



UNIVERSAL DESTINATIONS & EXPERIENCES UK PROJECT

Former Kempston Hardwick Brickworks
and adjoining land, Bedford

Environmental Statement Volume 3

Appendix 12.1 - Flood Risk Assessment

Part 2/6

Report reference: 4.12.1.0

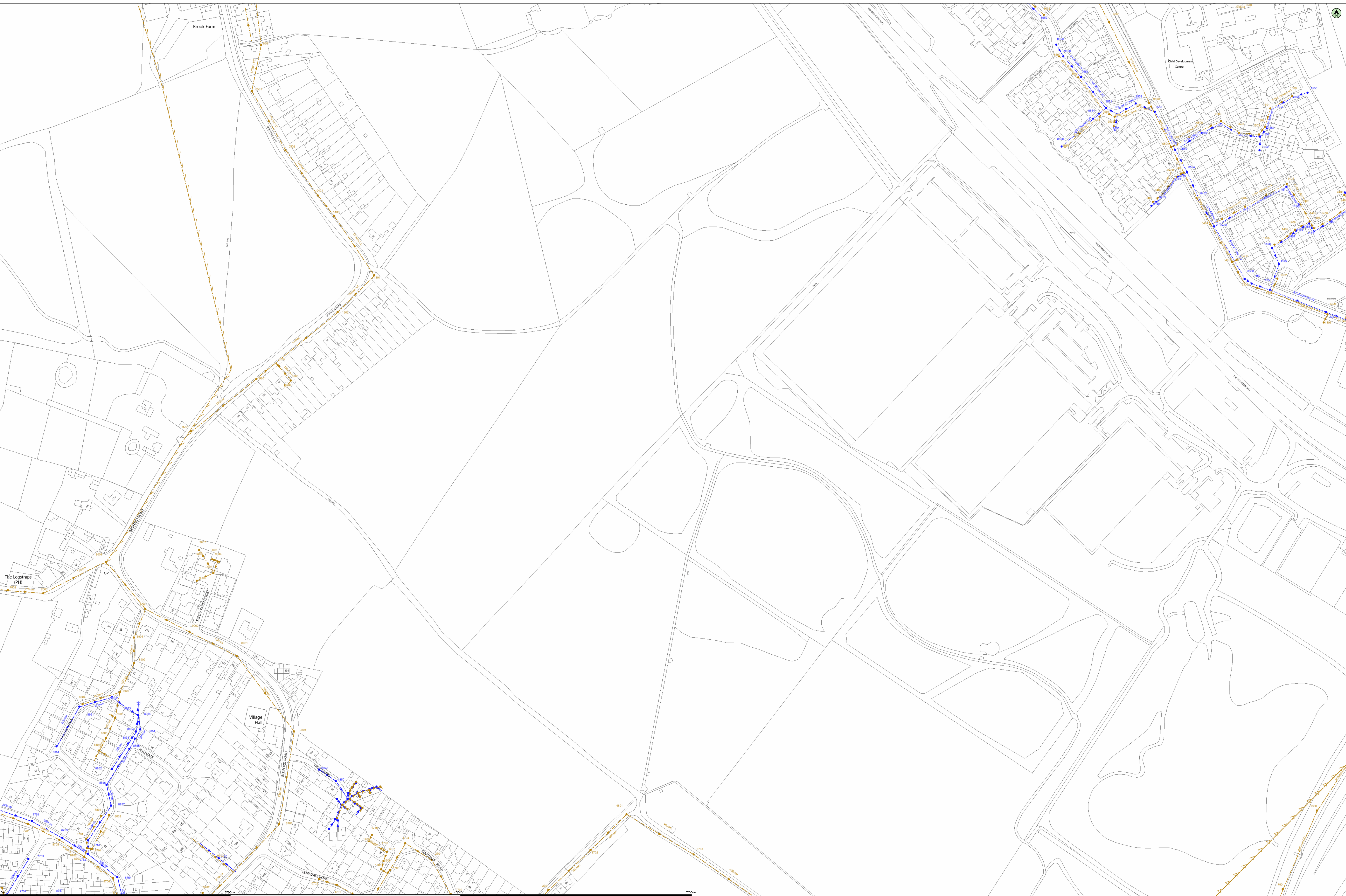
Revision number: 00

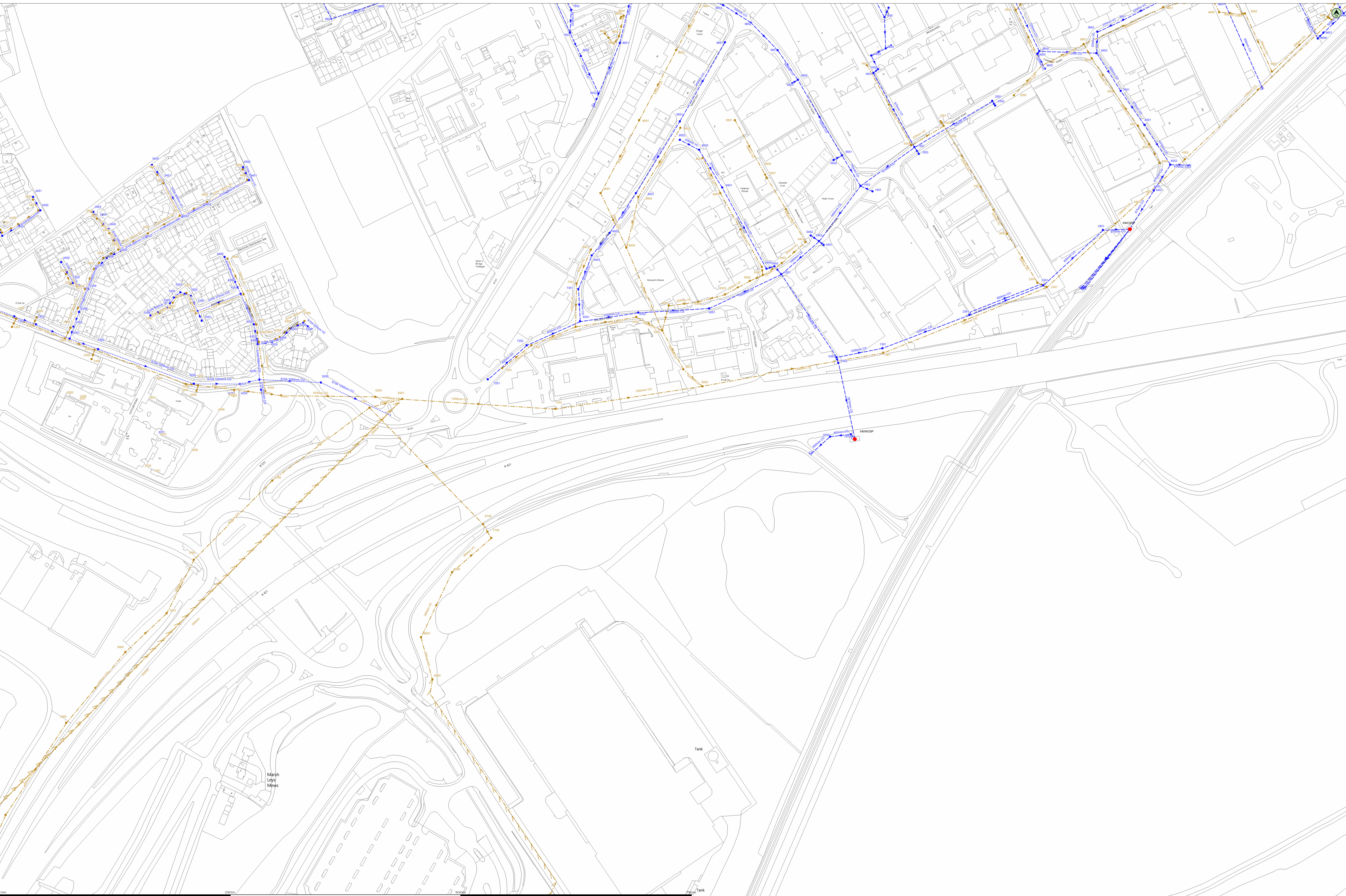
Date: June 2025



Annex 2

ANGLIAN WATER ASSET RECORDS





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This plan is provided by Anglian Water pursuant to obligations under the Water Industry Act 1991 sections 188 or 189. It must be used in conjunction with any search results obtained. The information on this plan is based on data currently recorded but cannot be regarded as definitive. See the plan, private sewers and drains are generally not shown. Sinks or manholes are shown where a connection has been surveyed or where a sink or manhole is shown on the plan. The actual position of all separate MSET be established by trial holes. No liability whatsoever, including liability for negligence, is accepted by Anglian Water for any error or inaccuracy or omission, including the failure to accurately record, or record at all, the location of any water main, discharge pipe, sewer or disposal man or any item of apparatus. This information is valid for the date printed. This plan is produced by Anglian Water Services Limited (c) Crown copyright and database rights 2024 Ordnance Survey 100022432 This map is to be used for the purposes of viewing the location of Anglian Water plant only. Any other uses of the map data or further copies is not permitted. This notice is not intended to exclude or restrict liability for death or personal injury resulting from negligence.

Foul Sewer	—●—●—●—	Outfall*	☐	Sewage Treatment Works	☐
Surface Sewer	—●—●—●—	Inlet*	☐	Public Pumping Station	☐
Combined Sewer	—●—●—●—	Manhole*	●	Decommissioned Pumping Station	●
Final Effluent	—●—●—●—				
Rising Main*	—●—●—●—				
Private Sewer*	—●—●—●—				
Decommissioned Sewer*	—●—●—●—				

