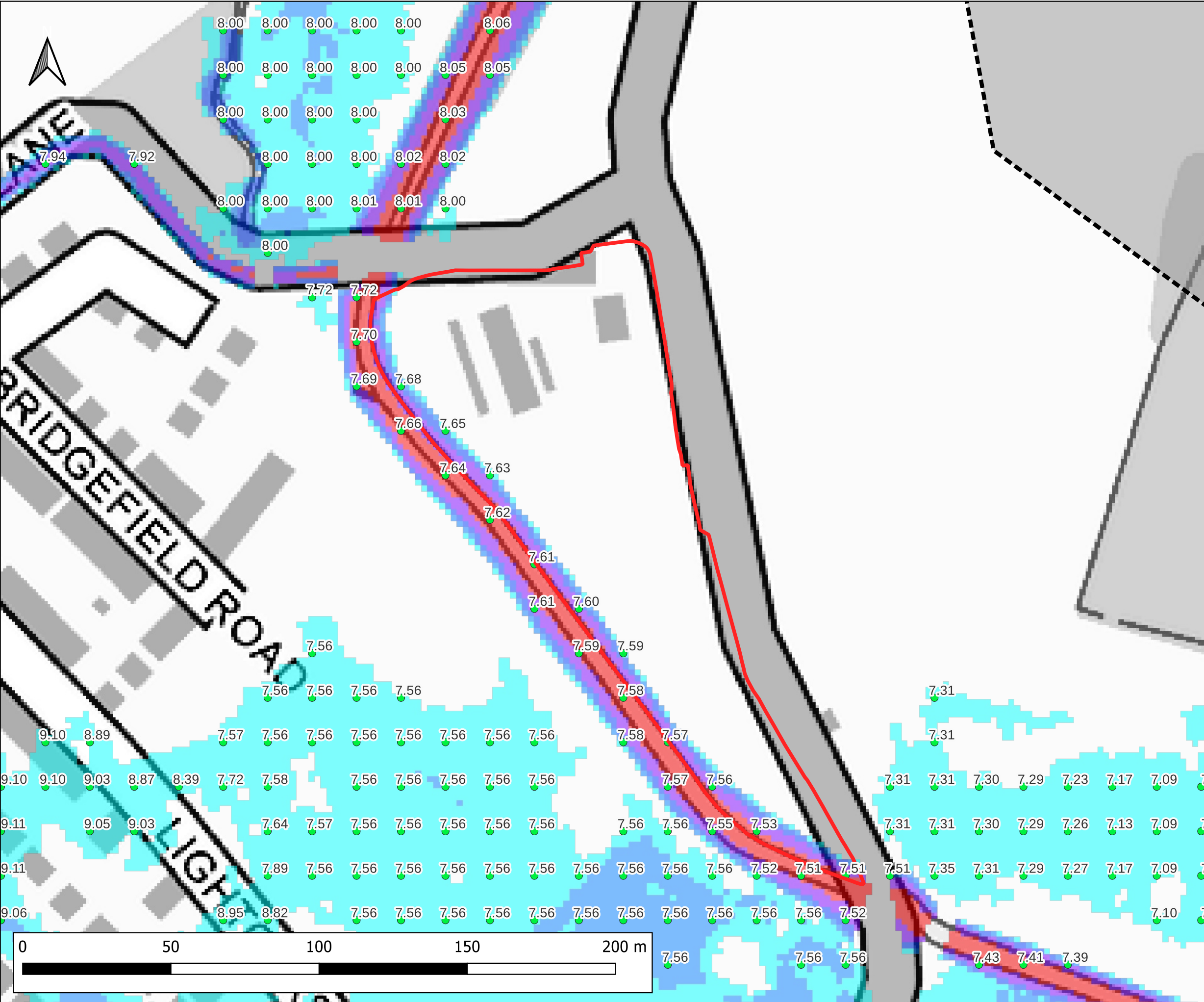
PLOT TITLE:
FLOOD HAZARD RATING
0.1% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:
FINAL

DATE:
03-06-2024

DRAWN: RM **CHECKED:** AP **APPROVED:** LS **PLOT SCALE AT A3:** 1:5000

PLOT NAME: 14506_Neth_Q1000_DEVSITE_NC_016_ZUK2_Max **REVISION:** -



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Maximum Water Level (m AOD)

Maximum Flood Depth

- ≤ 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

Map Inset: A small map showing the location of the site within the area of Hough Green, Tarbock Green, Woolton, Halewood, and Hunt's Cross, near the A5300.

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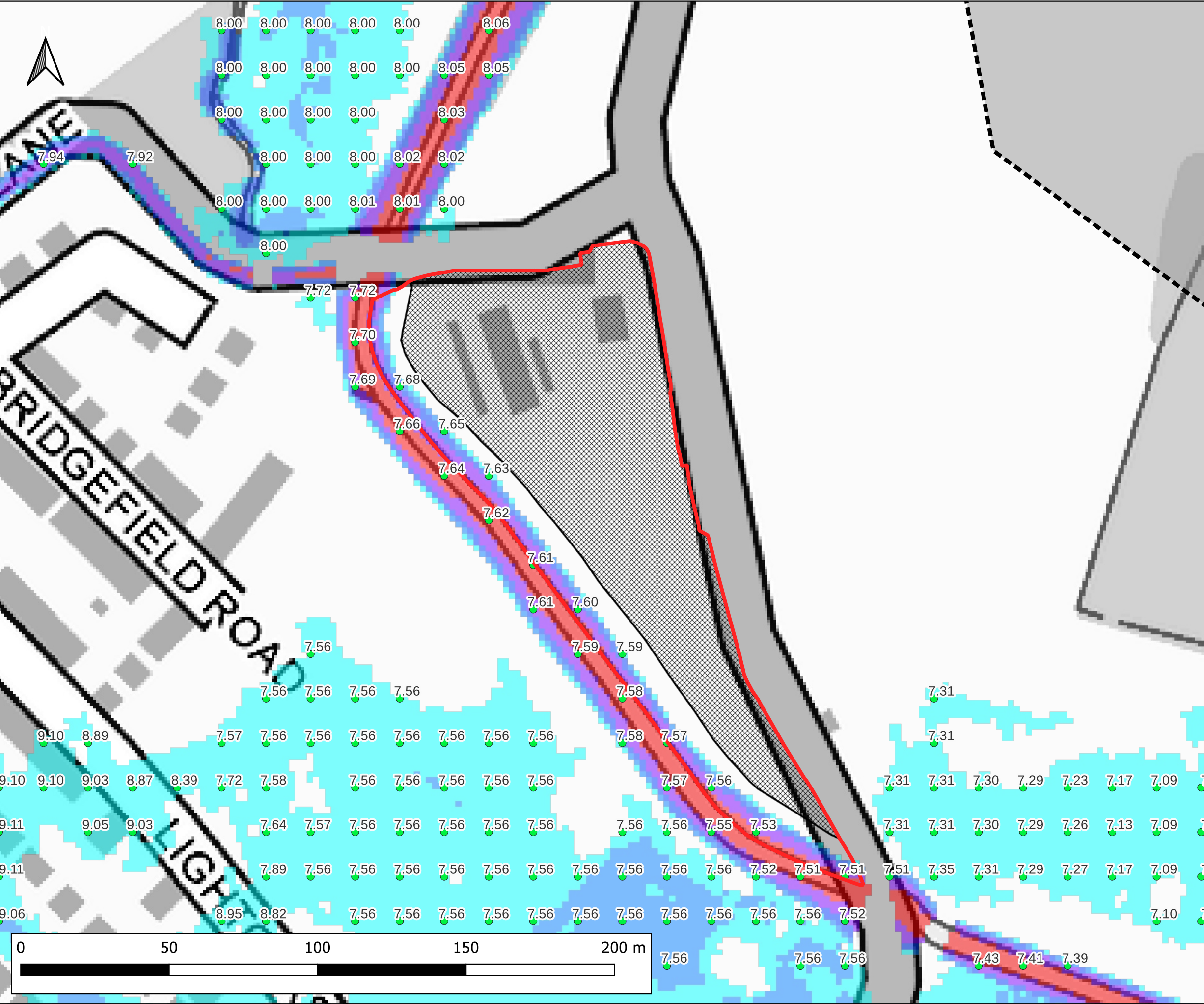
SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
MAXIMUM WATER LEVEL
5% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS: FINAL **DATE:** 03-06-2024

DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:1250
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PLOT NAME: 14506_Neth_Q20_EXG_NC_016_h_Max **REVISION:** -



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform
- Maximum Water Level (m AOD)

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

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SCHEME:

Former Merseyside Dogs Home, East Halewood

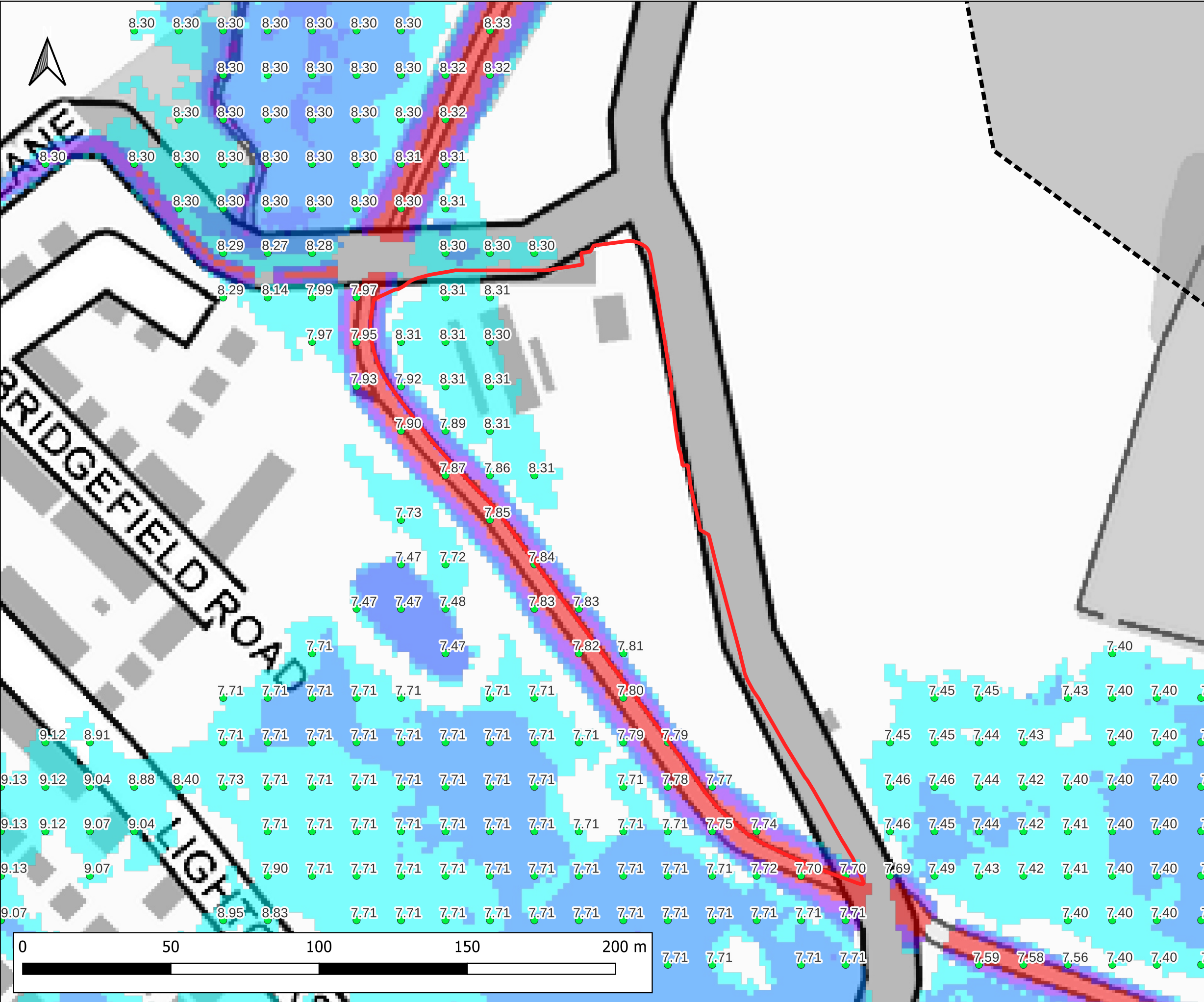
PLOT TITLE:

MAXIMUM WATER LEVEL
5% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:1250

PLOT NAME:	REVISION:
14506_Neth_Q20_DEVSITE_NC_016_h_Max	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

Site Boundary

Model Extent

Maximum Water Level (m AOD)

Maximum Flood Depth

<= 0.3m

0.3m - 0.6m

0.6m - 1.2m

1.2m - 2.4m

> 2.4m

CLIENT:

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SCHEME:

Former Merseyside Dogs Home,
East Halewood

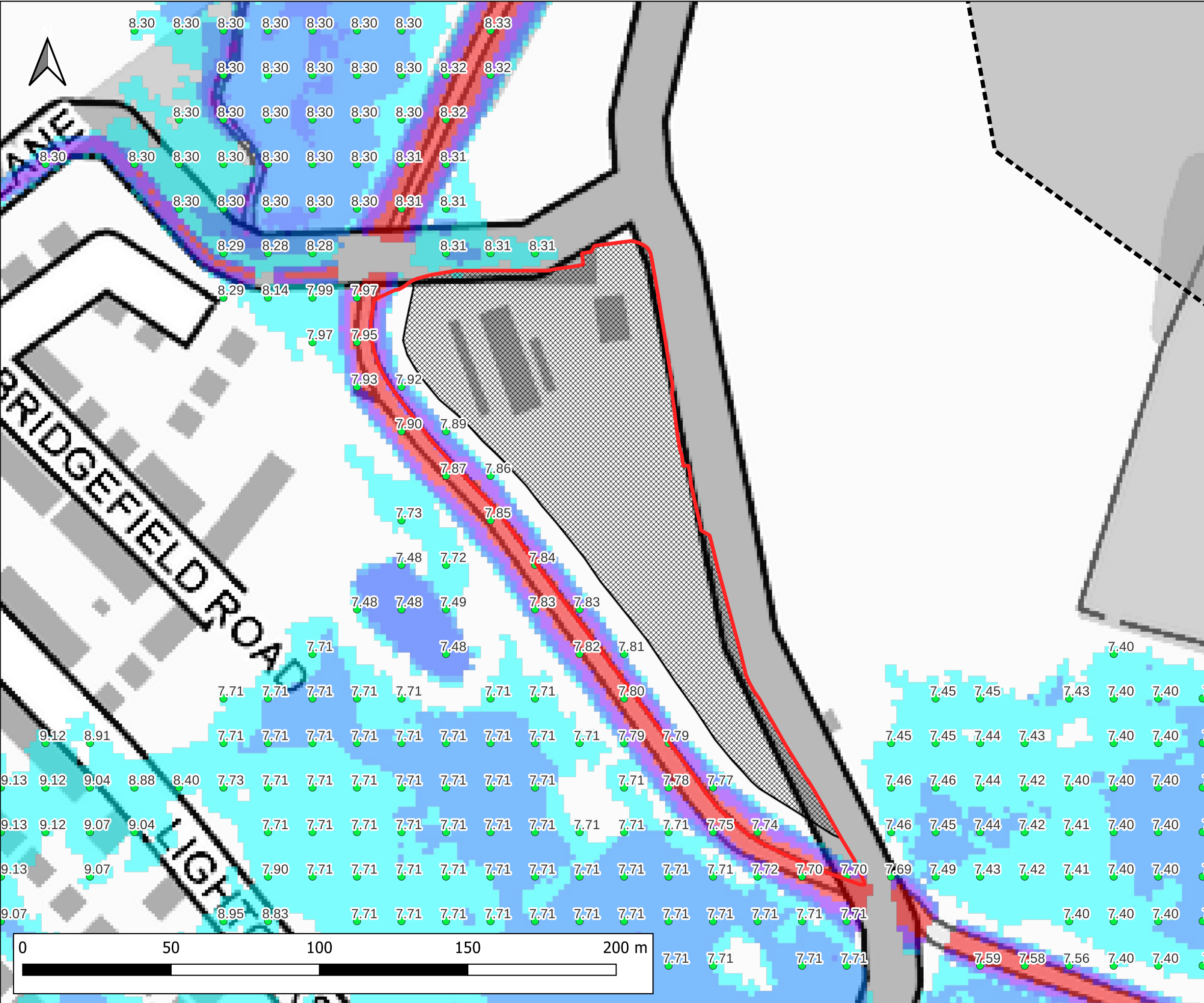
PLOT TITLE:

MAXIMUM WATER LEVEL
1% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:1250

PLOT NAME:	REVISION:
14506_Neth_Q100_EXG_NC_016_h_Max	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform
- Maximum Water Level (m AOD)

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

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SCHEME:

Former Merseyside Dogs Home, East Halewood

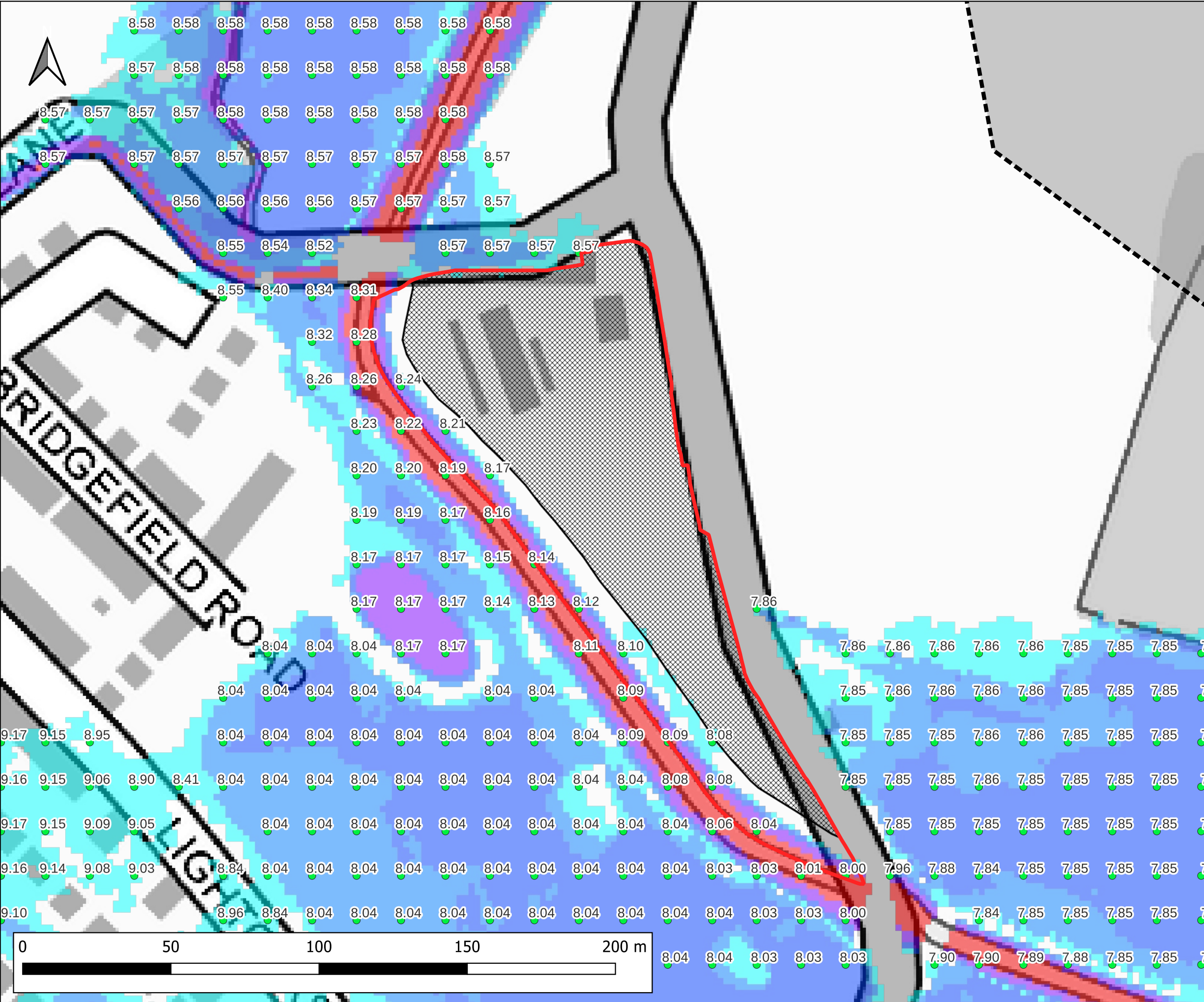
PLOT TITLE:

MAXIMUM WATER LEVEL
1% AEP FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:1250

PLOT NAME:	REVISION:
14506_Neth_Q100_DEVSITE_NC_016_h_Max	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform
- Maximum Water Level (m AOD)

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m



CLIENT:

BBE Development Ltd



SCHEME:

Former Merseyside Dogs Home,
East Halewood

PLOT TITLE:

MAXIMUM WATER LEVEL
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:

FINAL

DATE:

03-06-2024

DRAWN:

RM

CHECKED:

AP

APPROVED:

LS

PLOT SCALE AT A3:

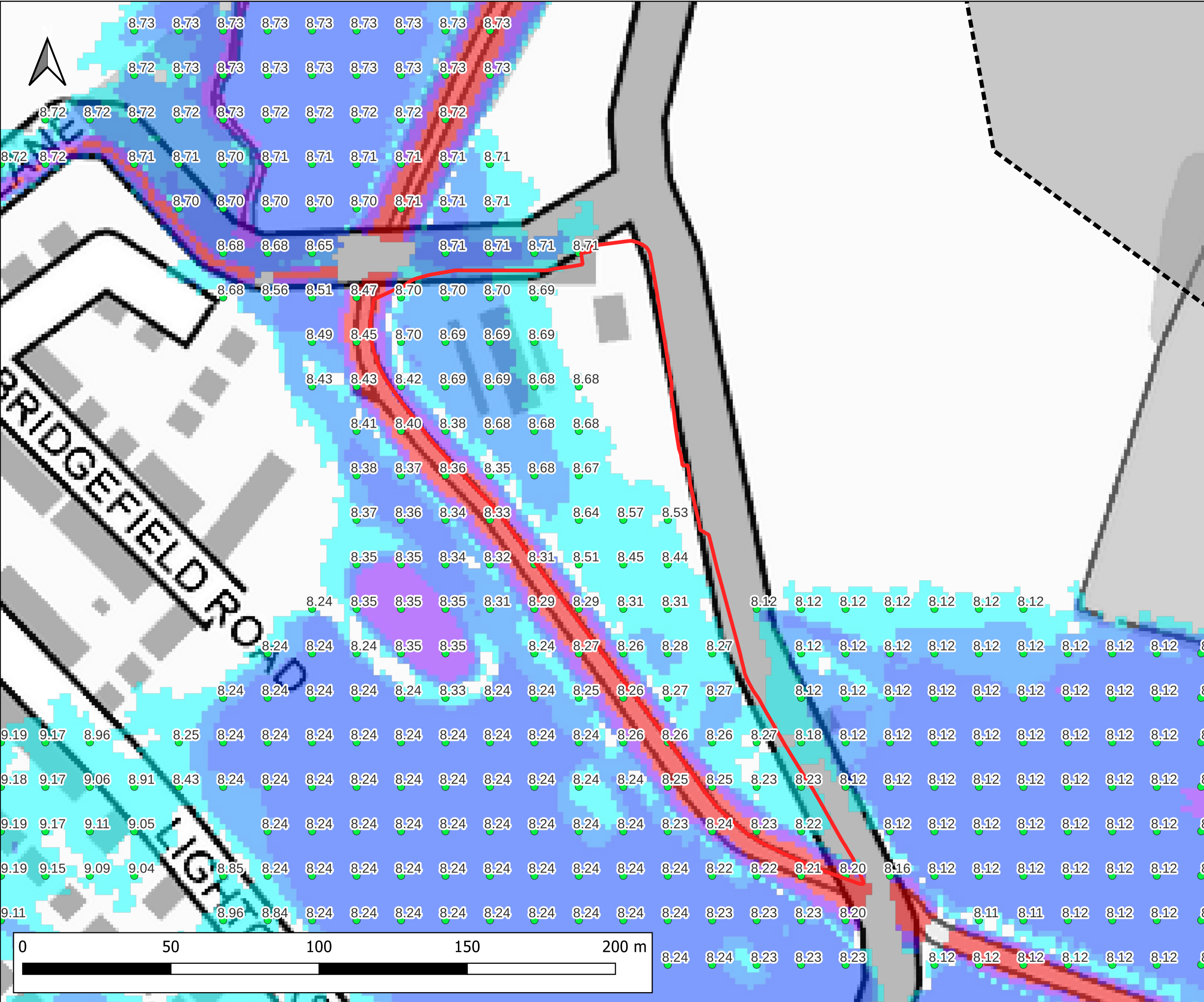
1:1250

PLOT NAME:

14506_Neth_Q100CC44_DEVSITE_NC_016_h_Max

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

Site Boundary

Model Extent

Maximum Water Level (m AOD)

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

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SCHEME:

Former Merseyside Dogs Home, East Halewood

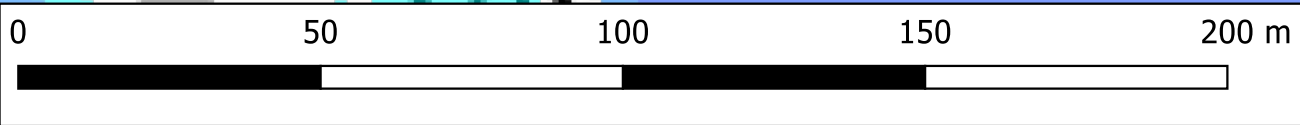
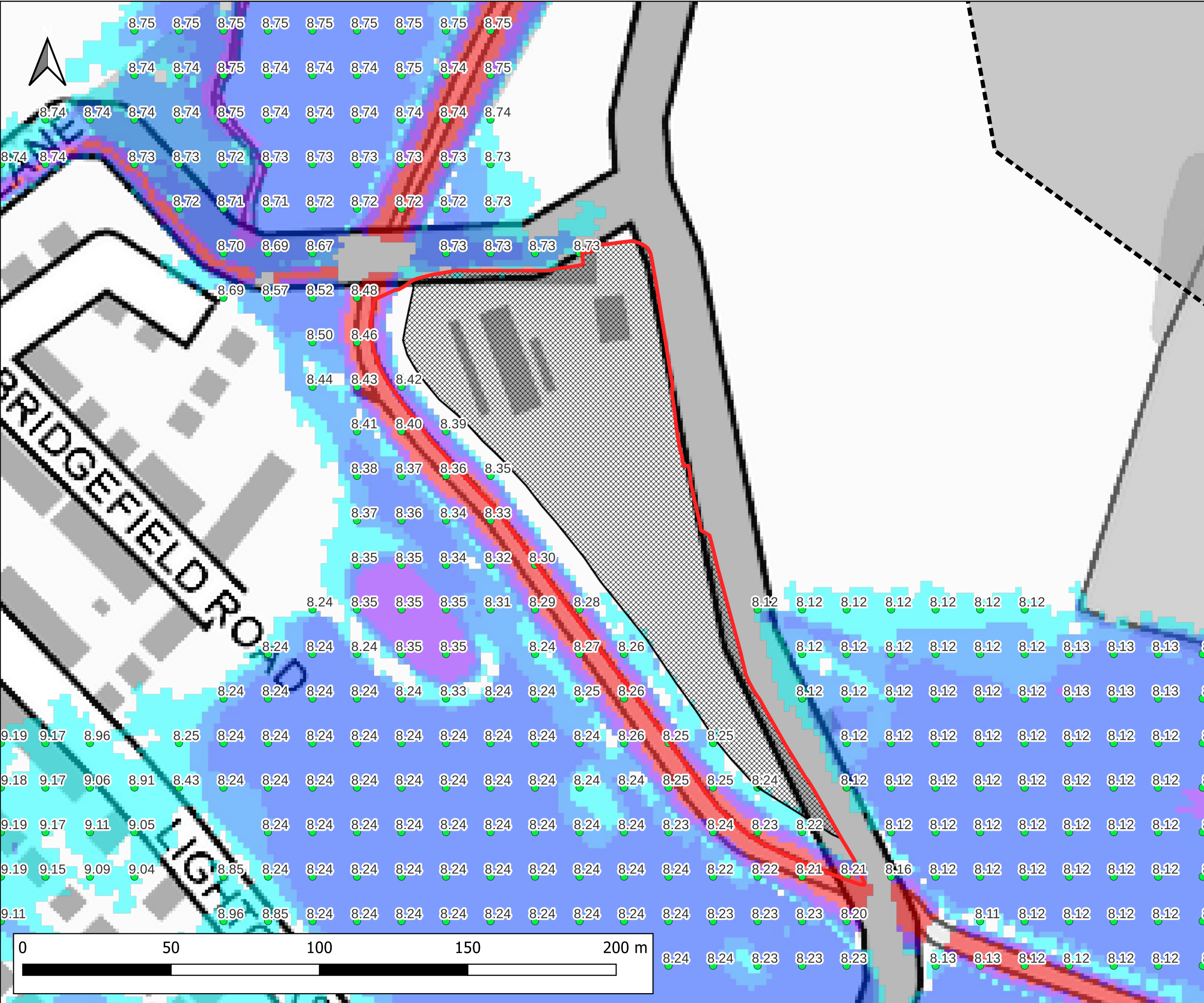
PLOT TITLE:

MAXIMUM WATER LEVEL
0.1% AEP FLUVIAL EVENT
EXISTING SCENARIO (EXG)
NORMAL FLOW CONDITIONS (NC)

PLOT STATUS:			DATE:
FINAL			03-06-2024

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:1250

PLOT NAME:	REVISION:
14506_Neth_Q1000_EXG_NC_016_h_Max	-



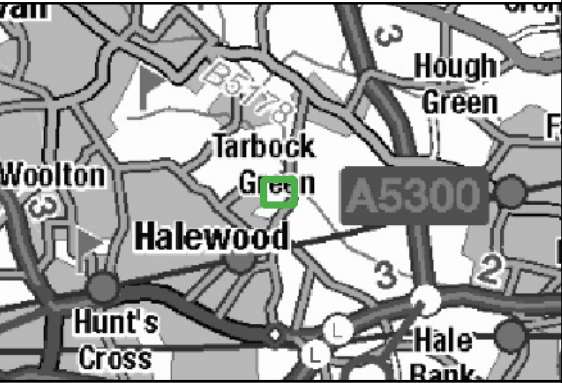
Notes:
 1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

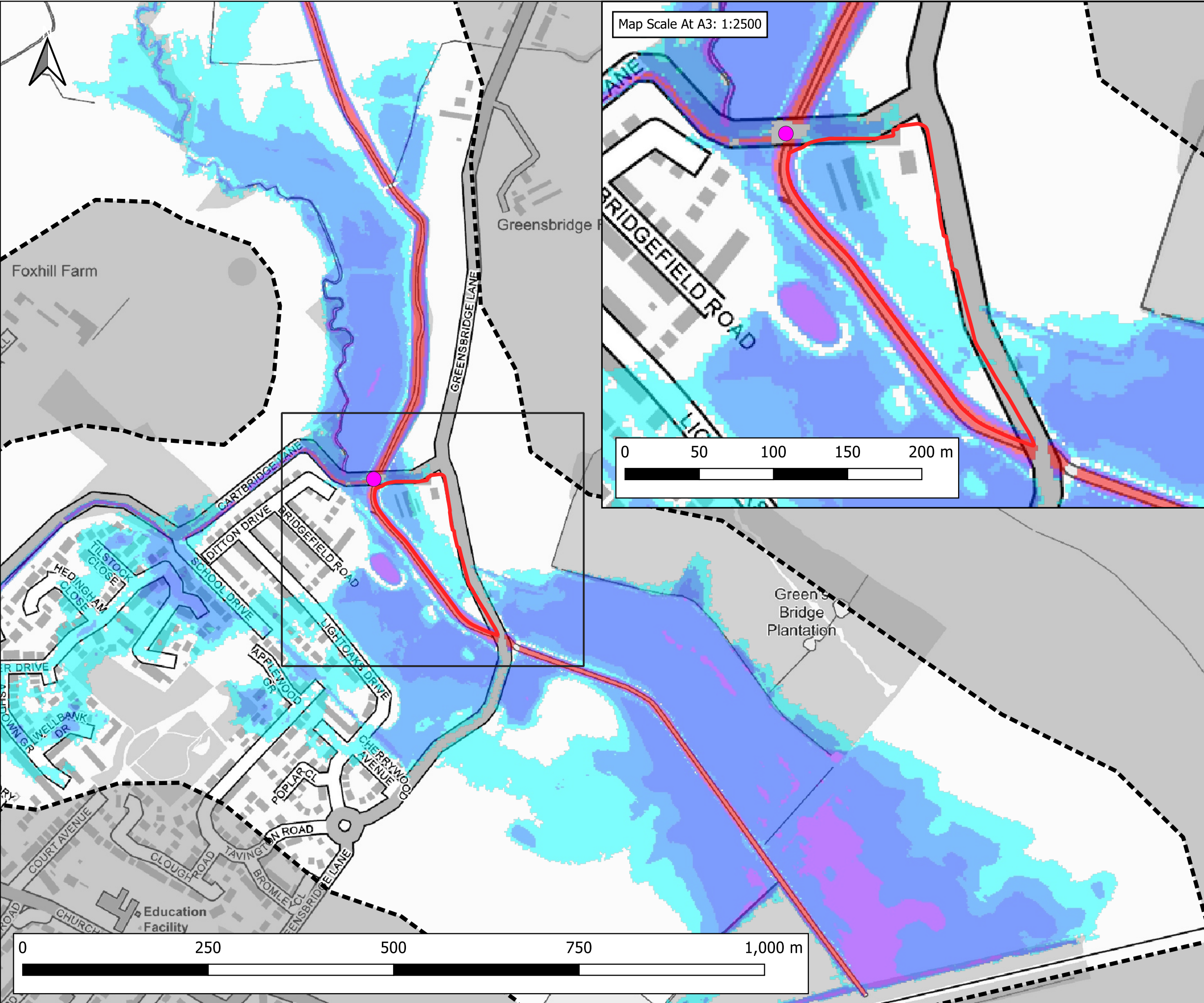
- Site Boundary
- Model Extent
- Development Platform
- Maximum Water Level (m AOD)

Maximum Flood Depth

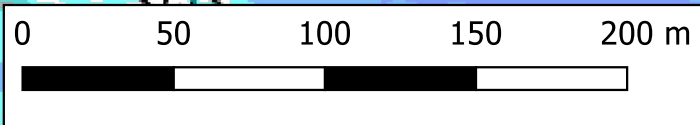
- ≤ 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m



CLIENT:			
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SCHEME:			
Former Merseyside Dogs Home, East Halewood			
PLOT TITLE:			
MAXIMUM WATER LEVEL 0.1% AEP FLUVIAL EVENT PROPOSED DEVELOPMENT SCENARIO (DEVSITE) NORMAL FLOW CONDITIONS (NC)			
PLOT STATUS:			DATE:
FINAL			03-06-2024
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:1250
PLOT NAME:			REVISION:
14506_Neth_Q1000_DEVSITE_NC_016_h_Max			-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Cartridge Lane Blockage Location (BL1)

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

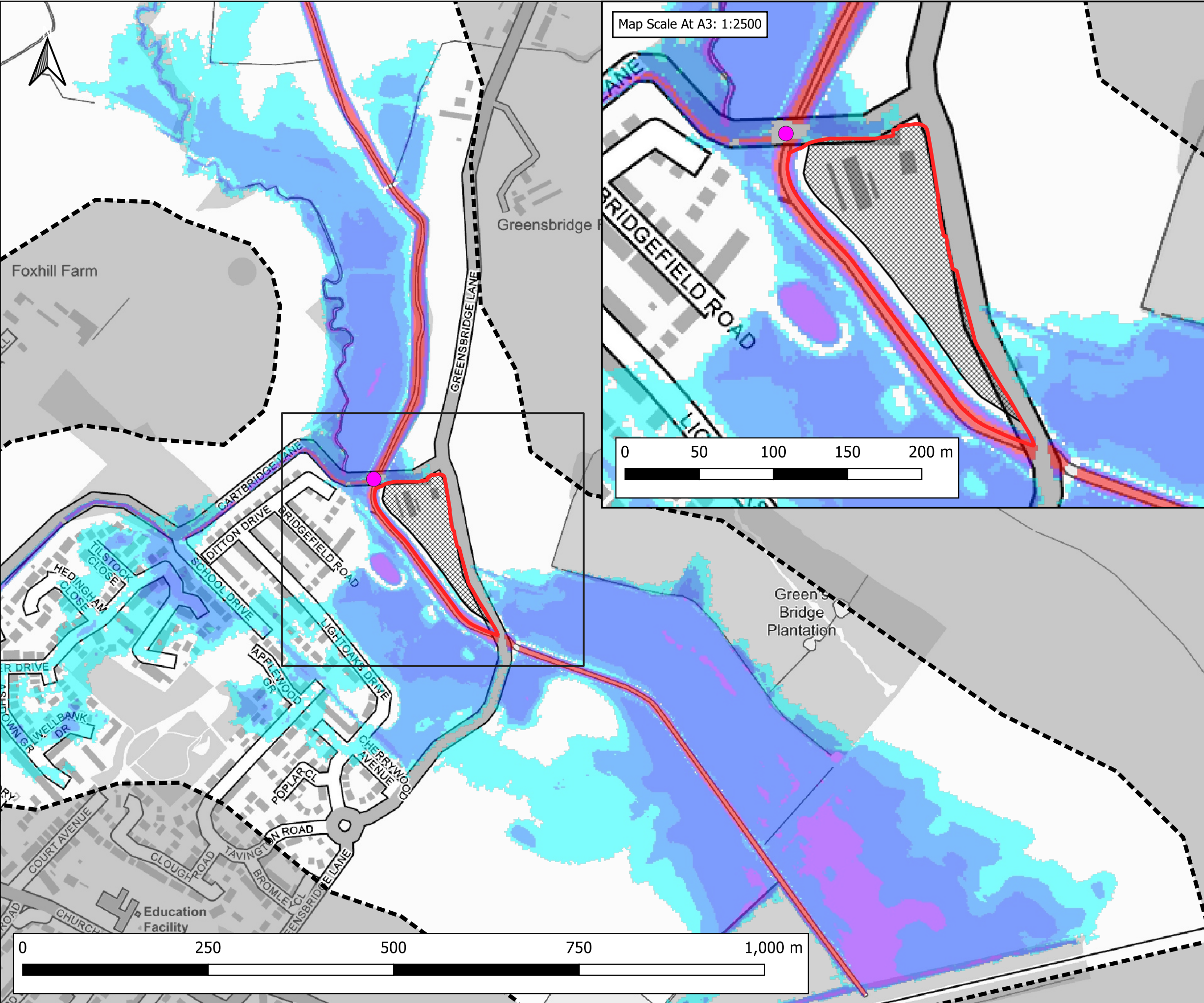
CLIENT:
BBE Development Ltd

waterco
www.waterco.co.uk

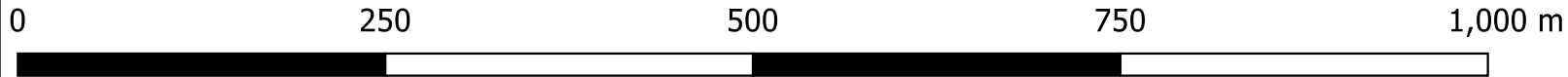
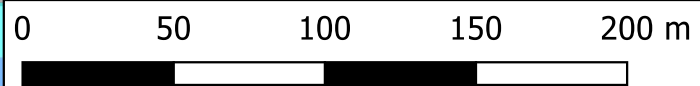
SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
33% BLOCKAGE OF CARTRIDGE LANE SCENARIO (BL1)

PLOT STATUS: FINAL			DATE: 03-06-2024
DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:5000
PLOT NAME: 14506_Neth_Q100CC44_EXG_BL1_016_d_Max			REVISION: -



Map Scale At A3: 1:2500



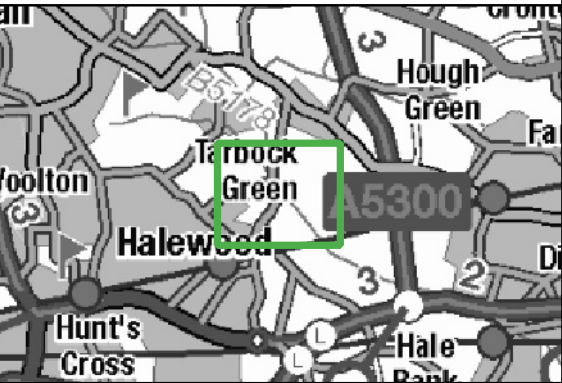
Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

