

Appendix B – EA and BCC Information

Environment Agency Published Flood Map for Planning

British Geology Survey – Geology Map – Superficial

British Geology Survey – Geology Map – Bedrock

MAGIC Aquifer Designation Map – Superficial

MAGIC Aquifer Designation Map – Bedrock

MAGIC Groundwater Vulnerability Map

MAGIC Soilscape Map

Surface Water Flood Risk Map

Reservoir Flood Risk Map

Rivers and Sea Flood Risk Map

Critical Drainage Area Plan

PROJECT

Oaklands
Meadows

CLIENT

Countryside
Properties

CONSULTANT

AECOM
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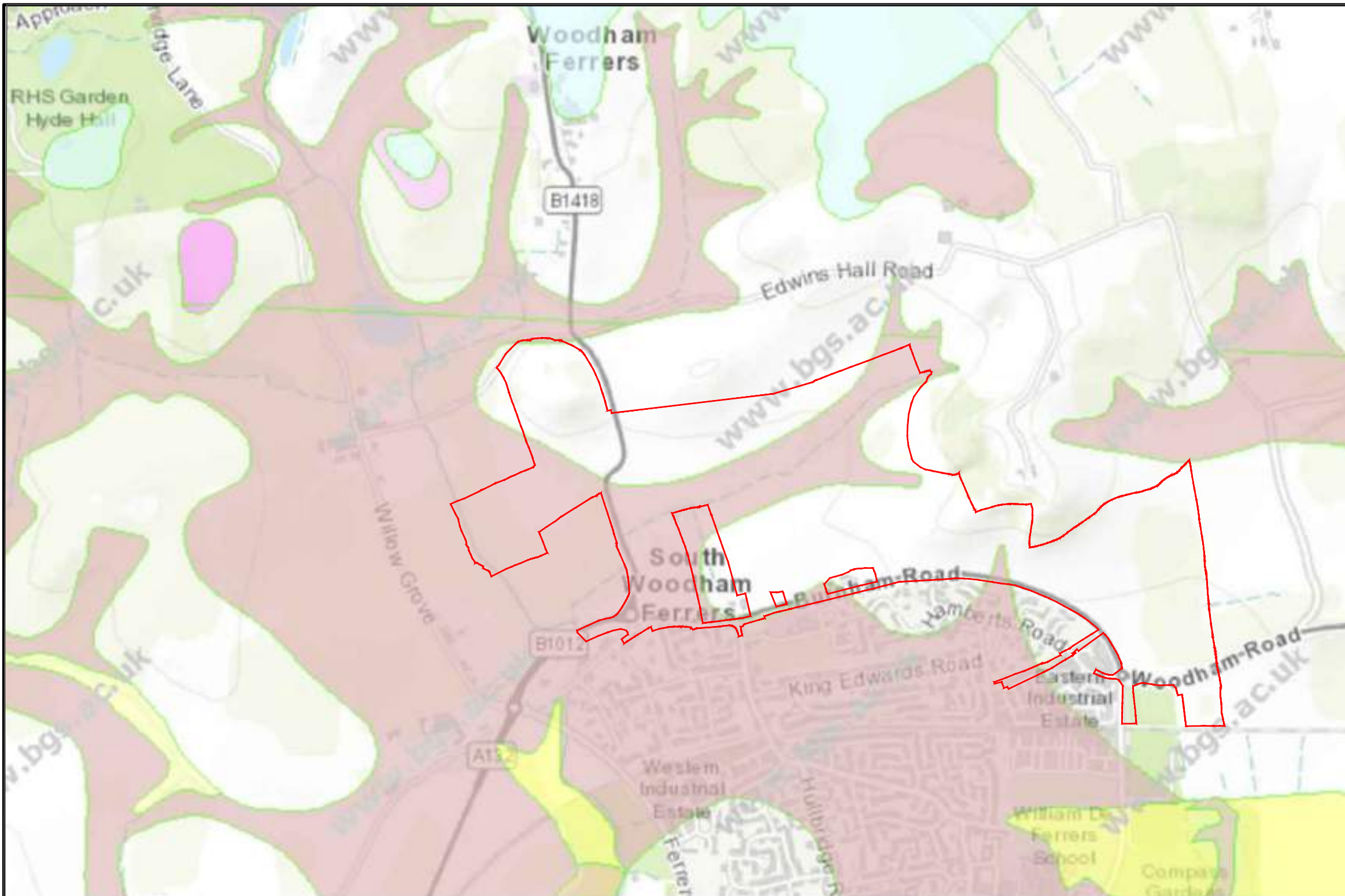
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SHEET TITLE

FIGURE 5
GEOLOGY - SUPERFICIAL

SHEET NUMBER

60567432-ACM-00-00-SHT-DR-00002



Superficial deposits

- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL
- TIDAL FLAT DEPOSITS - CLAY AND SILT
- LOWESTOFT FORMATION - DIAMICTON
- GLACIOFLUVIAL DEPOSITS, MID-PLEISTOCENE - SAND AND GRAVEL
- STANMORE GRAVEL FORMATION - SAND AND GRAVEL
- BEACH AND TIDAL FLAT DEPOSITS (UNDIFFERENTIATED) - CLAY, SILT AND SAND
- HEAD - CLAY, SILT, SAND AND GRAVEL