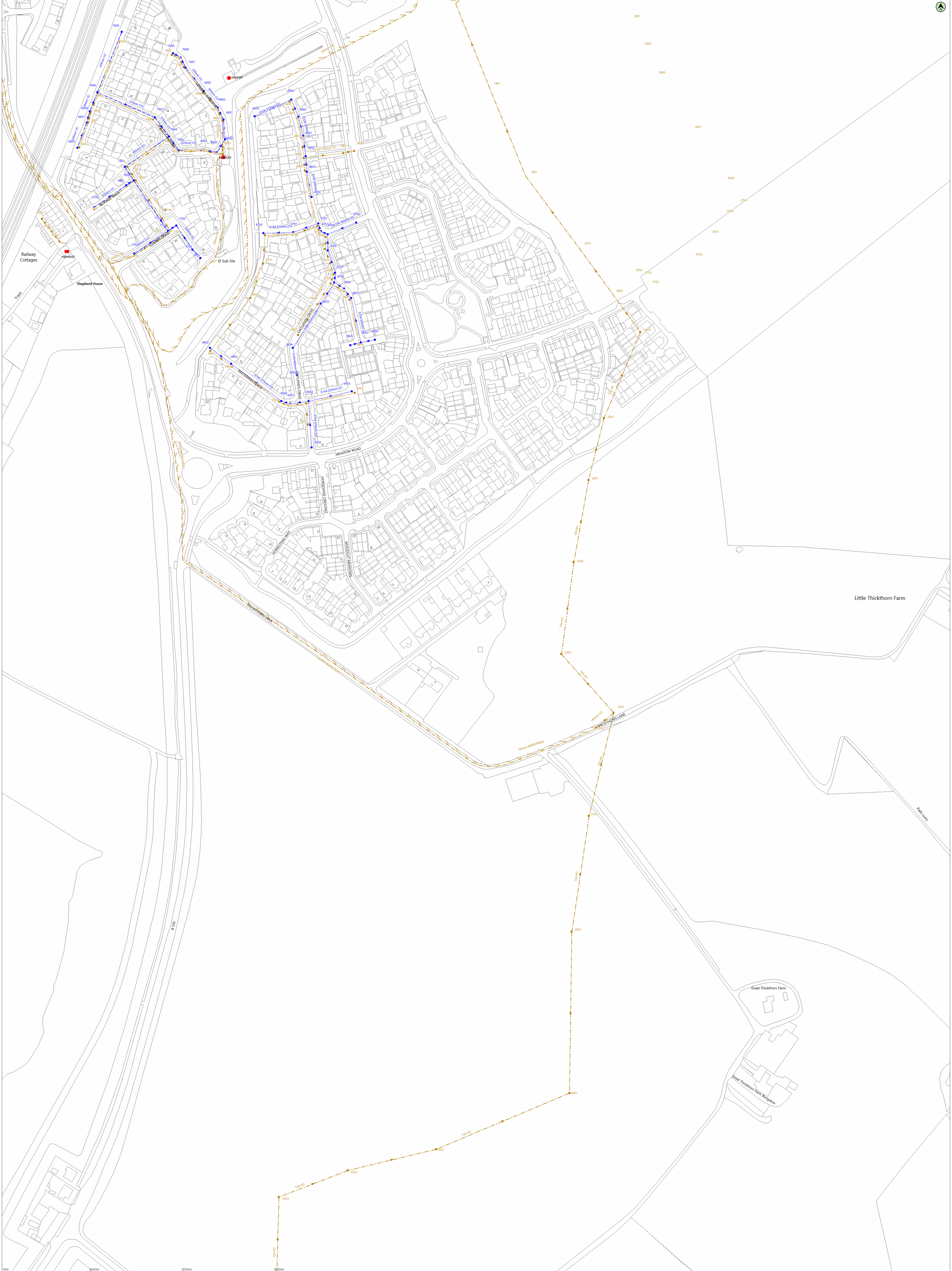
*Colour denotes effluent type

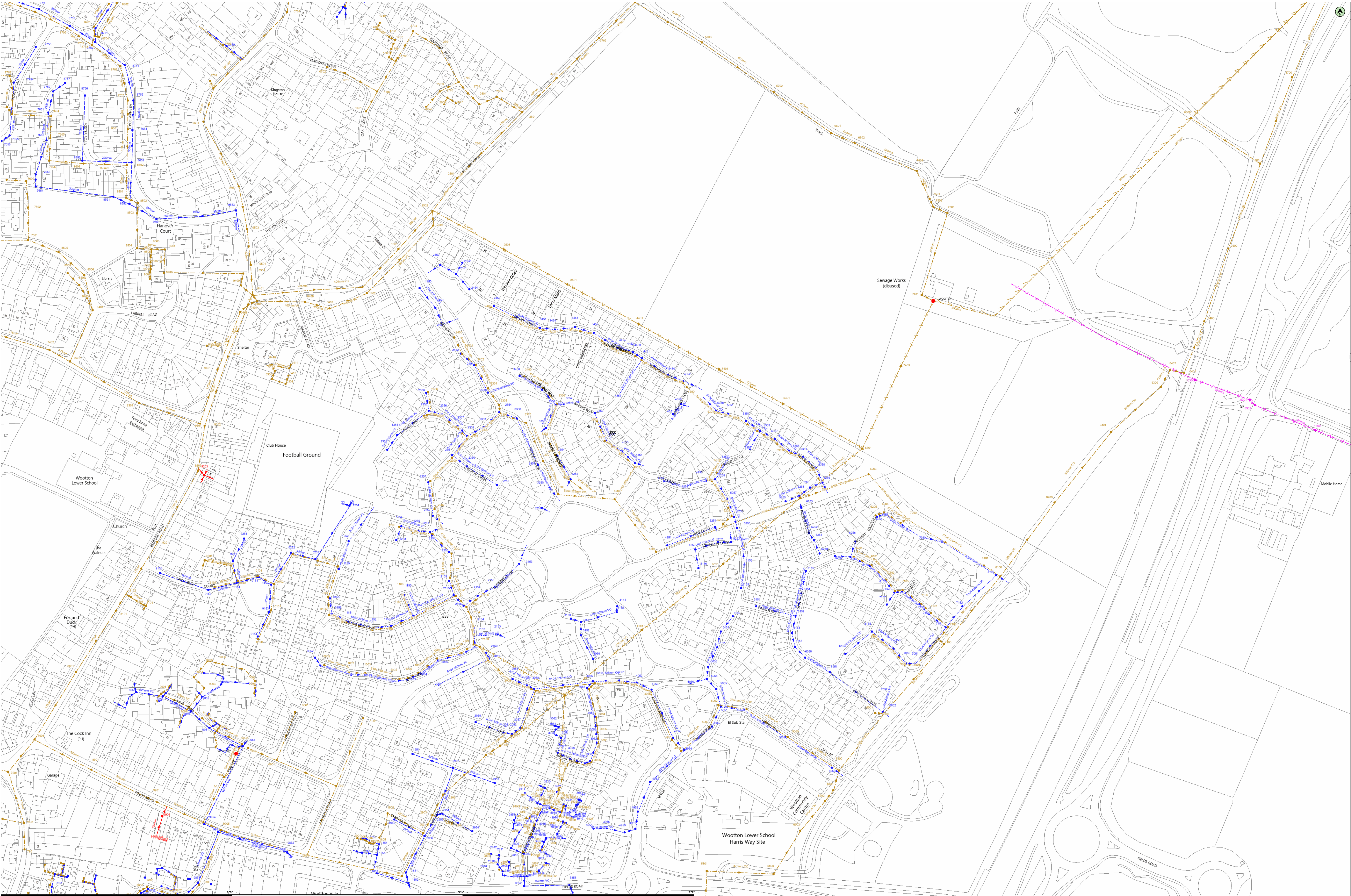
mal@groundwise.com
55021-2

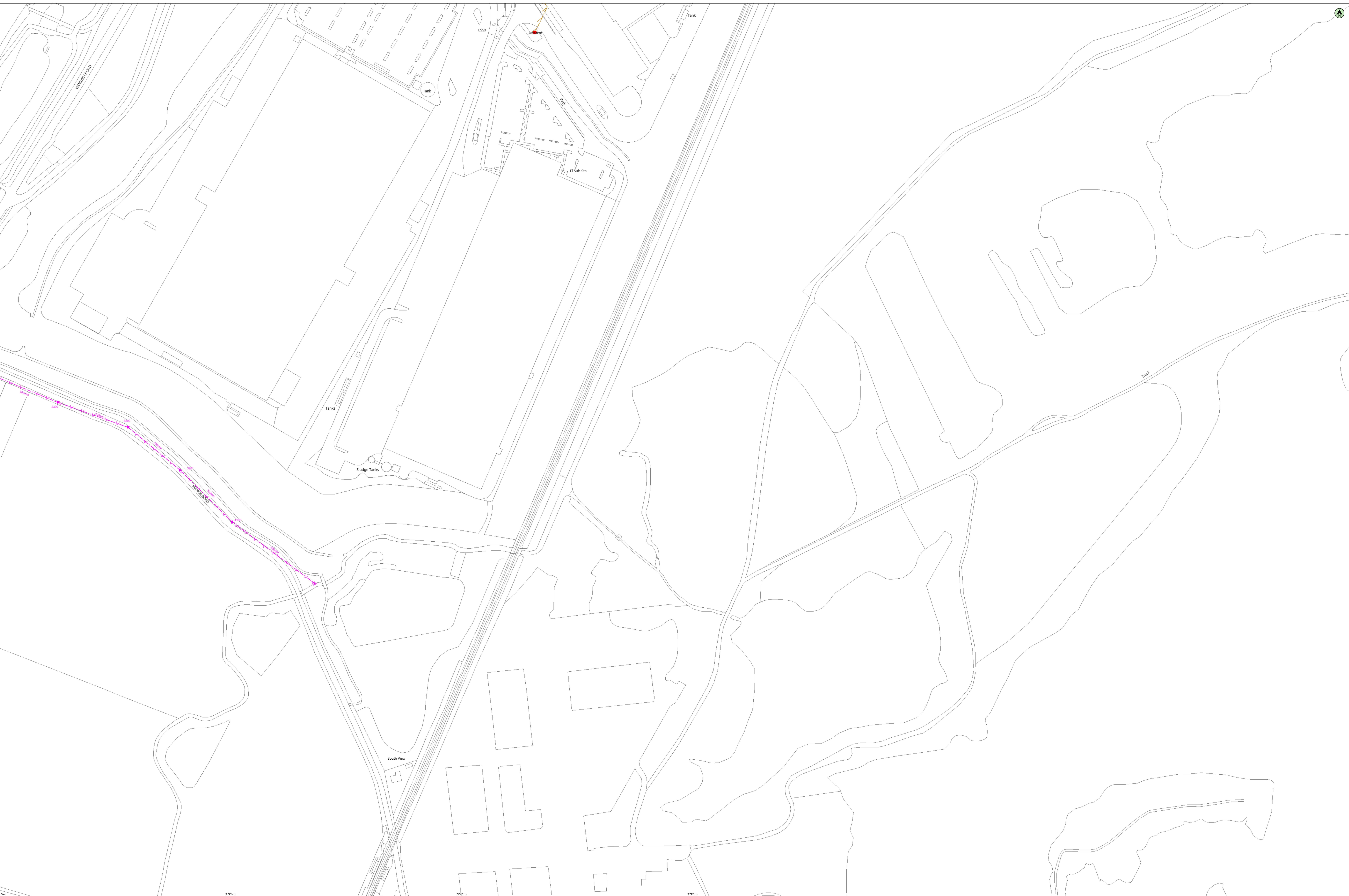
love every drop
anglianwater











This plan is provided by Anglian Water pursuant to obligations under the Water Industry Act 1991 sections 188 or 189. It must be used in conjunction with any search results attached. This information on this plan is based on data currently recorded but positive must be regarded as approximate. See the plan, private sewers and drains are generally not shown. Users of this map are strongly advised to commission their own survey of the area shown on the plan before carrying out any works. The actual position of all apparatus MUST be established by trial holes. No liability whatsoever, including liability for negligence, is accepted by Anglian Water for any error or inaccuracy or omission, including the failure to accurately record, or record at all, the location of any water main, discharge pipe, sewer or disposal main or any item of apparatus. This information is valid for the date printed. This plan is produced by Anglian Water Services Limited (c) Crown copyright and database rights 2024 Ordnance Survey 100022432. This map is to be used for the purposes of viewing the location of Anglian Water plant only. Any other uses of the map data or further copies is not permitted. This notice is not intended to exclude or restrict liability for death or personal injury resulting from negligence.






Foul Sewer		Outfall*	
Surface Sewer		Inlet*	
Combined Sewer		Manhole*	
Final Effluent			
Rising Main*			
Private Sewer*			
Decommissioned Sewer*			

	Sewage Treatment Works
	Public Pumping Station
	Decommissioned Pumping Station
	*Colour denotes effluent type

mal@groundwise.com

55021.7

mail@groundwise.com
35021-0

Foul Sewer		Outfall*		Sewage Treatment Works	
Surface Sewer		Inlet*		Public Pumping Station	
Combined Sewer					
Final Effluent					
Rising Main*					