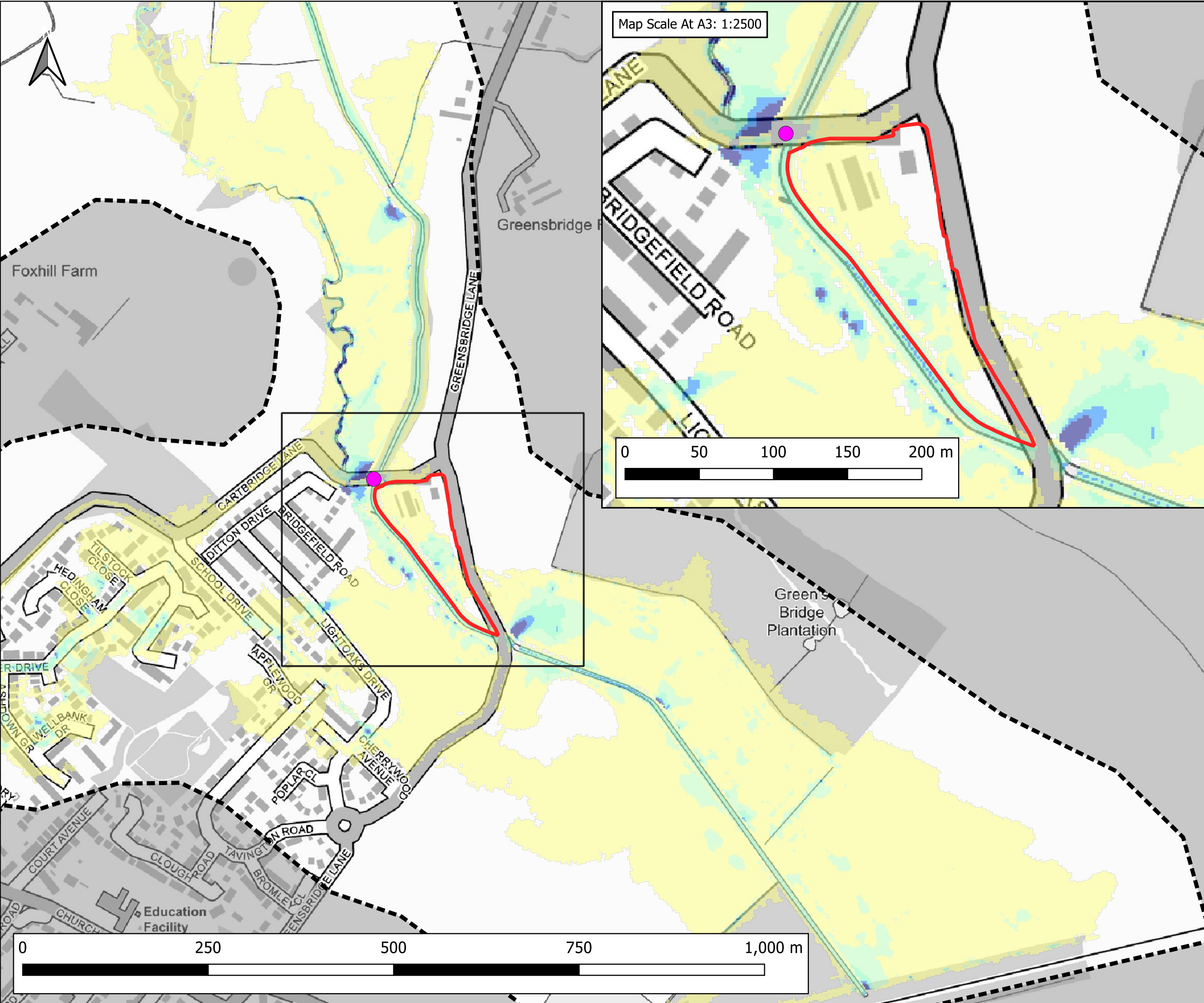
- Site Boundary
- Model Extent
- Development Platform
- Cartridge Lane Blockage Location (BL1)

Maximum Flood Depth

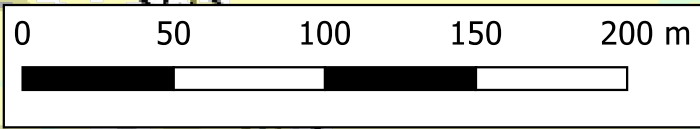
- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m



CLIENT:		BBE Development Ltd	
SCHEME:		Former Merseyside Dogs Home, East Halewood	
PLOT TITLE:		MAXIMUM FLOOD DEPTH 1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT PROPOSED DEVELOPMENT SCENARIO (DEVSITE) 33% BLOCKAGE OF CARTRIDGE LANE SCENARIO (BL1)	
PLOT STATUS:		FINAL	DATE: 03-06-2024
DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000
PLOT NAME:			REVISION:
14506_Neth_Q100CC44_DEVSITE_BL1_016_d_Max			-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Cartridge Lane Blockage Location (BL1)

Maximum Flood Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:

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SCHEME:

Former Merseyside Dogs Home,
East Halewood

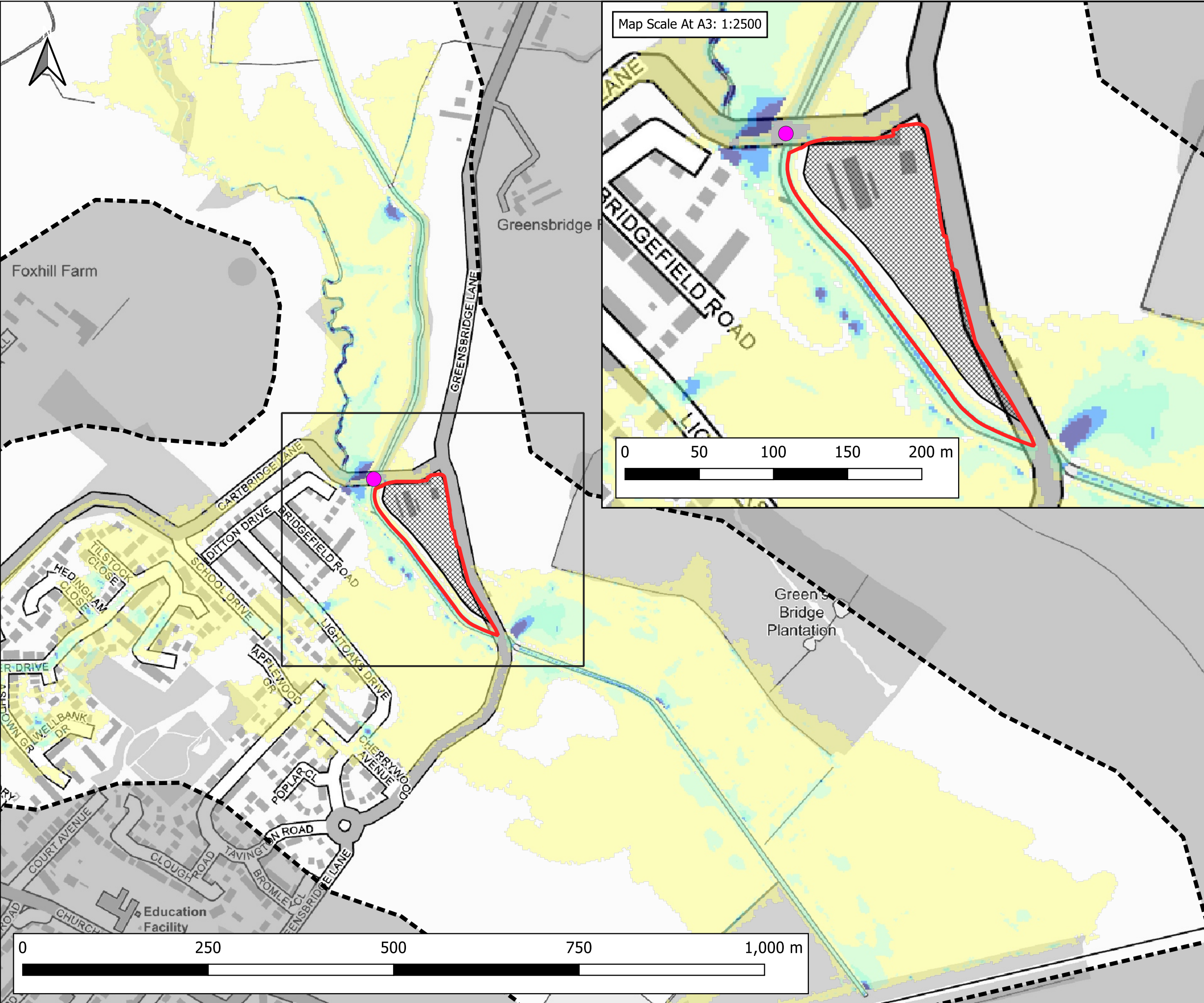
PLOT TITLE:

MAXIMUM FLOOD VELOCITY
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
33% BLOCKAGE OF CARTRIDGE LANE SCENARIO (BL1)

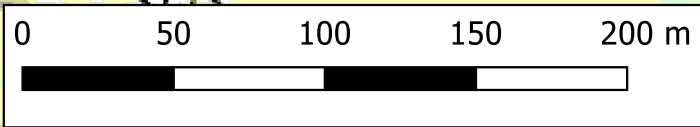
PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q100CC44_EXG_BL1_016_V_Max	-



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform
- Cartridge Lane Blockage Location (BL1)

Maximum Flood Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

Inset Map: Shows the location of the site within the Halewood area, near the A5300 road. Labels include 'Hough Green', 'Tarbock Green', 'Halewood', 'Hunt's Cross', and 'Hale Park'.

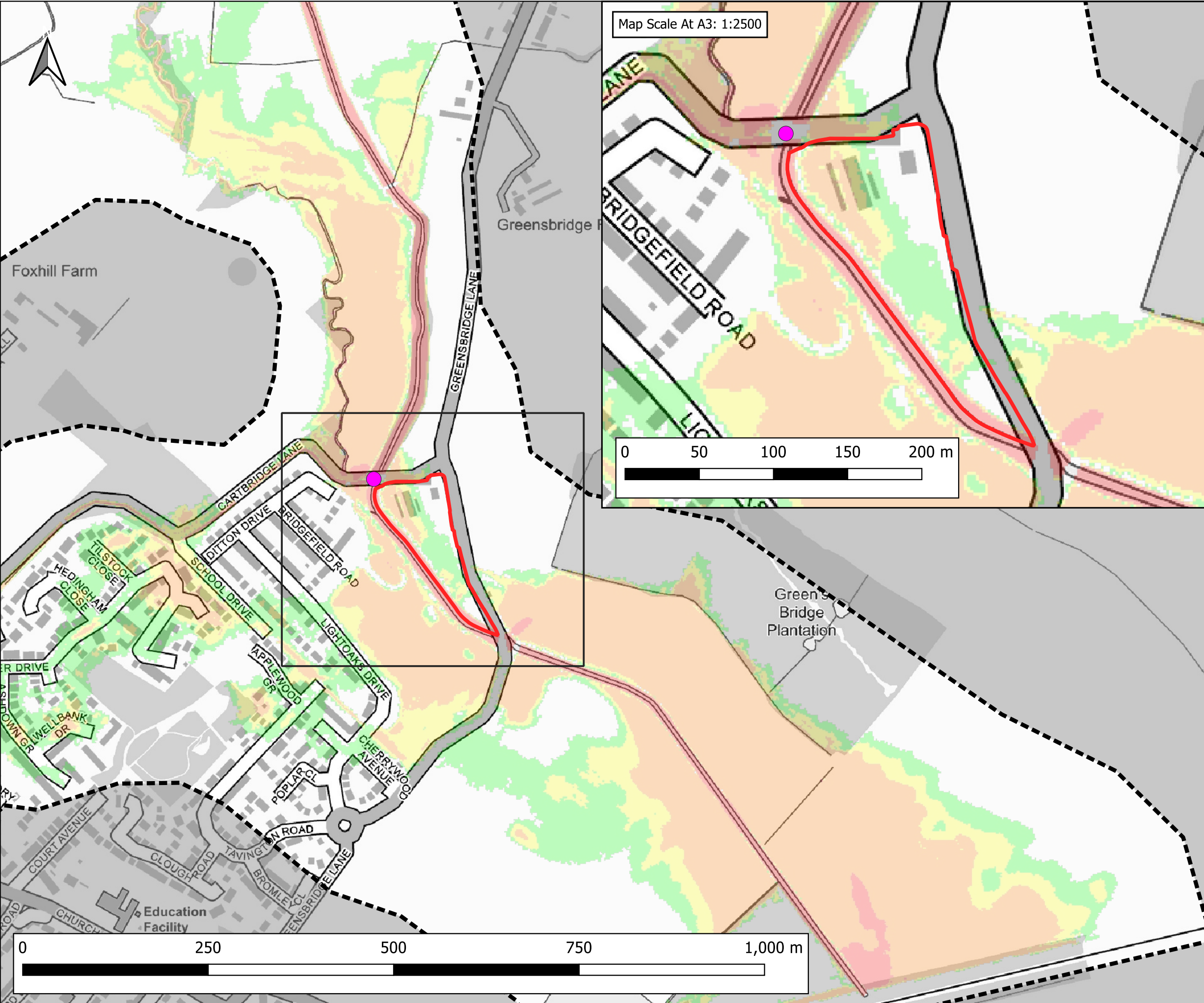
CLIENT:
BBE Development Ltd

waterco
www.waterco.co.uk

SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
MAXIMUM FLOOD VELOCITY
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
33% BLOCKAGE OF CARTRIDGE LANE SCENARIO (BL1)

PLOT STATUS: FINAL			DATE: 03-06-2024
DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:5000
PLOT NAME: 14506_Neth_Q100CC44_DEVSITE_BL1_016_V_Max			REVISION: -



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Cartridge Lane Blockage Location (BL1)

Flood Hazard Rating (FD2320)

- Caution
- Danger for Some
- Danger for Most
- Danger for All

CLIENT:

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SCHEME:

Former Merseyside Dogs Home,
East Halewood

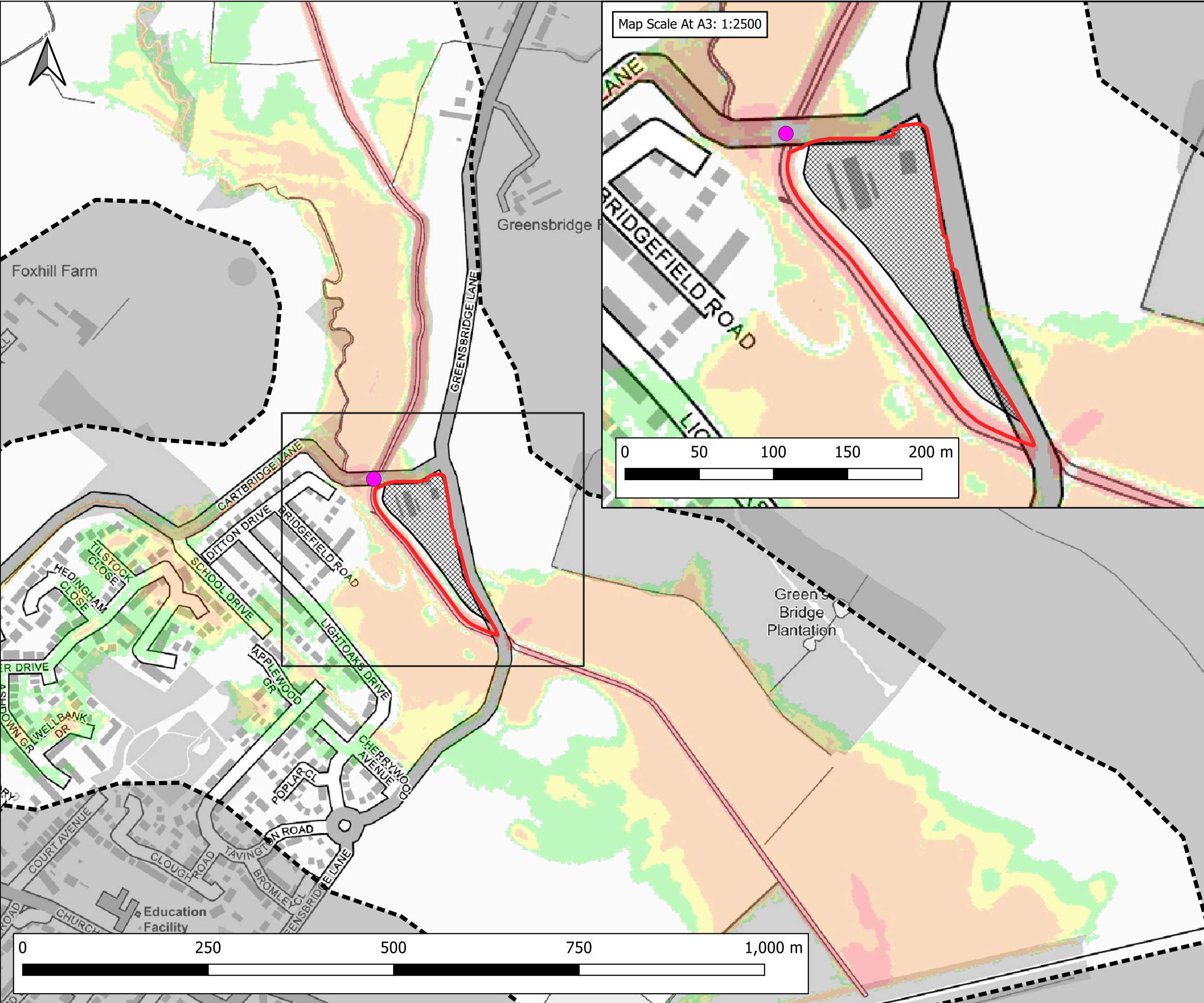
PLOT TITLE:

FLOOD HAZARD RATING
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
33% BLOCKAGE OF CARTRIDGE LANE SCENARIO (BL1)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:5000

PLOT NAME:	REVISION:
14506_Neth_Q100CC44_EXG_BL1_016_ZUK2_Max	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform
- Cartridge Lane Blockage Location (BL1)

Flood Hazard Rating (FD2320)

- Caution
- Danger for Some
- Danger for Most
- Danger for All

Map Scale At A3: 1:2500

0 50 100 150 200 m

Inset Map: Shows the location of the site within the surrounding area, including labels for Hough Green, Tarbock Green, Halewood, and Hunt's Cross.

CLIENT:
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waterco
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SCHEME:
Former Merseyside Dogs Home, East Halewood

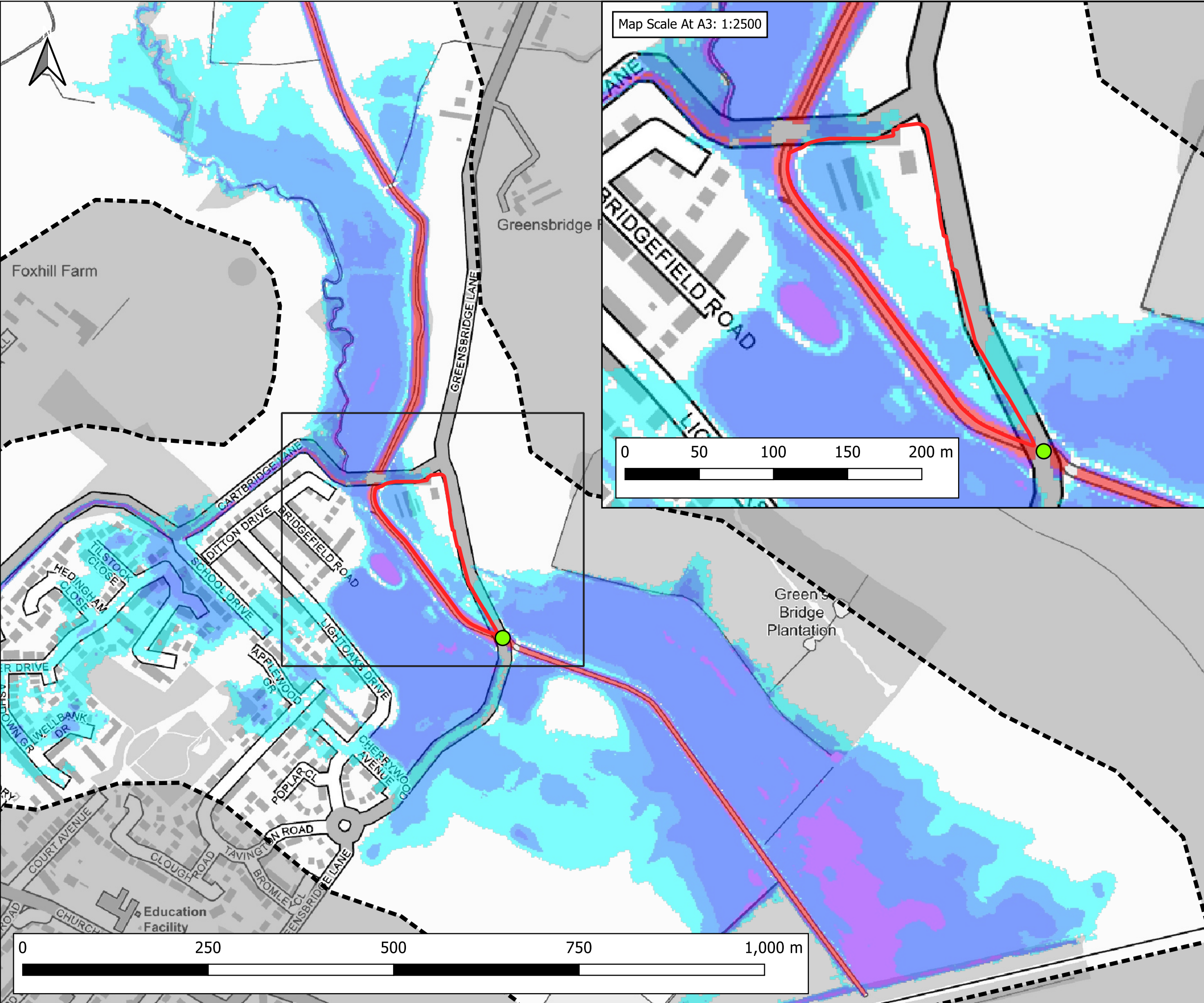
PLOT TITLE:
FLOOD HAZARD RATING
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
33% BLOCKAGE OF CARTRIDGE LANE SCENARIO (BL1)

PLOT STATUS:
FINAL

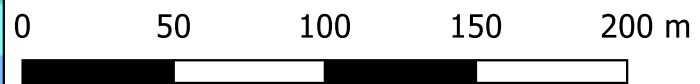
DATE:
03-06-2024

DRAWN: RM
CHECKED: AP
APPROVED: LS
PLOT SCALE AT A3: 1:5000

PLOT NAME: 14506_Neth_Q100CC44_DEVSITE_BL1_016_ZUK2_Max
REVISION: -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Greensbridge Lane Blockage Location (BL2)

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

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SCHEME:
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PLOT TITLE:
MAXIMUM FLOOD DEPTH
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
33% BLOCKAGE OF GREENSBIDGE LANE SCENARIO (BL2)

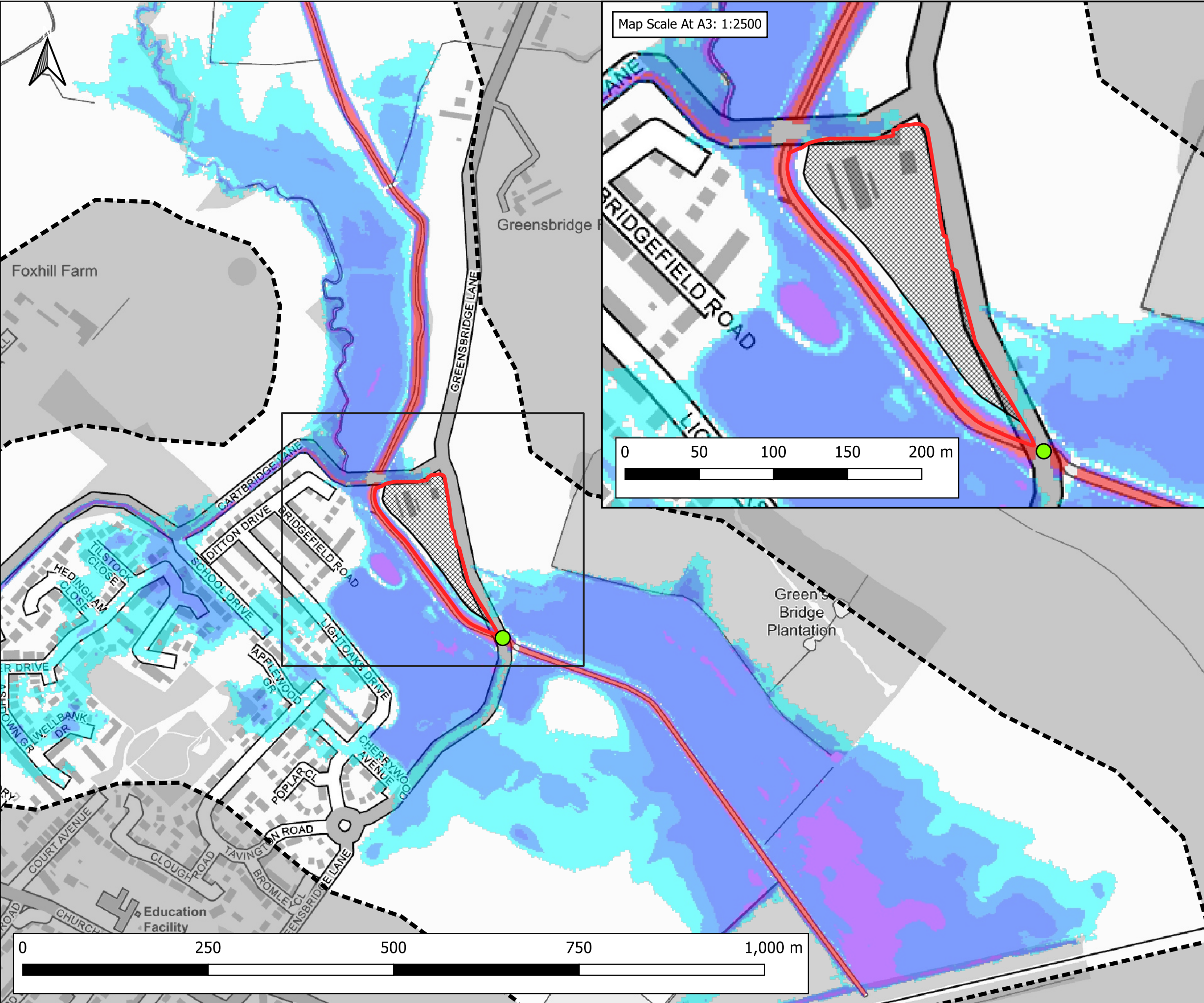
PLOT STATUS:
FINAL

DATE:
03-06-2024

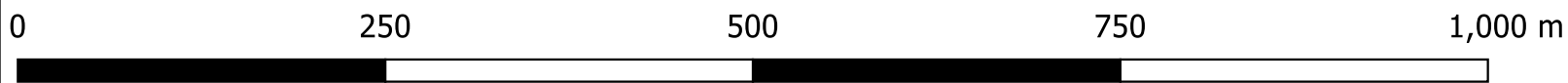
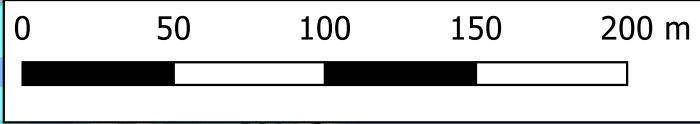
DRAWN: RM
CHECKED: AP
APPROVED: LS
PLOT SCALE AT A3:
1:5000