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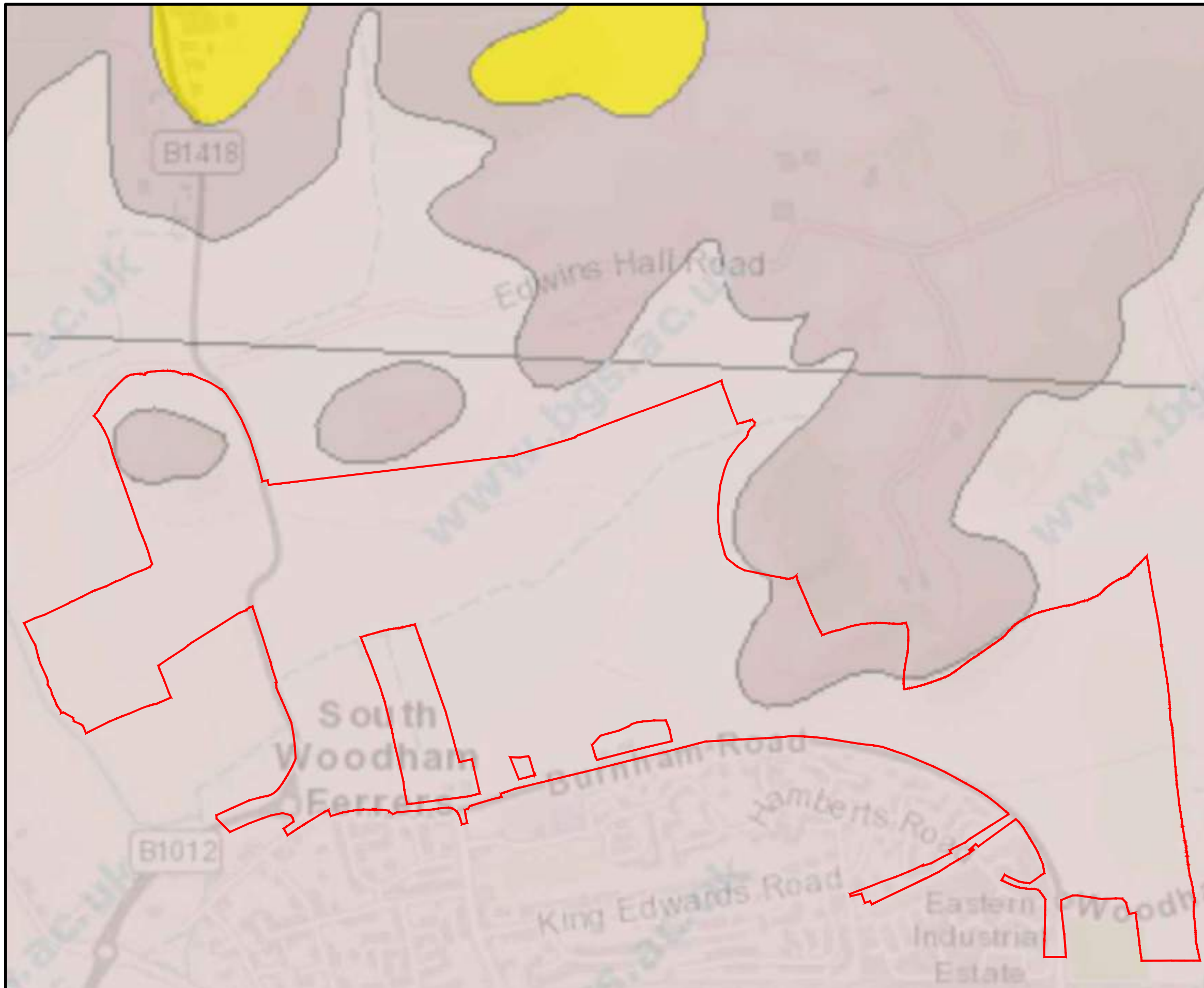
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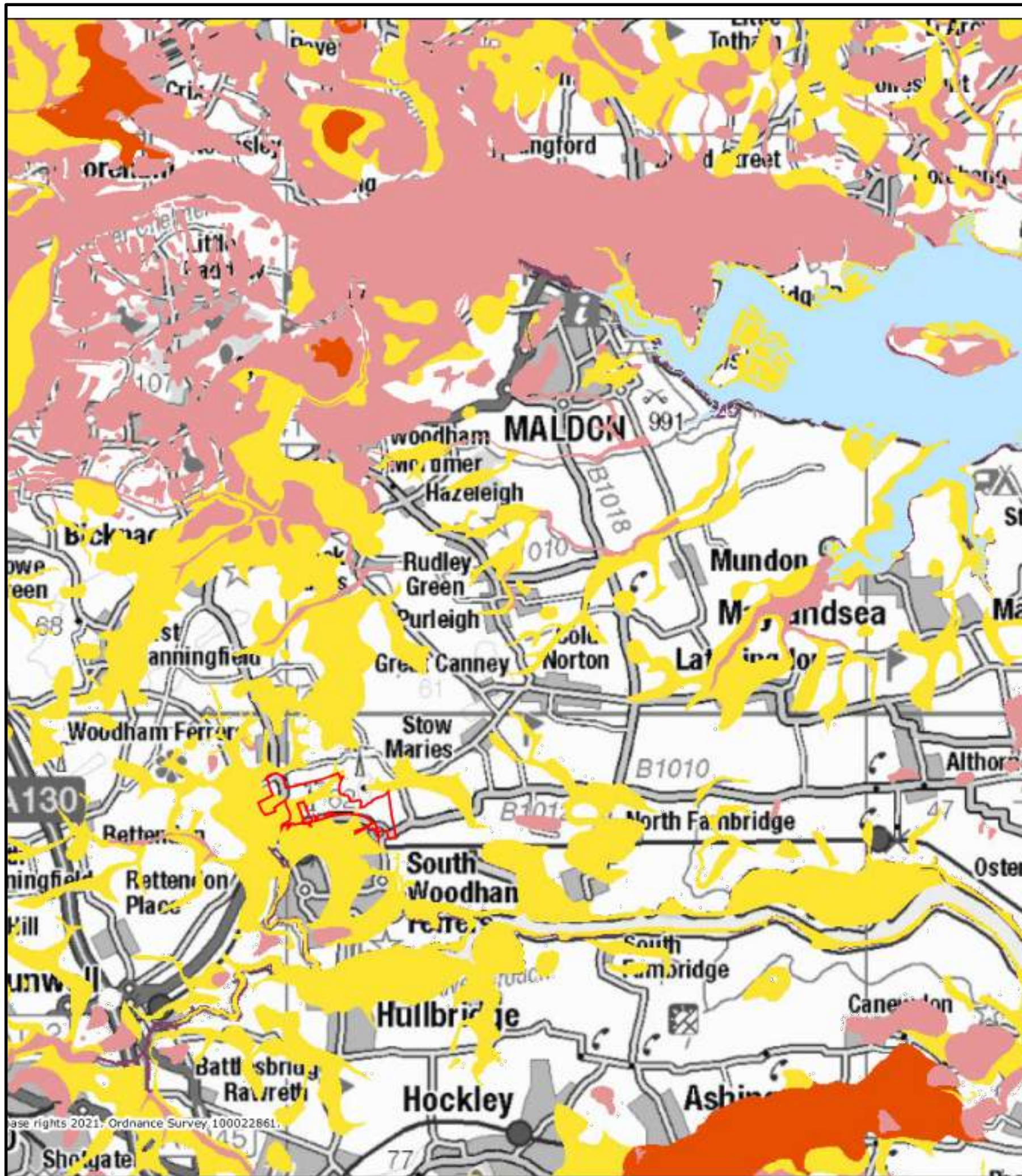
FIGURE 6
GEOLOGY - BEDROCK

SHEET NUMBER

60567432-ACM-00-00-SHT-DR-00003



	<u>BAGSHOT FORMATION - SAND</u>
	<u>CLAYGATE MEMBER - CLAY, SILT AND SAND</u>
	<u>LONDON CLAY FORMATION - CLAY, SILT AND SAND</u>



Legend

Aquifer Designation Map (Superficial Drift) (England)

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unknown (lakes+landslip)
- Unproductive

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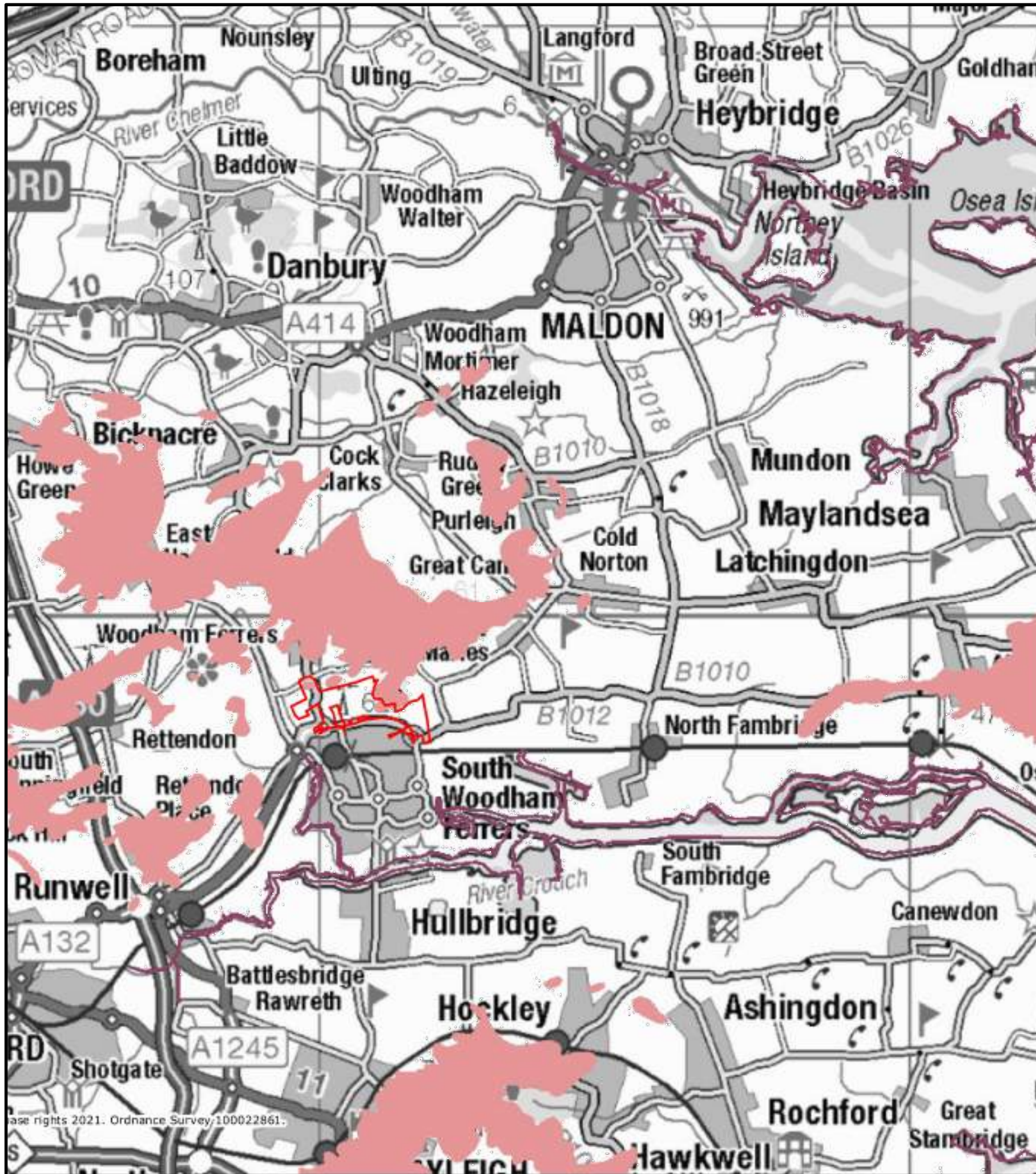
SHEET TITLE

FIGURE 7
 AQUIFER DESIGNATION MAP
 SUPERFICIAL DEPOSITS

SHEET NUMBER

60567432-ACM-00-00-SHT-DR-00004

base rights 2021. Ordnance Survey, 100022861.