mail@groundwise.com
35021-0

love every drop
anglianwater

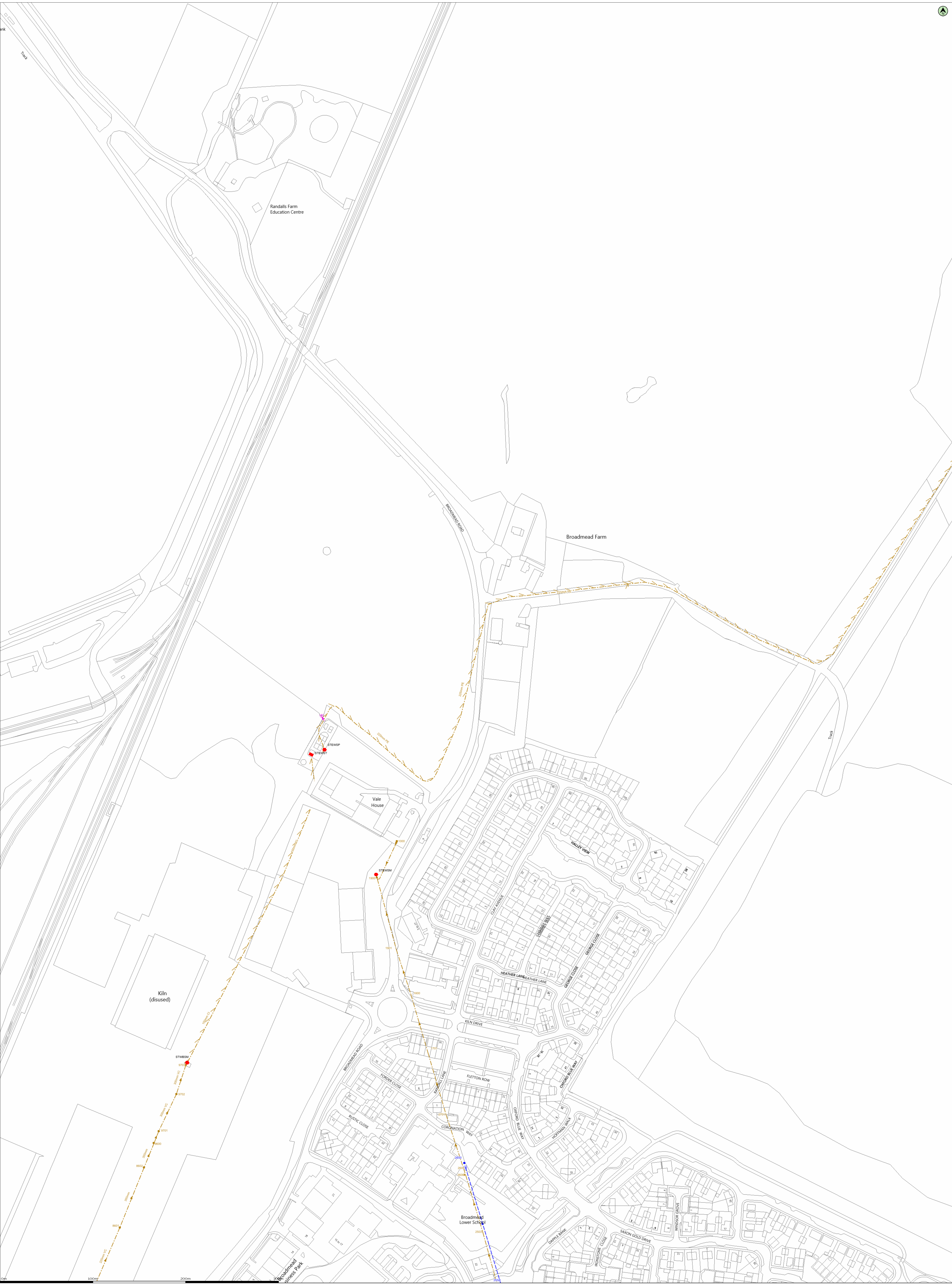
Map Centre: 502899,24433

Data updated: 31/01/24

Our Ref: 1405236 - 23

Wastewater Plan A0





This plan is provided by Anglian Water pursuant to obligations under the Water Industry Act 1981 sections 198 or 199. It must be used in conjunction with any publicly available data. The information on this plan is based on data currently recorded but position must be regarded as approximate. Sewer pipes, private sewers and drains are generally not shown. Users of this map are strongly advised to commission their own survey of the area shown on the plan before carrying out any works. The actual position of all apparatus MUST be established by trial holes. No liability whatsoever, including liability for negligence, is accepted by Anglian Water for any error or inaccuracy or omission, including the failure to accurately record, or record at all, the location of any water main, discharge pipe, sewer or sloped main or any item of apparatus. This information is valid for the date printed. This plan is produced by Anglian Water Services Limited (c) Crown copyright and database rights 2024 Ordnance Survey 100022432. This map is to be used for the purposes of viewing the location of Anglian Water plant only. Any other uses of the map data or further copies is not permitted. This notice is not intended to exclude or restrict liability for death or personal injury resulting from negligence.



Annex 3

CORRESPONDENCE

WSP



Pre-planning Assessment Report

Project Nectarine

InFlow Reference: PPE-0200598

Assessment Type: Water and Used Water

Revised Report published: 29/02/2024



Thank you for submitting a pre-planning enquiry.

This report has been produced for WSP Cardiff.

Your InFlow reference number is **PPE-0200598**.

This report can be submitted as a drainage strategy for the development should it seek planning permission.

If you have any questions upon receipt of this report, please contact the Pre-development team on **07929 786 955** or email planningliaison@anglianwater.co.uk.

Section 1

Proposed Development

The response within this report has been based on the following information which was submitted as part of your application:

List of planned developments	
Type of development	No. Of units
Non-residential	1

The anticipated residential build rate is:

Year	Y1
Build rate	1

Development type: Greenfield

Planning application status: Unknown

Site grid reference number: TL0301544725

The comments contained within this report relate to the public water mains and sewers indicated on our records.

Your attention is drawn to the disclaimer in the useful information section of this report.

Section 2 Assets affected

Our records indicate that we have the following types of assets within or overlapping the boundary of your development site as listed in the table below.

Additionally, it is highly recommended that you carry out a thorough investigation of your proposed working area to establish whether any unmapped public or private sewers and lateral drains are in existence. We are unable to permit development either over or within the easement strip without our prior consent. The extent of the easement is provided in the table below. Please be aware that the existing water mains/public sewers should be located in highway or open space and not in private gardens. This is to ensure available access for any future maintenance and repair and this should be taken into consideration when planning your site layout.