PLOT NAME:
14506_Neth_Q100CC44_EXG_BL2_016_d_Max

REVISION:
-



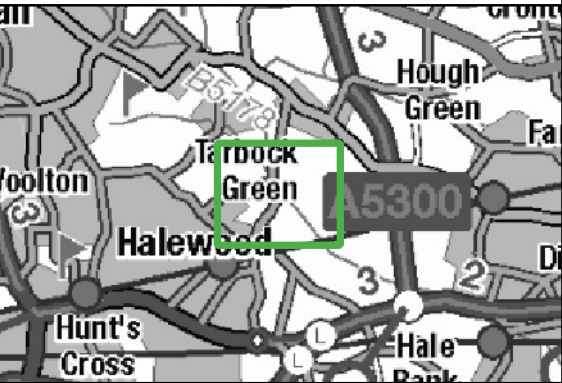
Map Scale At A3: 1:2500



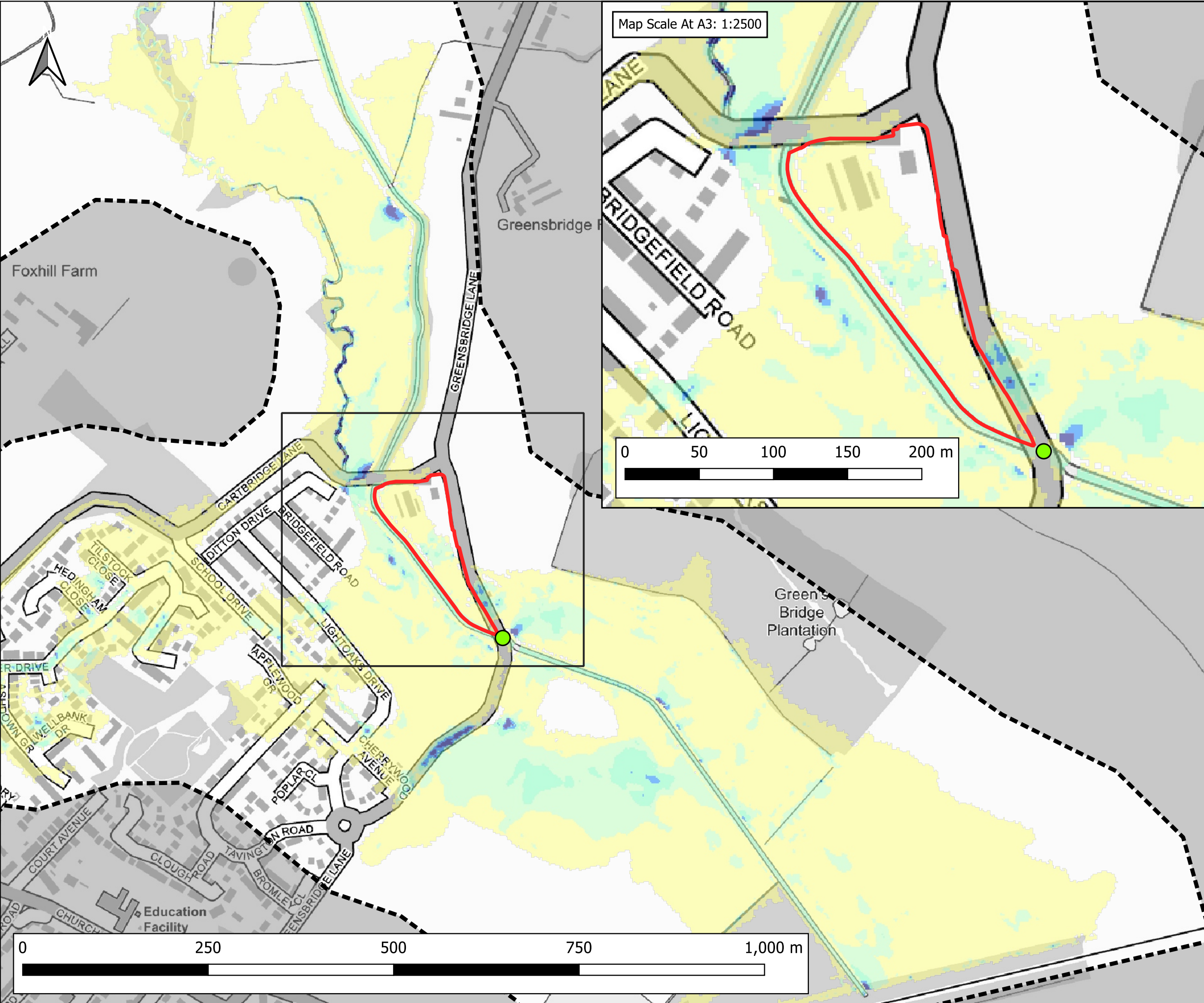
Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

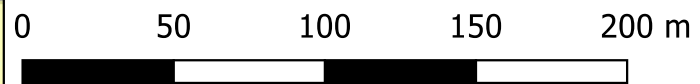
- Site Boundary
 - Model Extent
 - Development Platform
 - Greensbridge Lane Blockage Location (BL2)
- Maximum Flood Depth
- <= 0.3m
 - 0.3m - 0.6m
 - 0.6m - 1.2m
 - 1.2m - 2.4m
 - > 2.4m



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SCHEME: Former Merseyside Dogs Home, East Halewood			
PLOT TITLE: MAXIMUM FLOOD DEPTH 1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT PROPOSED DEVELOPMENT SCENARIO (DEVSITE) 33% BLOCKAGE OF GREENSBIDGE LANE SCENARIO (BL2)			
PLOT STATUS: FINAL			DATE: 03-06-2024
DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:5000
PLOT NAME: 14506_Neth_Q100CC44_DEVSITE_BL2_016_d_Max			REVISION: -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Greensbridge Lane Blockage Location (BL2)

Maximum Flood Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

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SCHEME:
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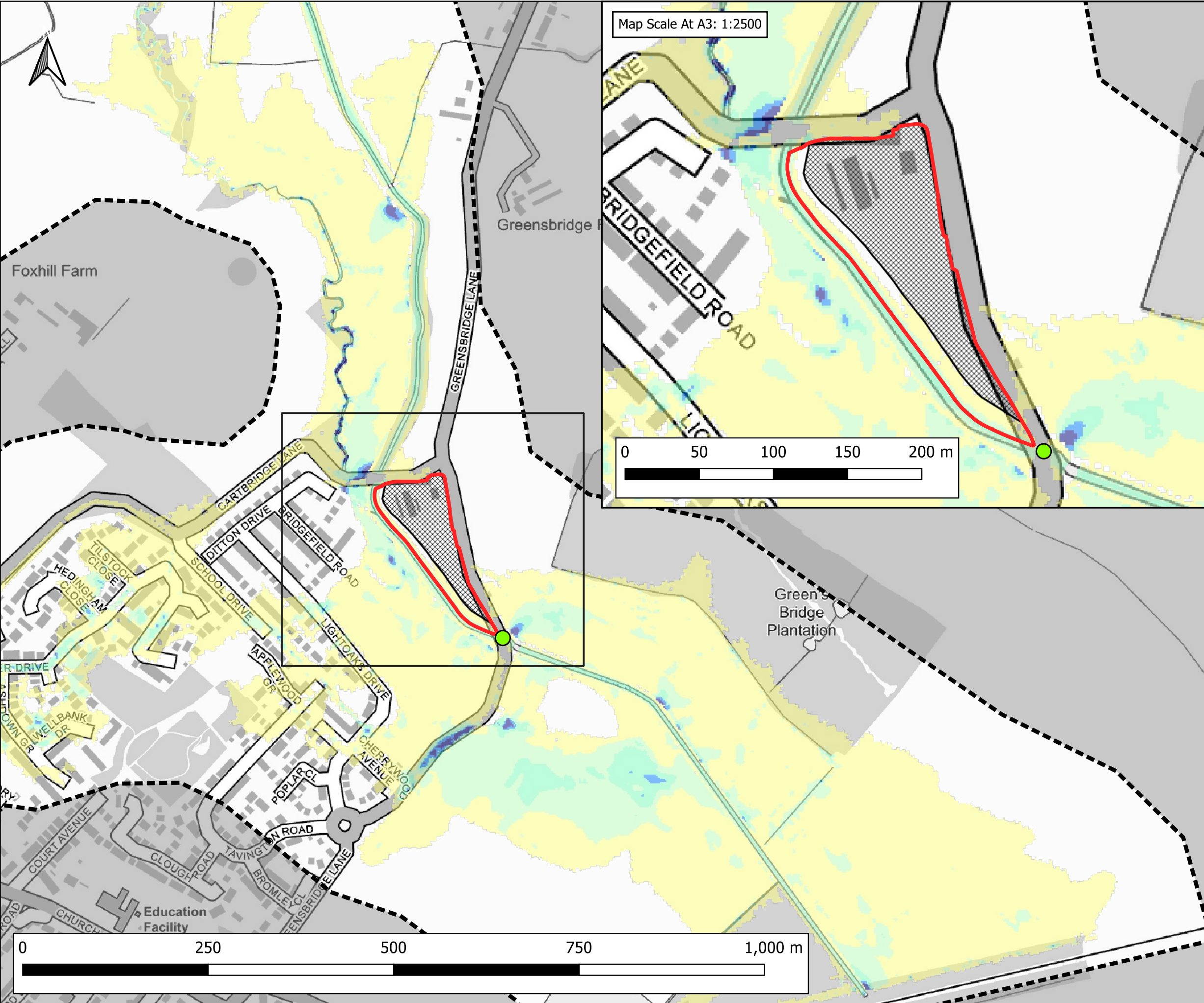
PLOT TITLE:
MAXIMUM FLOOD VELOCITY
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
33% BLOCKAGE OF GREENSBIDGE LANE SCENARIO (BL2)

PLOT STATUS:
FINAL

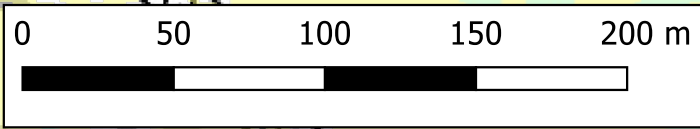
DATE:
03-06-2024

DRAWN: RM **CHECKED:** AP **APPROVED:** LS **PLOT SCALE AT A3:** 1:5000

PLOT NAME: 14506_Neth_Q100CC44_EXG_BL2_016_V_Max **REVISION:** -



Map Scale At A3: 1:2500



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform
- Greensbridge Lane Blockage Location (BL2)

Maximum Flood Velocity (m/s)

- 0.0 - 0.3
- 0.3 - 0.6
- 0.6 - 0.9
- 0.9 - 1.2
- > 1.2

CLIENT:
BBE Development Ltd

SCHEME:
Former Merseyside Dogs Home, East Halewood

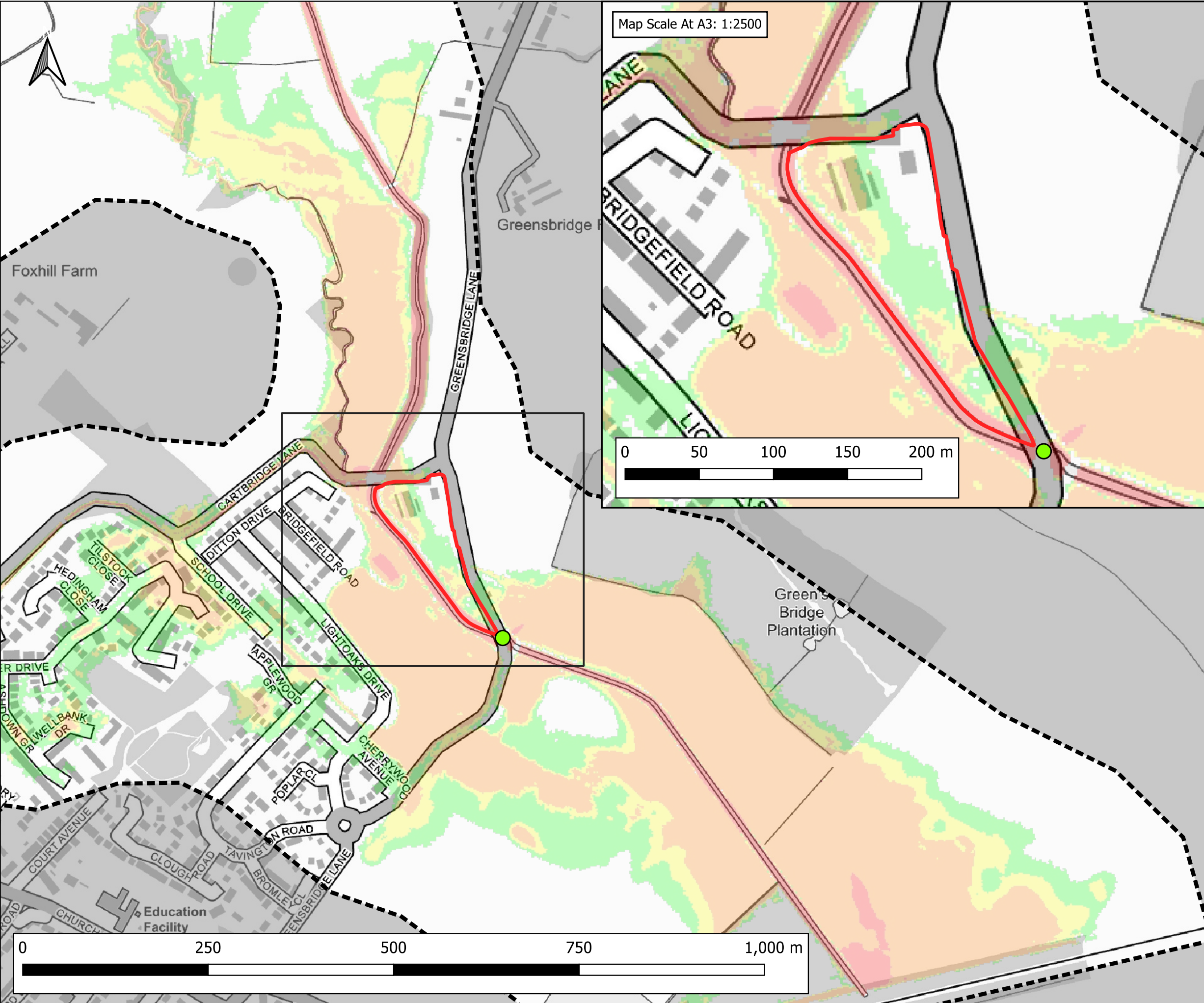
PLOT TITLE:
MAXIMUM FLOOD VELOCITY
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
33% BLOCKAGE OF GREENSBIDGE LANE SCENARIO (BL2)