Legend

Aquifer Designation Map (Bedrock)
(England)

- Principal
- Secondary A
- Secondary B
- Secondary (undifferentiated)
- Unproductive



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FIGURE 8
AQUIFER DESIGNATION MAP
BEDROCK

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Legend

Groundwater Vulnerability Map (England)

-  Local Information
-  Soluble Rock Risk
-  High
-  Medium - High
-  Medium
-  Medium - Low
-  Low
-  Unproductive



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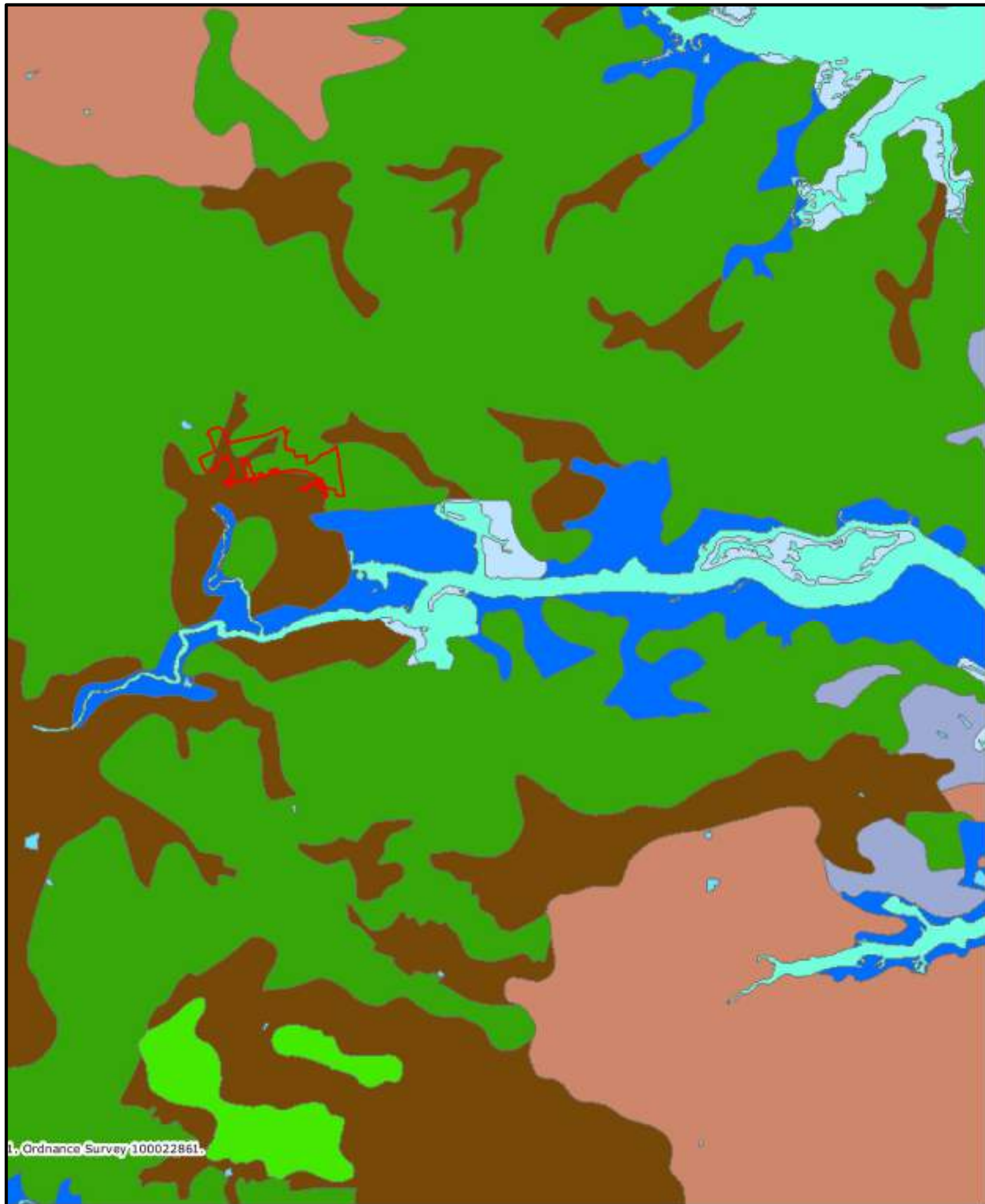
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FIGURE 9
GROUNDWATER VULNERABILITY MAP

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60567432-ACM-00-00-SHT-DR-00006

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Legend

Soilscape (England)

- 1 - Saltmarsh soils
- 2 - Shallow very acid peaty soils over rock
- 3 - Shallow lime-rich soils over chalk or limestone
- 4 - Sand dune soils
- 5 - Freely draining lime-rich loamy soils
- 6 - Freely draining slightly acid loamy soils
- 7 - Freely draining slightly acid but base-rich soils
- 8 - Slightly acid loamy and clayey soils with impeded drainage
- 9 - Lime-rich loamy and clayey soils with impeded drainage
- 10 - Freely draining slightly acid sandy soils
- 11 - Freely draining sandy breckland soils
- 12 - Freely draining floodplain soils
- 13 - Freely draining acid loamy soils over rock
- 14 - Freely draining very acid sandy and loamy soils
- 15 - Naturally wet very acid sandy and loamy soils
- 16 - Very acid loamy upland soils with a wet peaty surface
- 17 - Slowly permeable seasonally wet acid loamy and clayey soils
- 18 - Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils
- 19 - Slowly permeable wet very acid upland soils with a peaty surface
- 20 - Loamy and clayey floodplain soils with naturally high groundwater
- 21 - Loamy and clayey soils of coastal flats with naturally high groundwater
- 22 - Loamy soils with naturally high groundwater
- 23 - Loamy and sandy soils with naturally high groundwater and a peaty surface
- 24 - Restored soils mostly from quarry and opencast spoil
- 25 - Blanket bog peat soils
- 26 - Raised bog peat soils
- 27 - Fen peat soils
- 28 - Sea
- 30 - UC
- 31 - Water