Water and Used water easement information		
Asset type	Pipe size (mm)	Total easement required (m)
Water mains	146	4.50 m either side of the centre line
Sewer mains	225	3.00 m either side of the centre line

If it is not possible to avoid our assets then these may need to be diverted in accordance with Section 185 of the Water Industry Act (1991). You will need to make a formal application if you would like a diversion to be considered.

Due to the private sewer transfer in October 2011 many newly adopted public used water assets and their history are not indicated on our records. You also need to be aware that your development site may contain private water mains, drains or other assets not shown on our records. These are private assets and not the responsibility of Anglian Water but that of the landowner.

Section 3 Water Assessment

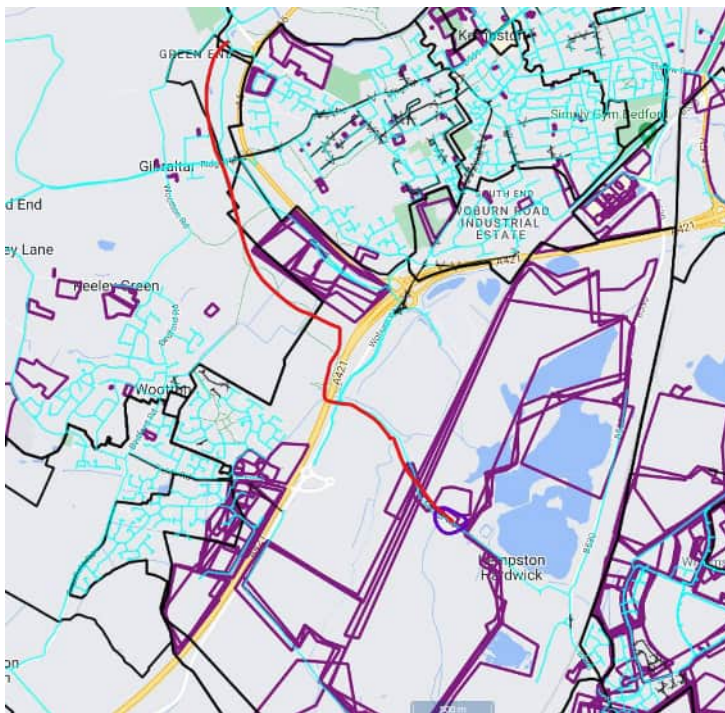
Details of modelling assessment

Peak day model used but with a reduced peaking factor of 1.1 due to predominantly urban area of interest, this peaking factor was verified against telemetry and gives a good agreement with the observed flows. The customer has provided two figures used for supply assessment a solely potable demand of 6.83ML/d peak rate 190l/s and a total demand of 8.78ML/d peak demand 223l/s.

Option 1. (Supply from Bedford, Manton Lane Reservoir)

At these flows the nearest available point of connection is the 630mm PE main located at the A6 cemetery road junction, any connection of a lesser diameter would be out of AW standard with excessive head loss and flow velocities, this discounts connection to the 450mm ring main. Given this connection point and the presence of the PRV the most viable solution is site specific main from connection point to the customers desired point of supply (POS) of a minimum 490mm ID a length of ~4.20km.

Map

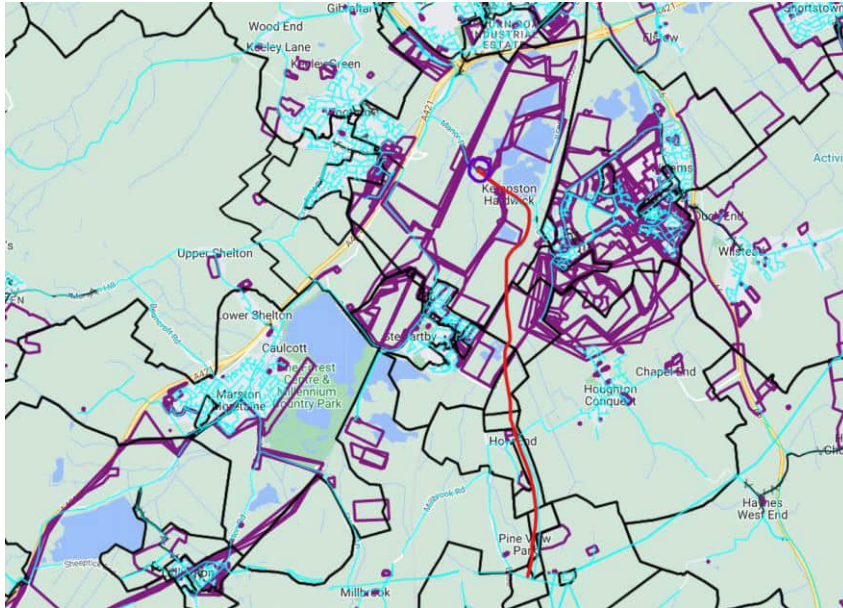


Approximate route expected for the option 1 reinforcement, purple circle being the inferred point of supply (POS). The purple circle indicates the POS.

Option 2. (Supply from Ampthill Reservoir)

The alternative connection point is the 750mm steel main from Ampthill WR to Woburn. As with the Option 1 solution the requested flows rule out connection at a closer point to a lower diameter main as these do not have sufficient capacity. Therefore, the most viable solution is a site specific main in a minimum 490mm ID running from approximately TL0346339137 to TL0268444684 which is the inferred POS (~5.6km).

Map



Approximate route expected for the option 2 reinforcement, purple circle being the inferred point of supply.

Summary Table

Name	Daily Demand (MI)	Peak Flow (l/s)	Main size (OD/ID)	Length (m)	From (map ref.)	To (Map ref.)	C55 Cost Estimate (£k)
Option 1 (Bedford supply)	8.78	223	560/490	4200	TL0135247633	TL0268444684	6,322
Option 2 (Ampthill supply)	8.78	223	560/490	5600	TL0346339137	TL0268444684	8,432

Section 4 Used water network

In examining the used water system we assess the ability for your site to connect to the public sewerage network without causing a detriment to the operation of the system. We also assess the receiving water recycling centre and determine whether the water recycling centre can cope with the increased flow and effluent quality arising from your development.