PLOT STATUS:
FINAL

DATE:
03-06-2024

DRAWN: RM **CHECKED:** AP **APPROVED:** LS **PLOT SCALE AT A3:** 1:5000

PLOT NAME: 14506_Neth_Q100CC44_DEVSITE_BL2_016_V_Max **REVISION:** -



Map Scale At A3: 1:2500

0 50 100 150 200 m

0 250 500 750 1,000 m

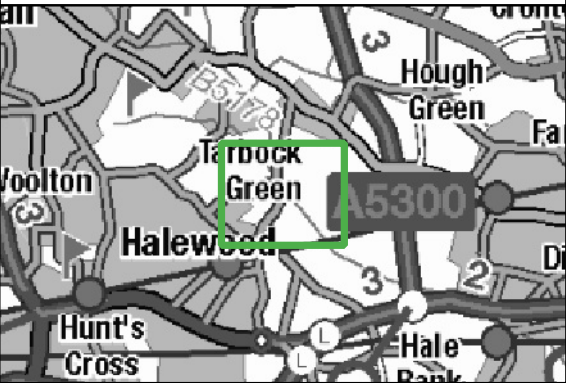
Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Greensbridge Lane Blockage Location (BL2)

Flood Hazard Rating (FD2320)

- Caution
- Danger for Some
- Danger for Most
- Danger for All



CLIENT:

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SCHEME:

Former Merseyside Dogs Home,
East Halewood

PLOT TITLE:

FLOOD HAZARD RATING
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
33% BLOCKAGE OF GREENSBIDGE LANE SCENARIO (BL2)

PLOT STATUS:

FINAL

DATE:

03-06-2024

DRAWN:

RM

CHECKED:

AP

APPROVED:

LS

PLOT SCALE AT A3:

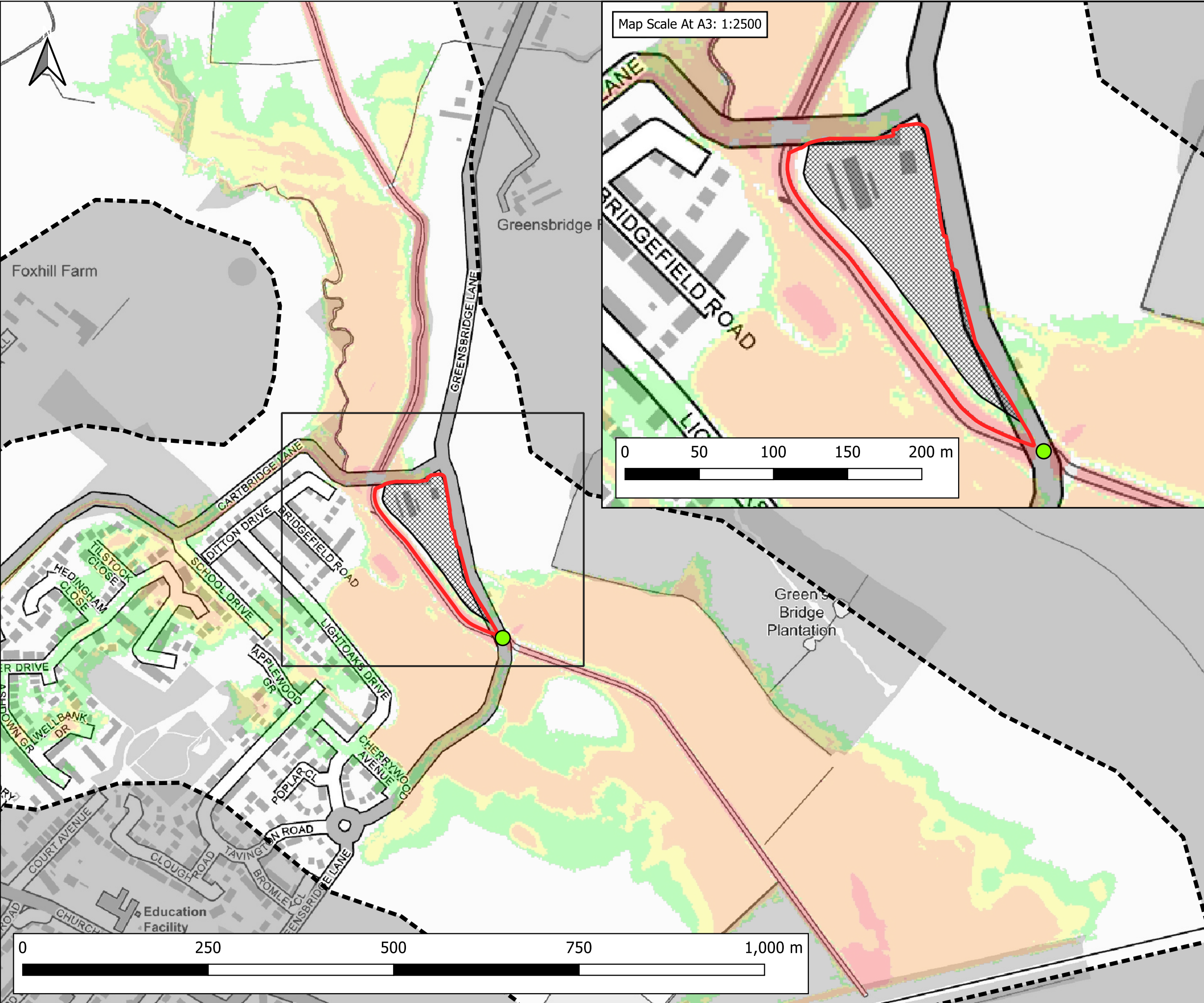
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PLOT NAME:

14506_Neth_Q100CC44_EXG_BL2_016_ZUK2_Max

REVISION:

-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform
- Greensbridge Lane Blockage Location (BL2)

Flood Hazard Rating (FD2320)

- Caution
- Danger for Some
- Danger for Most
- Danger for All

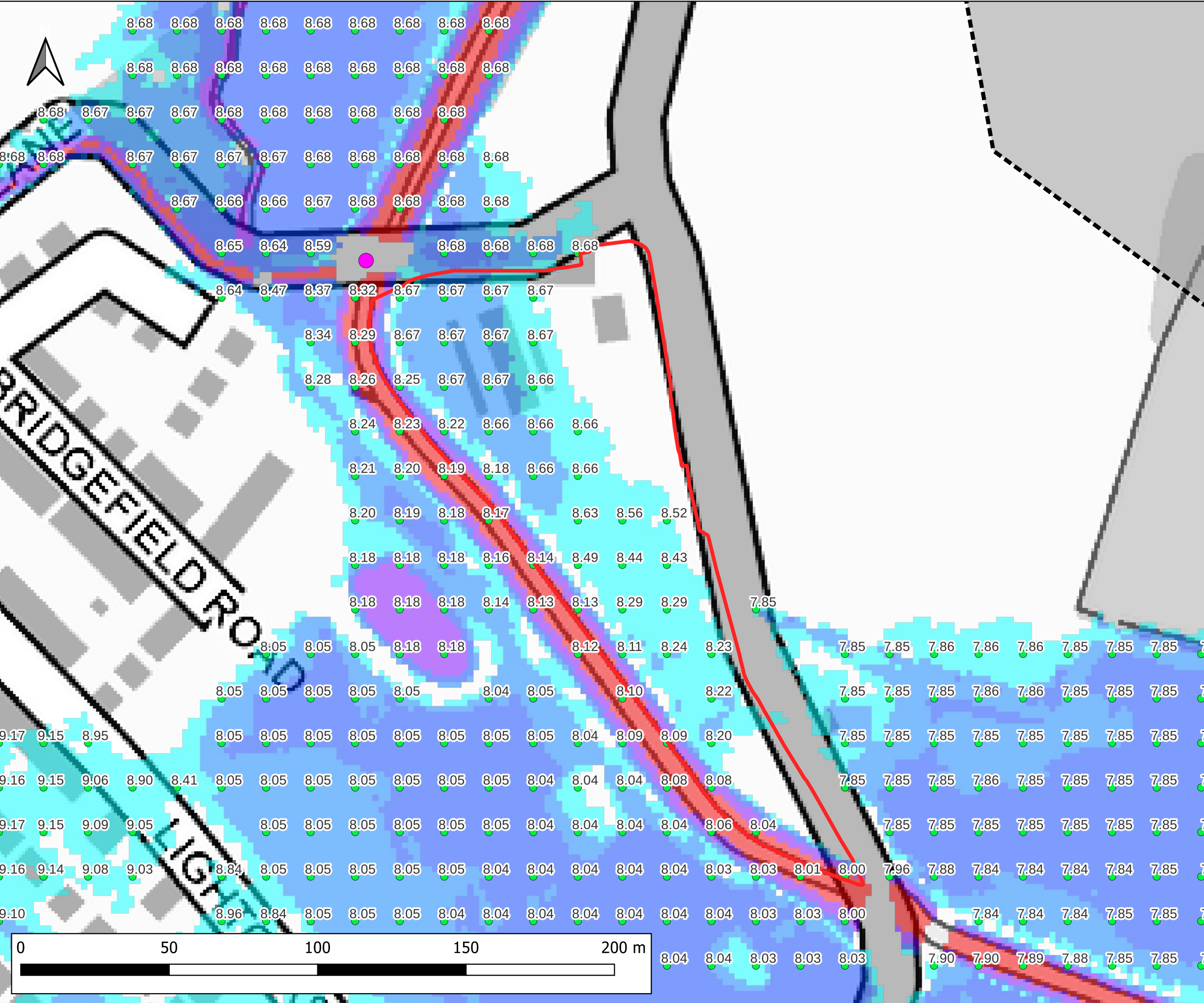
CLIENT:
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waterco
www.waterco.co.uk

SCHEME:
Former Merseyside Dogs Home, East Halewood

PLOT TITLE:
FLOOD HAZARD RATING
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
33% BLOCKAGE OF GREENSBIDGE LANE SCENARIO (BL2)

PLOT STATUS: FINAL		DATE: 03-06-2024	
DRAWN: RM	CHECKED: AP	APPROVED: LS	PLOT SCALE AT A3: 1:5000
PLOT NAME: 14506_Neth_Q100CC44_DEVSITE_BL2_016_ZUK2_Max			REVISION: -



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Cartridge Lane Blockage Location (BL1)
- Maximum Water Level (m AOD)

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

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SCHEME:

Former Merseyside Dogs Home, East Halewood

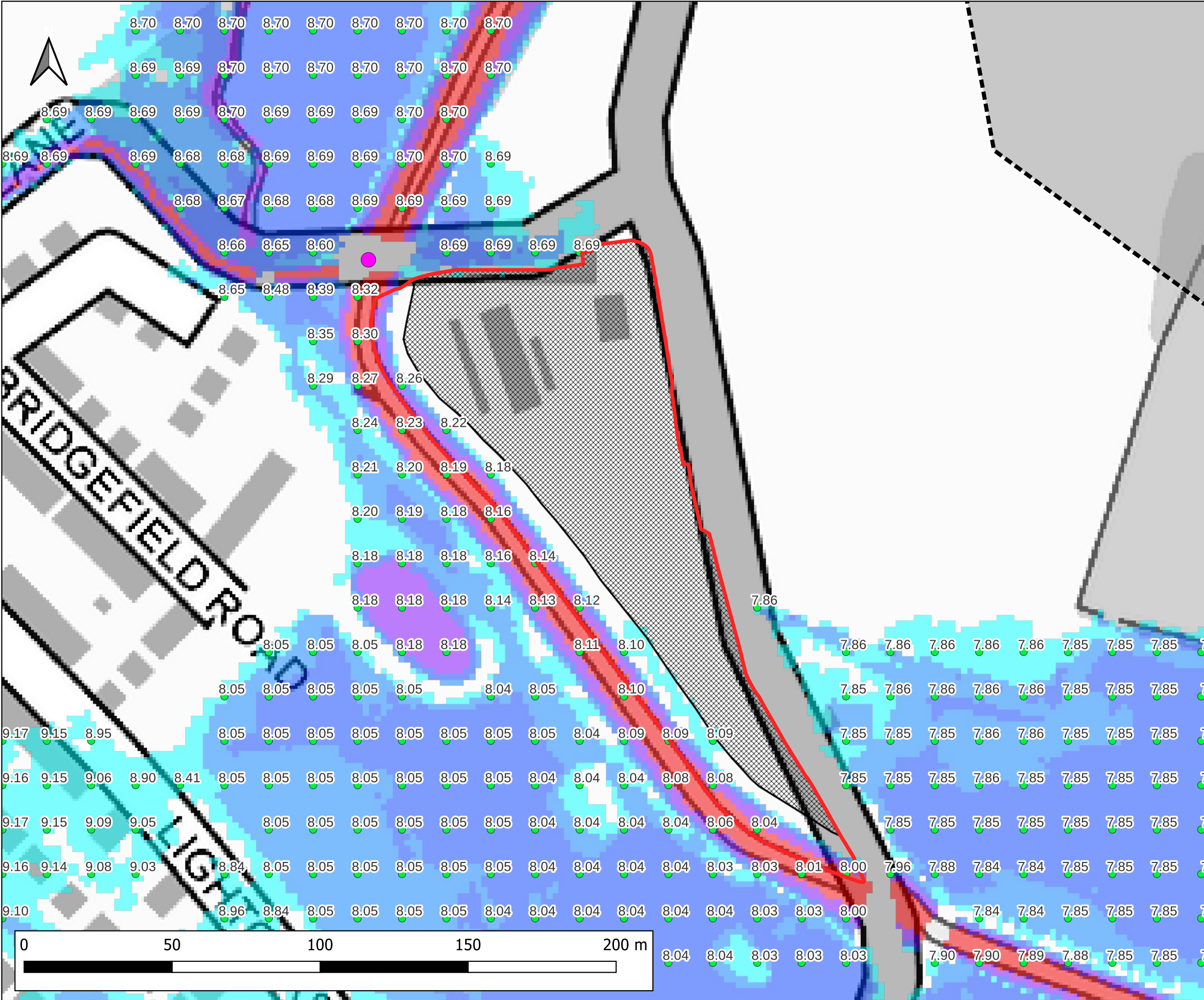
PLOT TITLE:

MAXIMUM WATER LEVEL
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
33% BLOCKAGE OF CARTRIDGE LANE SCENARIO (BL1)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:1250

PLOT NAME:	REVISION:
14506_Neth_Q100CC44_EXG_BL1_016_h_Max	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Development Platform
- Cartridge Lane Blockage Location (BL1)
- Maximum Water Level (m AOD)

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

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SCHEME:

Former Merseyside Dogs Home, East Halewood

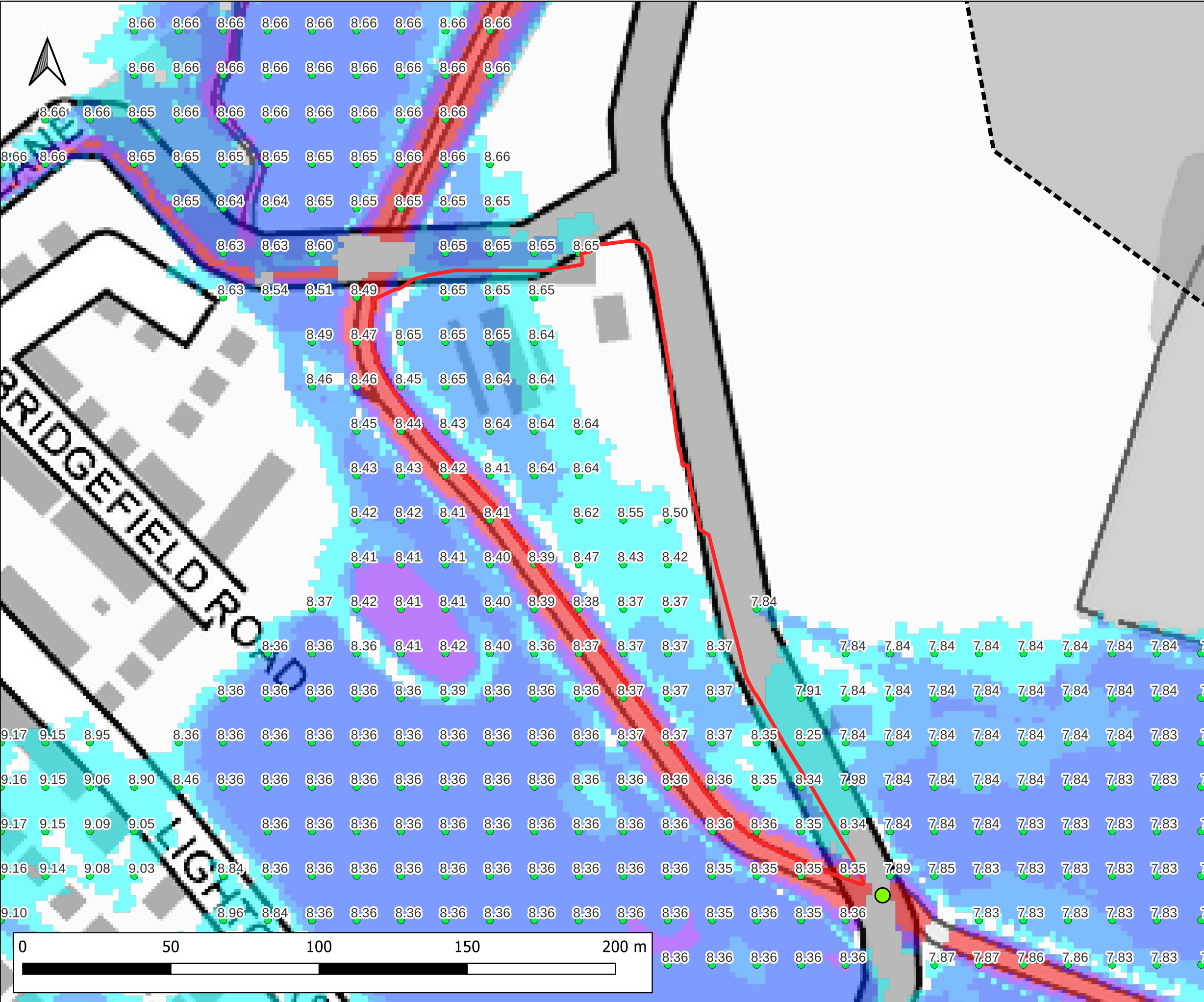
PLOT TITLE:

MAXIMUM WATER LEVEL
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
PROPOSED DEVELOPMENT SCENARIO (DEVSITE)
33% BLOCKAGE OF CARTRIDGE LANE SCENARIO (BL1)

PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:1250

PLOT NAME:	REVISION:
14506_Neth_Q100CC44_DEVSITE_BL1_016_h_Max	-



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise.

LEGEND

- Site Boundary
- Model Extent
- Greensbridge Lane Blockage Location (BL2)
- Maximum Water Level (m AOD)

Maximum Flood Depth

- <= 0.3m
- 0.3m - 0.6m
- 0.6m - 1.2m
- 1.2m - 2.4m
- > 2.4m

CLIENT:

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SCHEME:

Former Merseyside Dogs Home, East Halewood

PLOT TITLE:

MAXIMUM WATER LEVEL
1% AEP PLUS 44% CLIMATE CHANGE FLUVIAL EVENT
EXISTING SCENARIO (EXG)
33% BLOCKAGE OF GREENSBIDGE LANE SCENARIO (BL2)

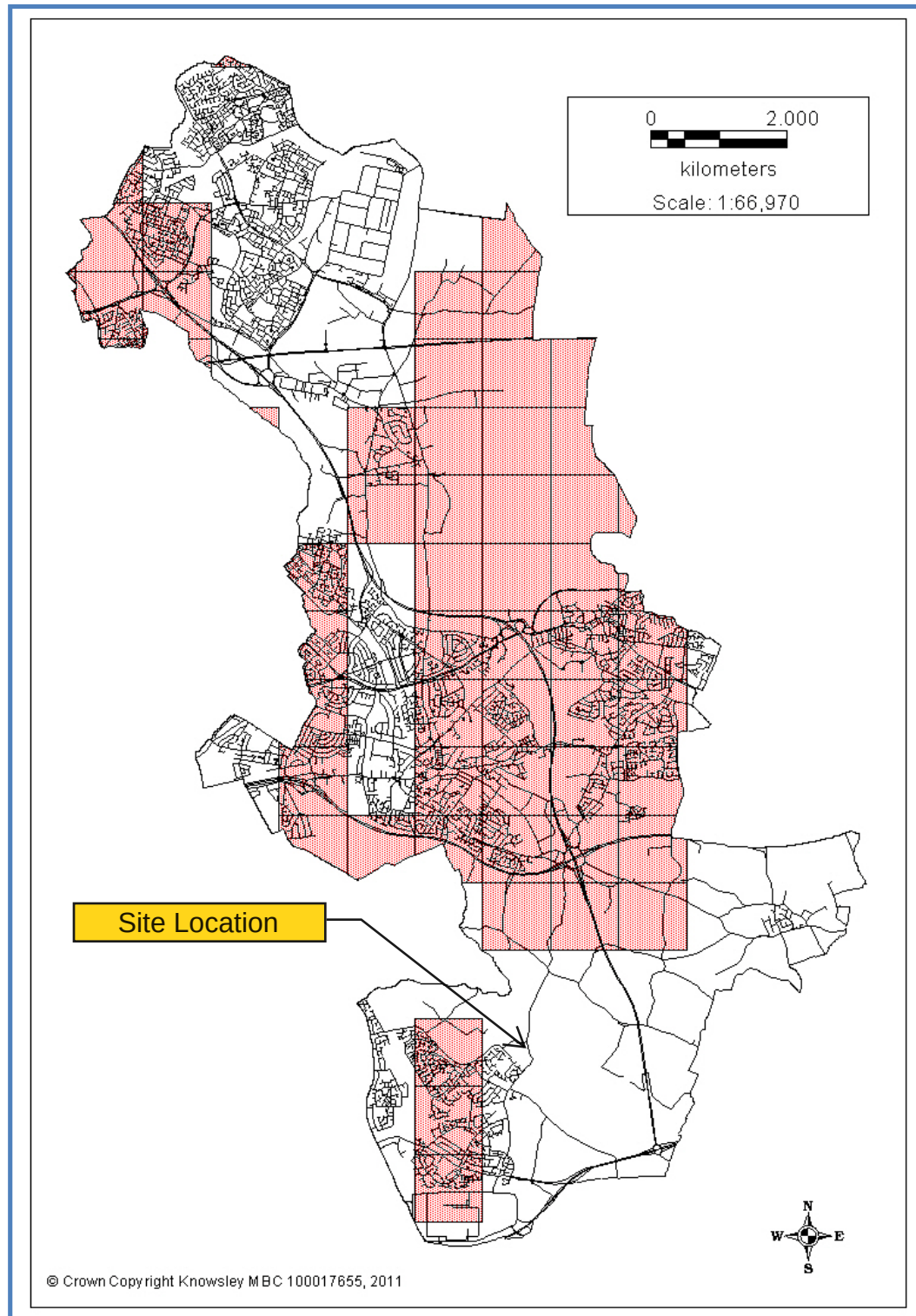
PLOT STATUS:		DATE:	
FINAL		03-06-2024	

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
RM	AP	LS	1:1250

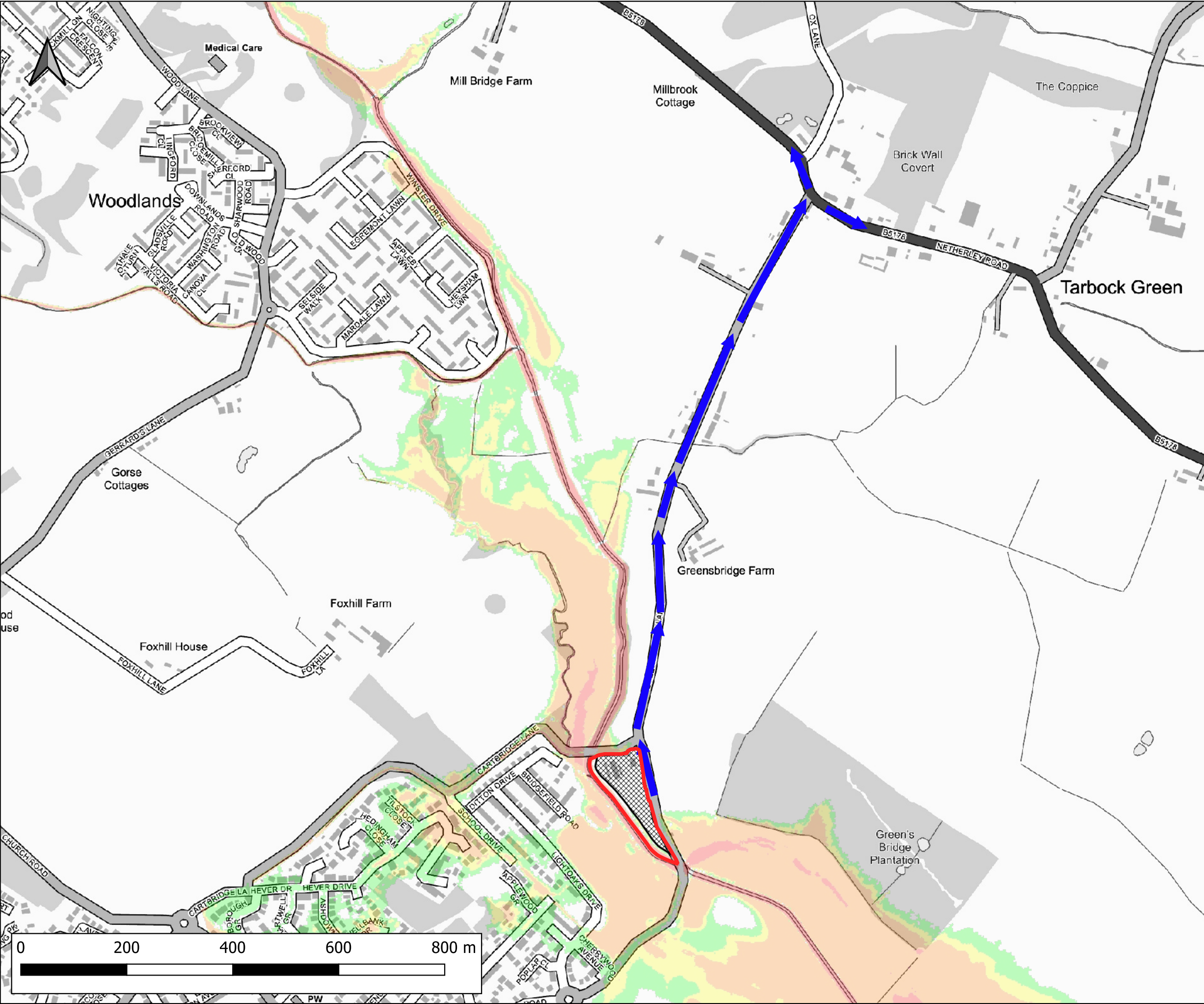
PLOT NAME:	REVISION:
14506_Neth_Q100CC44_EXG_BL2_016_h_Max	-

Appendix H PFRA ‘Areas Susceptible to Groundwater Flooding’ Map

Figure 5-1 – Areas Susceptible to Ground Water Flooding



Appendix I Safe Access / Egress Plan



Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Safe Access / Egress Route
- Development Platform

Flood Hazard Rating (FD2320)

- Caution
- Danger for Some
- Danger for Most
- Danger for All

CLIENT:

BBE Developments Ltd

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SCHEME:

Former Merseyside Dogs Home,
East Halewood

PLOT TITLE:

Safe Access / Egress Route Plan
0.1% AEP Fluvial Event
Proposed Development Scenario (EXG)

PLOT STATUS:		FINAL		DATE:	06-06-2024
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DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:	
RM	AW	MW	1:7000	

PLOT NAME:	REVISION:
14506_Safe_Access/Egress_Route_Plan	-