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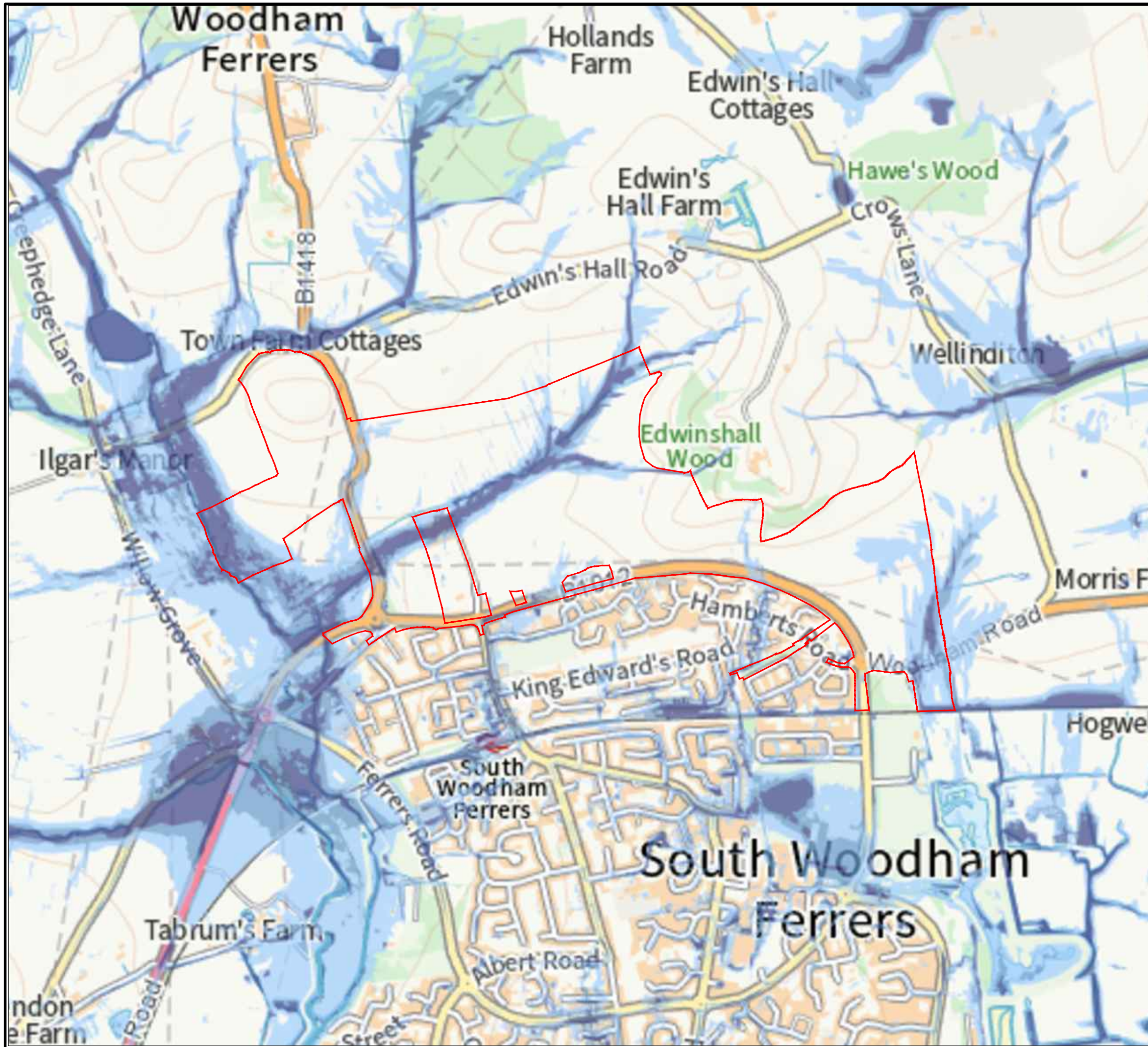
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FIGURE 10
SOILSCAPE

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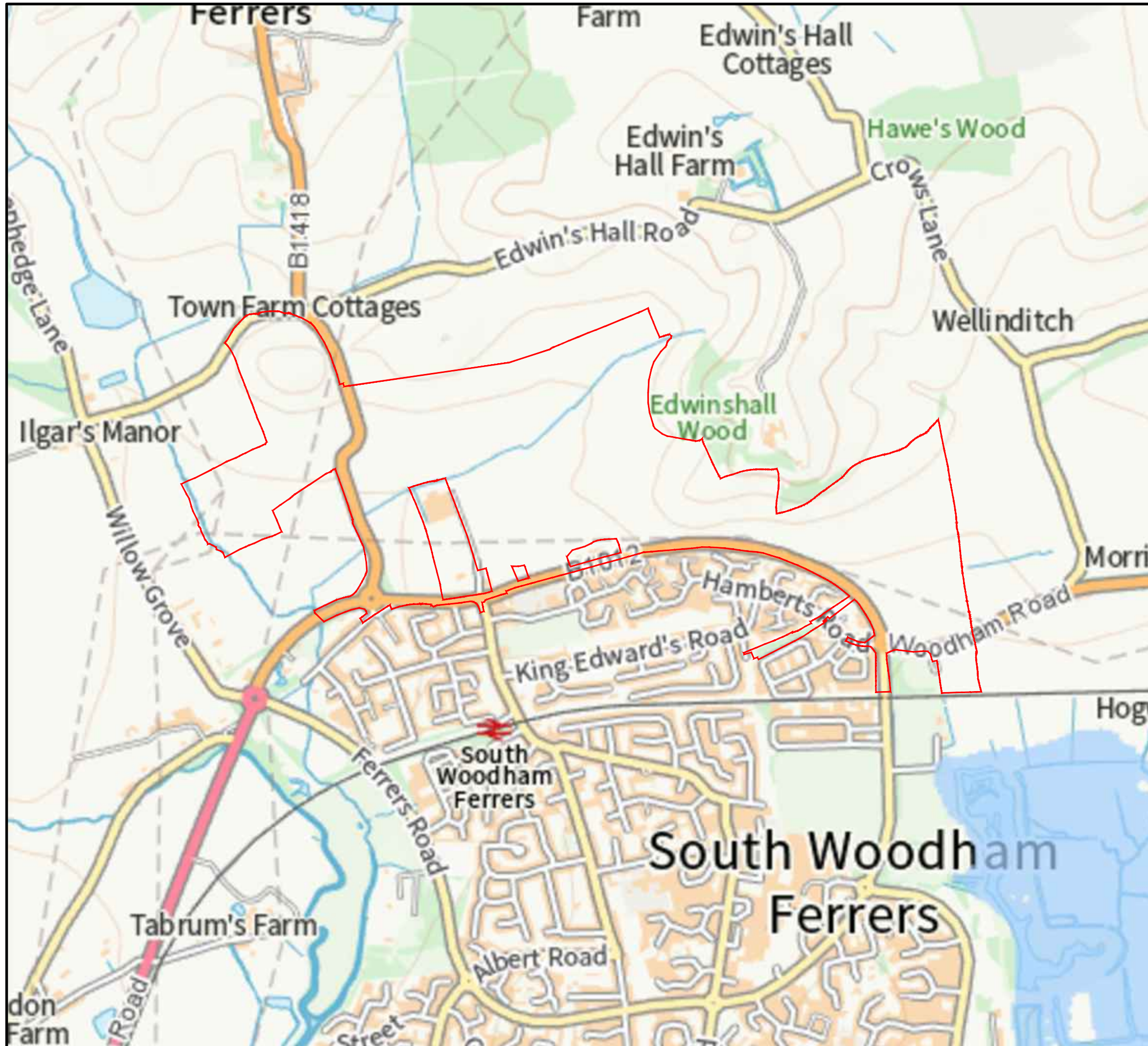
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SHEET TITLE

FIGURE 11
FLOOD RISK FROM SURFACE WATER

SHEET NUMBER

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FIGURE 12
FLOOD RISK FROM RESERVOIRS

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60567432-ACM-00-00-SHT-DR-00009

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FIGURE 13
FLOOD RISK FROM RIVERS AND SEA