Water Recycling Centre

The foul drainage from the proposed development is in the catchment of Bedford Water Recycling Centre, which currently does not have capacity to treat the flows from your development site. Anglian Water are obligated to accept the domestic foul flows from your development with the benefit of planning consent and would therefore take the necessary steps to ensure that there is sufficient treatment capacity should the planning authority grant planning permission.

Used water network

Our assessment has been based on development flows connecting to the nearest accessible foul water sewer of the same size or greater pipe diameter to that required to drain the site. The infrastructure to convey foul water flows to the receiving sewerage network is assumed to be the responsibility of the developer. Conveyance to the connection point is considered as Onsite Work and includes all work carried out upstream from of the point of connection, including making the connection to our existing network.

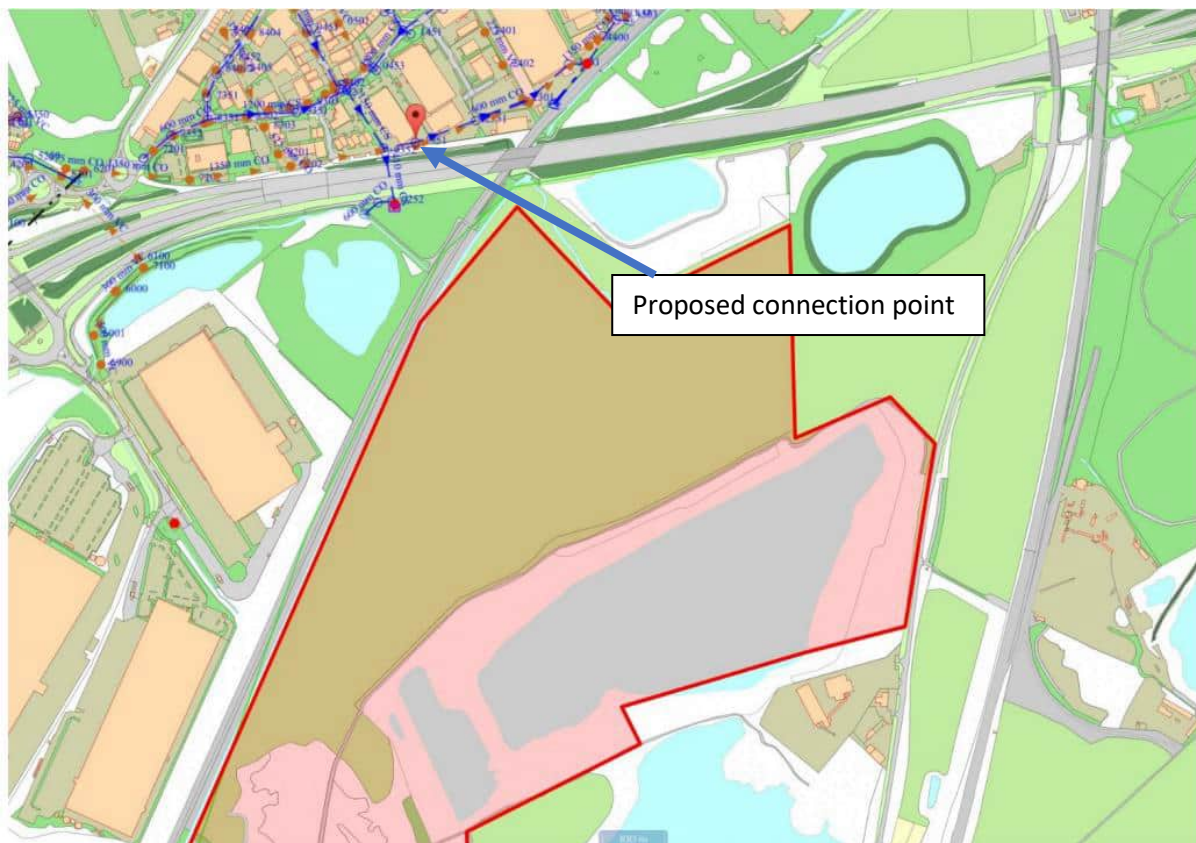
This connection point has been determined in reference to the calculated discharge flow and on this basis, a 525mm internal diameter pipe is required to drain the development site.

Based on the information submitted as part of this application, it has been identified that no trade effluent flow is being proposed, as such this assessment is based exclusively on the proposed domestic flow. If you do intend to discharge trade effluent please contact as soon as possible, as this will significantly alter our response.

The nearest network connection point that meets this criteria is at manhole 1301 located to the North West of the site adjacent to the A421 at NGR TL 03128 46311. Anglian water has assessed the impact of connecting the foul flows from the planned development to this point and unfortunately there is insufficient capacity in this sewer to accommodate your site. This catchment has been identified as an area of high growth which our assessment has indicated may have a cumulative detrimental impact on network performance. Under infrastructure charging it is the responsibility of the Sewerage Undertaker to mitigate these impacts. As such, Anglian Water will review these growth related impacts within our investment planning to support your proposed build programme.

Please note that Anglian Water will request a suitably worded condition at planning application stage to ensure this strategy is implemented to mitigate the risk of flooding. It is assumed that the developer will provide the necessary infrastructure to convey flows from the site to the network. Consequently, this report does not include any costs for the conveyance of flows.

Map



Showing your proposed foul water point of connection at manhole 1301 located to the North West of the site adjacent to the A421 at NGR TL 03128 46311

Surface water disposal

Although a surface water assessment has not been requested, there are no public surface water sewers within the vicinity of the proposed development. Therefore Anglian Water will be unable to provide the site with a feasible solution of surface water disposal within the current assets.