SHEET NUMBER

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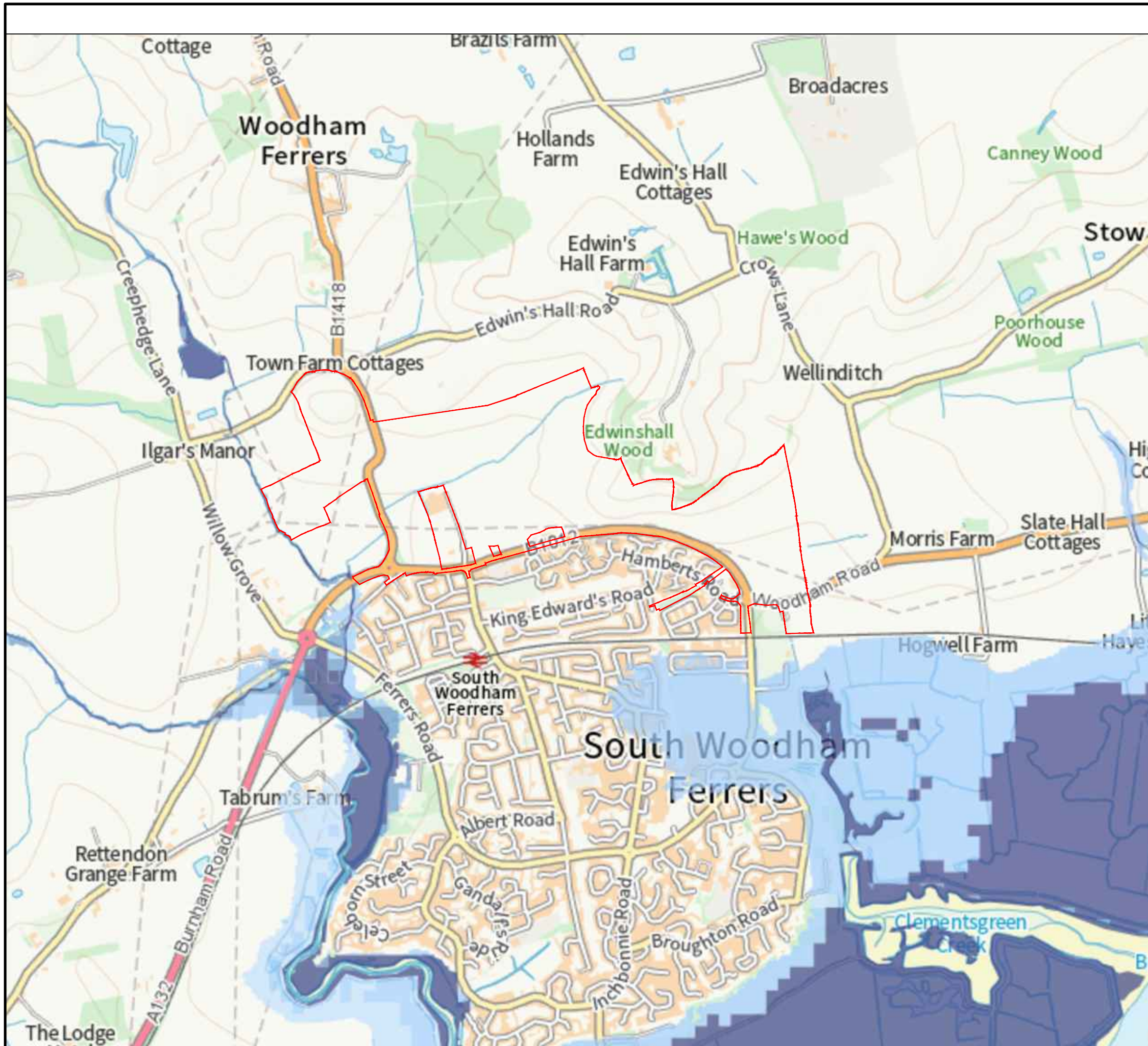
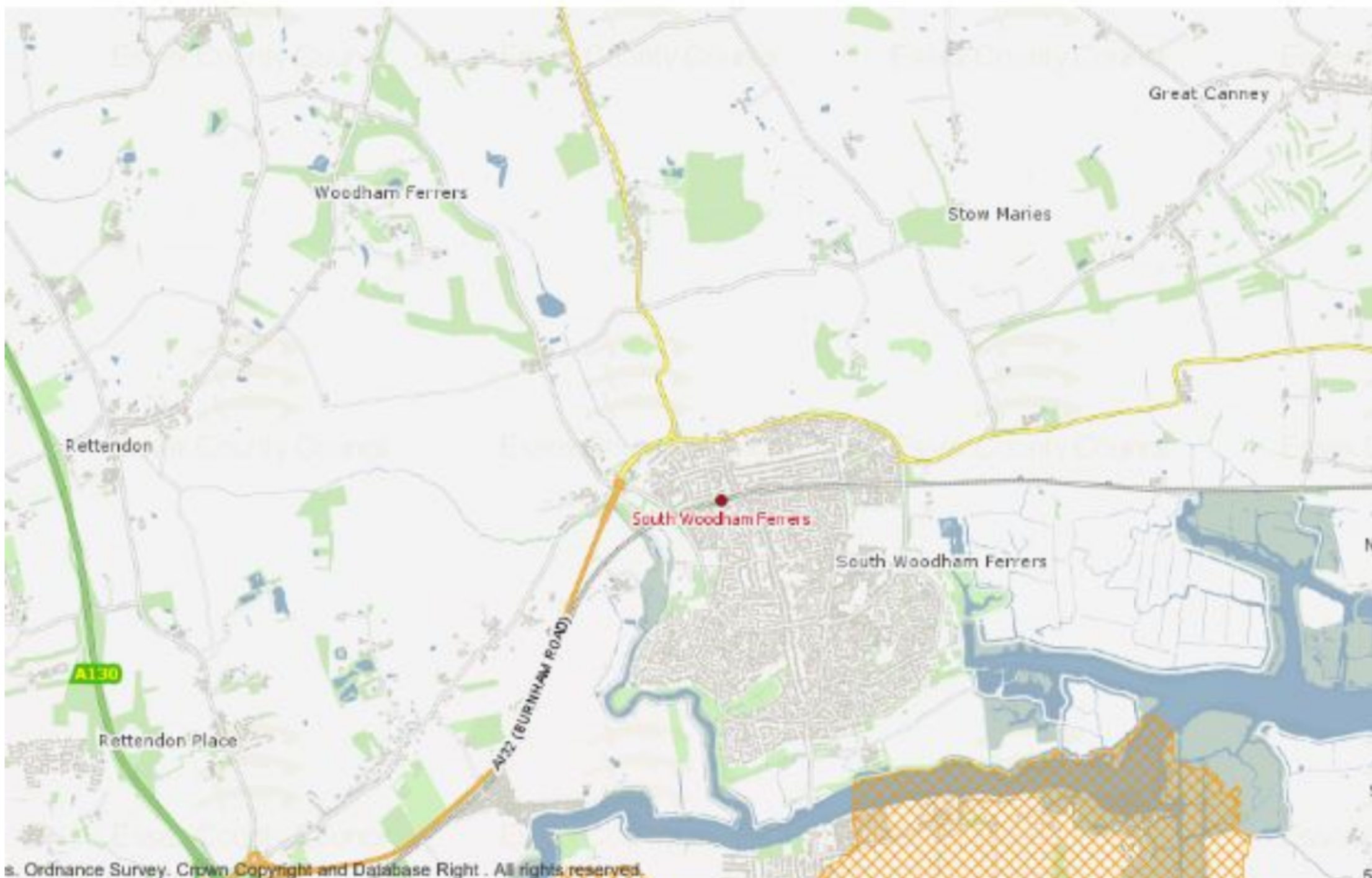


Figure 14. Critical Drainage Areas



Appendix C – Consultation responses

Environment Agency pre-planning application response

Anglian Water pre-application letter

Lead Local Flood Authority correspondence

ECC Pre-Application response

AECOM Limited
Colmore Plaza (20 Colmore Plaza)
Colmore Circus Queensway
Birmingham
West Midlands
B4 6AT

Our ref: AE/2019/123999/01-L01
Your ref: 60567432
Date: 16 April 2019

Dear Sir/Madam

**CONSTRUCTION OF UP TO 1,500 HOMES ALONG WITH UP TO 1,000SQM.
FLEXIBLE BUSINESS FLOOR SPACE, NEW PRIMARY SCHOOL, STAND ALONE
NURSERY AND 5 PLOTS FOR TRAVELLING SHOW PERSONS.**

SOUTH WOODHAM FERRERS, CHELMSFORD, CM3 6QJ

Thank you for your recent enquiry regarding the above proposed development dated 22 March 2019.

Having reviewed your proposal we are providing you with a preliminary opinion, which outlines the key environmental issues within our remit that are relevant to your proposal and provides guidance on any actions you need to undertake. It also provides hyperlinks to where you can obtain further information and advice to help support your planning application. We offer one free preliminary opinion per site, per applicant / developer.

If you would like further advice, we would be pleased to offer this through our charged for service. Further details can be found at the end of this letter.

Flood Risk

Our maps show the site lies partially within Flood Zone 2 and 3, the medium and high probability zone. The application is for 1500 dwellings, office space, school and nursery and 5 plots for travelling persons, which is considered to have a mixed vulnerability ranging from less vulnerable to highly vulnerable land use in [Table 2: Flood Risk Vulnerability Classification](#) of the Planning Practice Guidance. It is therefore necessary for the application to pass the Sequential and Exception Tests and to be supported by a site-specific Flood Risk Assessment (FRA).

This FRA should demonstrate that 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'.

We have included with our response a factsheet which sets out the minimum requirements for the FRA and a guidance note on climate change allowances. The latest climate change allowances can also be viewed [here](#).

Our Customers and Engagement team can provide any relevant flooding information that we have available. Please contact: ensenquiries@environment-agency.gov.uk.

Sequential Siting

A sequential approach should be applied to the site, directing more and highly vulnerable development towards areas at lowest risk. This approach is supported by the Planning Practice Guidance, reference ID: [7-053-20140306](#), which states 'Layout should be designed so that the most [vulnerable uses](#) are restricted to higher ground at lower risk of flooding, with development which has a lower vulnerability (parking, open space, etc) in the highest risk areas, unless there are overriding reasons to prefer a different location.'

Flood Risk Activity Permit

Flood Defence Consents now fall under the new Environmental Permitting (England and Wales) Regulations 2010 system (EPR). The applicant may need an environmental permit for flood risk activities if they want to do work in, under, over or within 16m of the river and of any flood defence structure or culvert of the Fen Brook, designated a 'main river'.

The EPR are a risk-based framework that enables us to focus regulatory effort towards activities with highest flood or environmental risk. Lower risk activities will be excluded or exempt and only higher risk activities will require a permit. Your proposed works may fall under an either one or more of the below:

- 'Exemption,
- 'Exclusion',
- 'Standard Risks Permit'
- 'Bespoke permit.

New forms and further information can be found at: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>. Anyone carrying out these activities without a permit where one is required, is breaking the law.

Please contact our National Customer Contact Centre to assess which category your proposed works fall under. They will then be able to tell you the classification of your application, the fee associated with your application, and how to proceed forward. They can be contacted by email at: floodriskactivity@environment-agency.gov.uk

Charged for Service

Should you wish us to review any technical documents or want further advice to address the environmental issues, we can do this as part of our charged for 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 for 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 plus VAT. We will provide you with an estimated cost for any further discussions or review of documents. The terms and conditions of our charged for service are available [here](#).

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 trust that the above information is of assistance. If you'd like further detailed advice, please don't hesitate to contact me using the details below.

Yours faithfully



Miss Natalie Kermath
Planning Advisor

Direct dial 02077141064

Direct e-mail natalie.kermath@environment-agency.gov.uk



Anglian Water Services Ltd

Thorpewood House
Thorpewood
Peterborough
PE3 6WT

Sent by email

28/11/2019

Tel 0345 60 66 087 Option 1

Email:

hwilson4@anglianwater.co.uk

www.anglianwater.co.uk

Countryside Properties- Land North of Burnham Road, South Woodham

Ferrers

Dear Sirs

Anglian Water has worked with the applicant and the applicant's consultants through pre-application discussions and will continue to work closely with them throughout the planning process to ensure that the development is delivered, should permission be granted, in line with the approved drainage strategy.

Both Anglian Water and the applicants are aware that infrastructure improvements and upgrades are required to serve the development site in full. Detailed modelling work will be undertaken to ensure that the best solution is found and implemented and mitigation works identified.

We are committed to continuing our engagement with the applicant regarding this development site, and will liaise with the local planning authority throughout the planning process.

If you wish to discuss any aspect of this letter please contact us.

Hannah Wilson
Pre Development Planning Manager

Registered Office
Anglian Water Services Ltd
Lancaster House, Lancaster Way,
Ermine Business Park, Huntingdon,
Cambridgeshire. PE29 6YJ
Registered in England
No. 2366656.

an AWG Company

Trigueros, Borja

From: Floods <Floods@essex.gov.uk>
Sent: 16 October 2019 11:43
To: Trigueros, Borja
Subject: RE: South Woodham Ferrers - SWMP & PFRA Reports

Good morning,

Thank you for your email.

After reviewing our records and mapping, we have found that the proposed development site is not located within a SWMP study area so we don't have any further information in this respect. The closest SWMP is the South Essex SWMP which covers Rochford, Castle Point and Basildon.

We do have a PFRA which covers the whole of Essex but this is very high level and simply summarises the total number of residential and commercial properties that are at risk of Surface Water Flooding across the county. This is publicly available information so can be provided by ECC on request but information should be available more widely on the .gov.uk website.

I hope this helps, and please let me know if you have any further questions.

Kind regards,

Amanda Rossell
Sustainability and Resilience Officer
Essex County Council | County Hall, Chelmsford, CM1 1QH
Amanda.rossell@essex.gov.uk

From: Trigueros, Borja <Borja.Trigueros@aecom.com>
Sent: 02 October 2019 16:34
To: Floods <Floods@essex.gov.uk>
Cc: Farmer, Anne <Anne.Farmer@aecom.com>
Subject: South Woodham Ferrers - SWMP & PFRA Reports

Good Afternoon,

Our client Countryside Properties is preparing a planning application on South Woodham Ferrers. The site covers an area of approximately 96 Ha. It is located to the north of Burnham Road (B1012) and to the east of Willow Grove. Ordnance Survey National Grid reference to the centre of the site is E 580582, N198497 and the closest postcode is CM3 5QN.

We are commissioned with preparing a Flood Risk Assessment and Drainage Strategy. We would be grateful if you could provide a copy of the Surface Water Management Plan and the Preliminary Flood Risk Assessment Report of the area.

Many thanks,
Borja

Borja Trigueros BEng, MEng
Assistant Infrastructure Engineer
M +447795 917 070

borja.trigueros@aecom.com

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Essex County Council
Development and Flood Risk
Waste & Environment
E3 County Hall
Chelmsford
Essex CM1 1QH



Borja Trigueros

Date: 14 May 2020
Our Ref SUDS-004465

Dear Ms Trigueros,

Pre-application Response – North of South Woodham Ferrers

Thank you for contacting us for pre-application advice which provides Essex County Council (ECC) with the opportunity to assess and advise on the proposed surface water drainage strategy for the aforementioned planning application.

As the Lead Local Flood Authority (LLFA) ECC provides advice on SuDS schemes for major developments. ECC have been statutory consultee on surface water since the 15th April 2015.

In providing advice this Council looks to ensure sustainable drainage proposals comply with the required standards as set out in the following documents:

- Non-statutory technical standards for sustainable drainage systems
- Essex County Council's (ECC's) adopted Sustainable Drainage Systems Design Guide
- The CIRIA SuDS Manual (C753)
- BS8582 Code of practice for surface water management for development sites.

Lead Local Flood Authority position

After reviewing the submitted documents please see a summary of our comments below:

ECC is statutory consultee to ensure the adoption of sustainable ways of surface water management where above ground storage is our preferred option when considering drainage strategies for new developments. Above ground storage options maximize the amenity and biodiversity benefits of SUDS. It is preferable that these are implemented throughout the development and integrated into the proposed landscaping as extensively as practicable.

Overall Drainage Strategy

The proposed development at North of South Woodham Ferrers is a large major development and comprises of 8 sub-catchments. The drainage strategy has included SUDS features such as swales and detention basins. All existing ditched would be retained and the site discharge would be made using 3 outfalls into watercourses.

Having reviewed the surface water drainage strategy and flood risk assessment it is considered that the proposed surface water drainage and flood mitigation proposal has sufficiently address the SUDS principles to manage surface water flows from the site and also mitigated the overland flow by incorporating open SUDS features.

The surface water attenuation would be provided by detention basins and discharge from the site would be restricted to 1 in 1 year greenfield run off rates for all events including 1 in 100 plus 40% allowance of climate change. Further it was agreed to explore the suitability of infiltration by undertaking ground testing in line with BRE Digest 365 Soakaway Design. In case of positive infiltration, it is recommended to use onsite infiltration as the first method of discharge and or an opportunity to make the scheme more flood resilient by using hybrid infiltration.

It is notice that the discharge rates are expressed in relation to the multiple catchments 1 in 1 year greenfield rates and no information was given for 1 in 1 year discharge from the entire site. During the pre-application meeting it was discussed the combined discharge from multiple sites would not exceed from 1 in 1 year greenfield runoff rates for the whole site. This information should be included in drainage strategy.

Please note the discharge rate of detention basin "J" is given in drawing number XX-C-DR-0030 and 0031) is not in line with the discharge rates provided for detention basin J in table 6-10. It is assumed the attenuation volume is given for individual basin (J) however the discharge rates were expressed for total network J.

The drainage strategy has satisfied the SUDS principles at a scale of sub-catchments, it is recommended to use the same principal to achieve surface water management at individual parcel or development scale and provide additional benefits using range of SUDS features to improve water quality and enhance landscape with green and blue infrastructure.

Maintenance and Adoption

The on-going maintenance of any features will be necessary to ensure that flooding does not occur due to failure of components. A maintenance plan should be provided as part of the planning application process detailing the maintenance activities and frequencies as well as who will be maintaining the system.

We understand that Anglian Water do adopt SuDS schemes within this region upon a scheme meeting their Adoption Criteria. If you intend to have them adopt your scheme, you will also need to provide proof that you have sent an Expression of Interest to them, or an Approval in Principle of your design.

Additional comments:

At some point during the planning stage, you would need to show how surface water will be managed during the construction phase.

You would also need to demonstrate how surface water impacts on the drainage system before and after development, and how the new development improves existing land drainage or surface water management.

Under Section 23 of the Land Drainage act (1991) any proposed structure that impacts on the cross-sectional area of a watercourse will require Ordinary Watercourse consent to be sought from Essex County Council. Such applications are separate from and are required in addition to the planning process.

The LLFA would expect the following documentation to be submitted at Outline Planning Application stage:

- Flood Risk Assessment
- Drainage strategy
- Preliminary layout drawings showing potential features, and location of discharge points
- Preliminary storage calculations and greenfield runoff rate calculations
- Preliminary landscape proposals
- Preliminary ground investigation report, to show potential infiltration viability
- Evidence of third-party agreement to discharge

This is not an exhaustive list and other information may need to be submitted alongside the application, pending on the site-specific requirements.

Please note:

The advice provided by the Council's Officers is informal opinion only and is made without prejudice to any formal decision that may be given in the event of an application being submitted.

In particular, any advice given will not constitute a formal response or recommendation of the County Council. Any views or opinions expressed are in good faith and to the best of ability, without prejudice to the formal consideration of any application, which will ultimately be decided by the Local Planning Authority. The County Council cannot guarantee that new issues will not be raised following submission of a planning application and consultation upon it.

Officers cannot give guarantees about the final formal decision that will be made on planning or related applications. However, the advice contained within the written response will be considered by officers when considering any future planning application. This is subject to the proviso that circumstances and information may change or come to light that could alter the position. It should be noted that the weight given to pre-application advice will change if new material considerations arise.

Whilst we have no further comments at this stage, we strongly recommend you engage in pre-application consultation with any other organisations that maybe relevant to the proposed drainage strategy to avoid potential delays at the application stage. If you have any queries about any advice we have given please do not hesitate to contact us.

Yours sincerely,

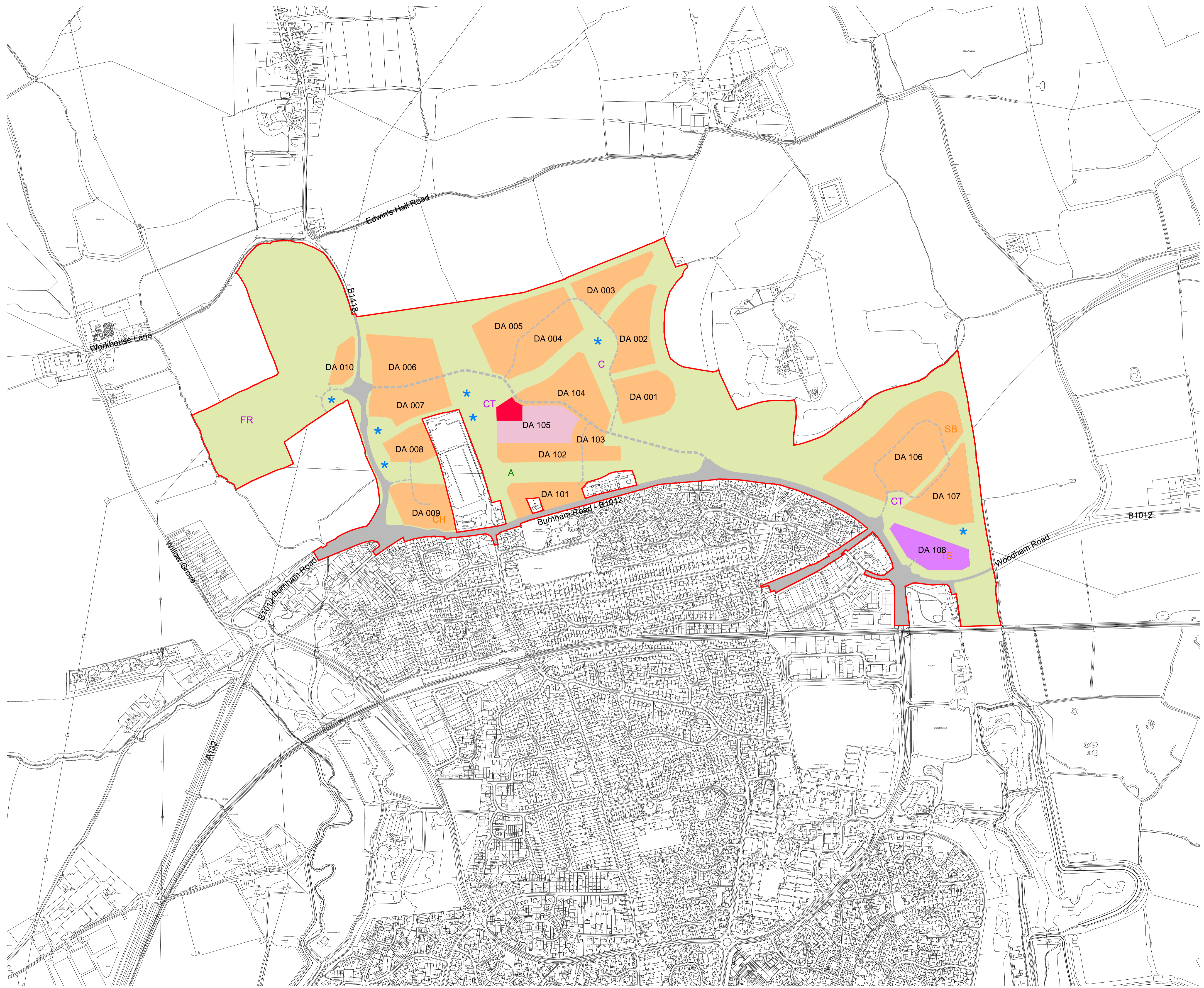
Dr Zahida Yousaf
Senior Development and Flood Risk Officer
Team: Development and Flood Risk
Service: Waste & Environment
Essex County Council

Internet: www.essex.gov.uk
Email: suds@essex.gov.uk

Appendix D – Proposed Development Plans

Proposed Site Plan

Surface Water Drainage Strategy – Flood Zone Areas



Contractors and consultants are not to scale dimensions from this drawing

- Extent of application □
- Land use - residential ■
Including front and back gardens, internal circulation, utilities, parking spaces, sustainable drainage and landscaped areas.
- Land use - education ■
- Land use - mixed use area ■
- Land use - local centre ■
- Land use - landscape ■
Including informal and formal open space, sports pitches, equipped play areas, parkland, woodland, buffer planting, ponds, SUDs features, footpaths, cycle routes and internal roads.
- Land use - highways and access ■
Including footpaths, cycle routes and landscaping.
- Primary spine street - Indicative alignment ---
- Secondary access street - Indicative alignment ---
- Care Home - broad location CH
- Self Build Area - broad location SB
- Travelling Showpeople Area - broad location TS
- Childrens and teenagers play - broad location CT
- Childrens play - broad location C
- Formal recreation - broad location FR
- Allotments - broad location A
- Sustainable drainage feature - broad location *

Note: The precise definition of developable boundaries will be determined at Reserved Matters stage. The developable area includes areas of residential, education, mixed use and local centre land uses and will not exceed 41.24 ha.

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F: +44 (0)20 7261 4300
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www.BroadwayMalyan.com

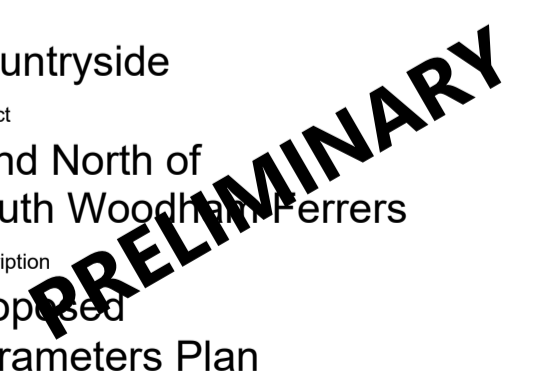
Client
Countryside

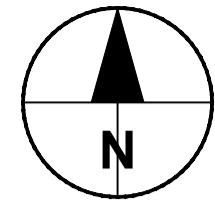
Project
Land North of South Woodham Ferrers

Description
Proposed Parameters Plan Land Use

Status
Preliminary

Scale	Drawn By	Date
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Job Number	Drawing Number	Revision
32461	321	P7





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2. DO NOT SCALE FROM THIS DRAWING. ONLY USE PRINTED DIMENSIONS.
3. ALL LEVELS ARE IN m AOD.
4. THE GREENFIELD RUNOFF RATE HAS BEEN CALCULATED USING THE IH124 (ICO SUDS) METHOD AS RECOMMENDED BY ESSEX COUNTY COUNCIL'S SUDS DESIGN GUIDE (APRIL 2016). GREENFIELD RUNOFF FOR THE SITE IS 2.984 l/ha/s.
5. AREAS NOT CONSIDERED IN THE CATCHMENTS ARE TO REMAIN OPEN SPACES UNMODIFIED BY THE DEVELOPMENT. THE SURFACE RUNOFF OF SOME OF THESE AREAS WILL BE REDIRECTED BACK INTO THE MAIN WATERCOURSE AT THE SAME LOCATION AS PER EXISTING CONDITIONS, AS ILLUSTRATE BY THE INDICATIVE SWALES SHOWN ON THE PLAN
6. PROPOSED OUTFALLS, DITCHES AND SWALES ARE SUBJECT TO AGREEMENT WITH EA WHERE DISCHARGING INTO A MAIN RIVER OR WITH LLFA WHERE DISCHARGING INTO ORDINARY WATERCOURSE.
7. PROPOSED DITCHES AND SWALES ARE SHOWN INDICATIVELY ONLY. SIZE SHOULD BE CONFIRMED IN A FURTHER STAGE. CONDITION OF EXISTING DITCHES TO BE CONFIRMED. EXISTING DITCHES MIGHT NEED TO BE UPGRADED TO CONVEY RUNOFF FLOWS.
8. ANY WORKS IN VICINITY OF ORDINARY WATERCOURSES WILL REQUIRE APPROVAL FROM THE COMPETENT AUTHORITY.
9. RUNOFF FROM OVERLAND FLOWS WILL BE CAPTURED UPSTREAM OF PROPOSED DEVELOPMENT AREAS AND CONVEYED TO THE EXISTING WATERCOURSE THROUGH EXISTING AND PROPOSED SWALES, MIMICKING THE NATURAL DRAINAGE REGIME. RAINFALL WITHIN PROPOSED DEVELOPMENT AREAS WILL BE ATTENUATED TO THE GREENFIELD 1 IN 1 YR. RUNOFF RATE, HENCE THE FLOW TO THE WATERCOURSE ON EXTREME EVENTS WILL BE REDUCED.



PROJECT

Oaklands Meadows

CLIENT

Countryside Properties

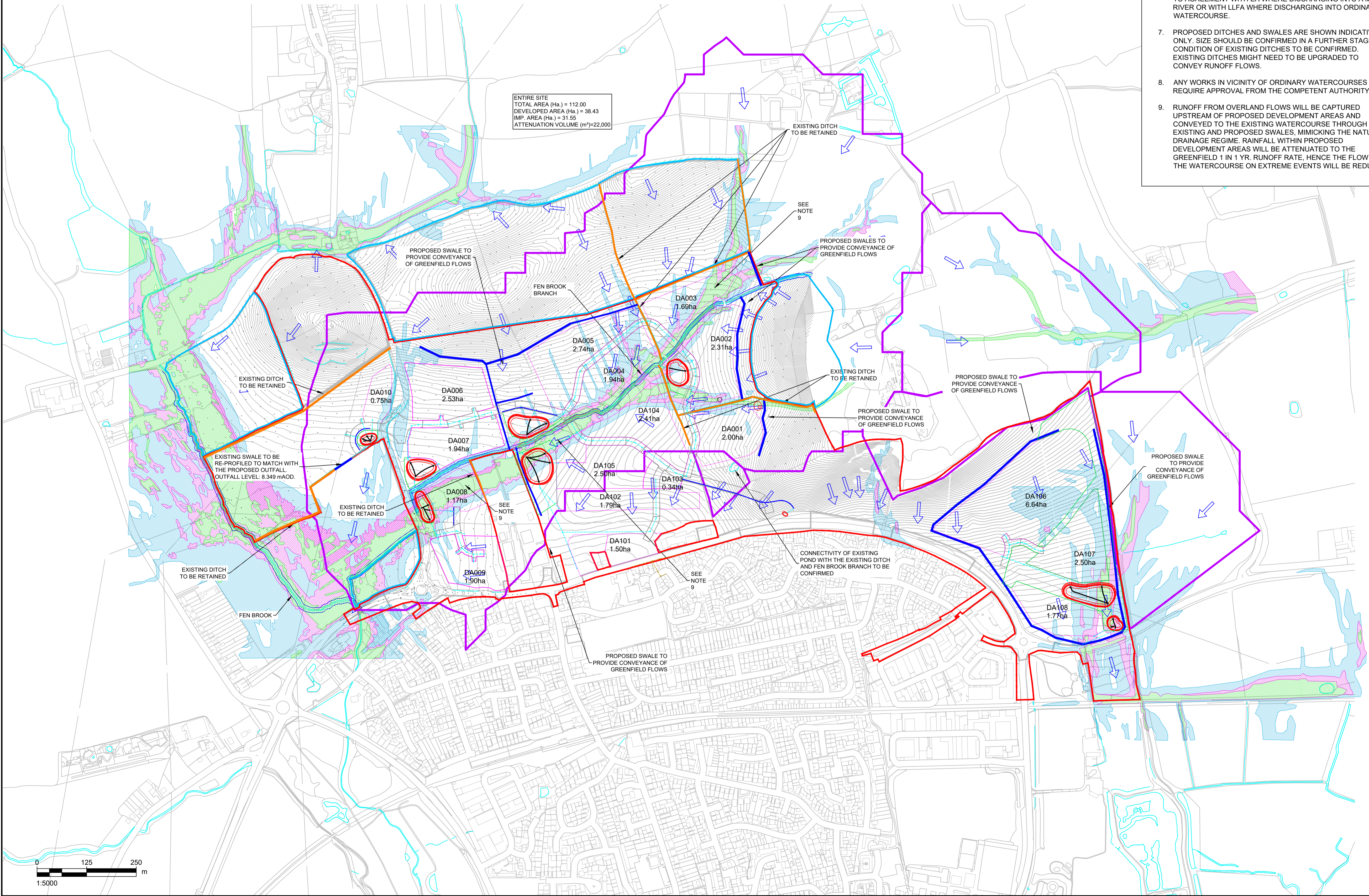
CONSULTANT

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KEY PLAN

- SITE BOUNDARY
- EXISTING WATERCOURSE
- EXISTING DITCH
- PROPOSED SWALE
- PROPOSED DRAINAGE PIPE
- PROPOSED DETENTION BASIN
- PROPOSED HIGHWAY AREA
- PROPOSED DEVELOPMENT AREA (DA)
- PROPOSED GREEN AREA (GA)
- PLUVIAL FLOOD RISK:
 - 30-YR EXTENT
 - 100-YR EXTENT
 - 1000-YR EXTENT
- CONTRIBUTING CATCHMENT
- OVERFLOW FLOOD PATHS

ENTIRE SITE
TOTAL AREA (Ha.) = 112.00
DEVELOPED AREA (Ha.) = 38.43
IMP. AREA (Ha.) = 31.55
ATTENUATION VOLUME (m³)=22,000



ISSUE/REVISION

Rev	Date	Description	Dwn	Chk	App
P03	23/09/21	PROJECT NAME CHANGE	JH	BT	AF
P02	17/06/21	BOUNDARY UPDATED	GS	BT	AF
P01	16/06/21	ISSUED FOR PLANNING	AH	BT	AF

PROJECT NUMBER

60567432

SHEET TITLE

PLUVIAL RISK OF FLOODING

SHEET NUMBER

L00005-AEC-NA-NA-DR-C-5004