Alternative methods of surface water disposal will need to be investigated such as infiltration techniques or a discharge to a watercourse in accordance with the surface water management hierarchy as outlined in Building Regulations Part H.

The alternative is that a new surface water sewer is constructed which is used to convey your surface water to a watercourse or as part of a SuDs scheme, where appropriate. Subject to the sewer being designed in accordance with the current version of Sewers For Adoption, the sewer can be put forward for adoption by Anglian Water under Section 104 of the Water Industry Act 1991. If the outfall is to a watercourse, the applicant will be required to obtain consent to discharge via the appropriate body.

If your site has no means of drainage due to third party land then you may be able to requisition Anglian Water, under Section 98, to provide a connection to the public sewer for domestic drainage purposes. As part of this option, you may wish to enter into a works agreement in accordance with Section 30 of the Anglian Water Authority Act 1977. This will allow you to design and construct the public sewer using Anglian Waters' statutory powers in accordance with Section 159/168 of the Water Industry Act 1991.

As you may be aware, Anglian Water will consider the adoption of SuDs provided that they meet the criteria outline in our SuDs adoption manual. This can be found on our website at <http://www.anglianwater.co.uk/developers/suds.aspx>. We will adopt features located in public open space that are designed and constructed, in conjunction with the Local Authority and Lead Local Flood Authority (LLFA), to the criteria within our SuDs adoption manual. Specifically, developers must be able to demonstrate:

1. Effective upstream source control,
2. Effective exceedance design, and
3. Effective maintenance schedule demonstrating that the assets can be maintained both now and in the future with adequate access.

If you wish to look at the adoption of any SuDs then an expression of interest form can be found on our [website](#).

As the proposed method of surface water disposal is not relevant to Anglian Water; we suggest that you contact the relevant Local Authority, Lead Local Flood Authority, the Environment Agency or the Internal Drainage Board, as appropriate.

Trade Effluent

We note that you do not have any trade effluent requirements. Should this be required in the future you will need our written formal consent. This is in accordance with Section 118 of the Water Industry Act (1991).

Used Water Budget Costs

Your development site will be required to pay an Infrastructure charge for each new property connecting to the public water and sewerage network that benefits from Full planning permission. The infrastructure charge replaces the zonal charge as previously identified.

You will be required to pay an infrastructure charge upon connection for each new plot on your development site.

The infrastructure charge are types of charges set out in Section 146(2) of the Water Industry Act 1991.

The charge should be paid by anyone who wishes to build or develop a property and is payable upon request of connection.

- The Infrastructure Charge is based on the cost of any reinforcement and upgrades to our existing network ("Network Reinforcements"), whether designed to address strategic or local capacity issues. For more information on our Infrastructure Charge, please see the 'Useful Information' section of this report.

Infrastructure charges are raised on a standard basis of one charge per new connection (one for water and one for sewerage).

Infrastructure charge	Number of units	Total
£ TBC	TBC	£TBC

Please note that you should also budget for infrastructure charges on non-household premises where applicable and these will be calculated according to the number and type of water fittings in the premises. This is called the “relevant multiplier” method of calculating the charge and the relevant multiplier will be applied to the figures set out in our 2023-24 Developer Charging Arrangements to arrive at the amount payable. Details of the relevant multiplier for each fitting can be found on our website.

Section 5 Useful information

Water Industry Act – Key Water Sections:

Section 41

This provides you with the right to requisition a new water main for domestic purposes to connect your site to the public water network.

Section 45

This provides you with the right to have a connection for domestic purposes from a building or part of a building to the public water main.

Section 51A - E

This provides you with the right to provide the water main or service connection yourself and for us to vest them into our company.

Section 55

This applies where you request a supply of water for non-domestic purposes.

Section 185

This provides you with the right to make a reasonable request to have a public water main, sewer or public lateral drain removed or altered, at your expense.

Details on how you can make a formal application for a new water main, new connection or diversion are available from our Development Services team on **03456 066 087** or via our [website](#)

If you have any other queries on the rights to requisition or connect your housing to the public water and sewerage infrastructure then please contact our Development Services team at:

Development Services
Anglian Water
PO Box 495
Huntingdon
PE29 6YY

Telephone: 0345 6066 087

Email: developmentservices@anglianwater.co.uk

Water pressure and flow rate

The water pressure and consistency that we must meet for your site is laid out in the Water Industry Act(1991). This states that we must supply a flow rate of 9 litres per minute at a pressure of 10 metres of head to the external stop tap. If your water pressure requirements exceed this then you will need to provide and maintain any booster requirements to the development site.

Self-lay of Water Mains: A list of accredited Self-lay providers organisations can be found on the Lloyds Registrar [website](#) .

Water Industry Act – Key Used Water Sections:

Section 98:

This provides you with the right to requisition a new public sewer. The new public sewer can be constructed by Anglian Water on your behalf. Alternatively, you can construct the sewer yourself under section 30 of the Anglian Water Authority Act 1977.

Section 102:

This provides you with the right to have an existing sewerage asset vested by us. It is your responsibility to bring the infrastructure to an adoptable condition ahead of the asset being vested.

Section 104

This provides you with the right to have a design technically vetted and an agreement reached that will see us adopt your assets following their satisfactory construction and connection to the public sewer.

Section 106

This provides you with the right to have your constructed sewer connected to the public sewer.

Section 185

This provides you with the right to have a public sewerage asset diverted.

Details on how to make a formal application for a new sewer, new connection or diversion are available on our [website](#) or our Development Services team on 03456 066 087.

Sustainable drainage systems

Many existing urban drainage systems can cause problems of flooding, pollution or damage to the environment and are not resilient to climate change in the long term.

Our preferred method of surface water disposal is through the use of Sustainable Drainage Systems or SuDS.

SuDS are a range of techniques that aim to mimic the way surface water drains in natural systems within urban areas. For more information on SuDS, please visit our [website](#)

We recommend that you contact the Local Authority and Lead Local Flood Authority (LLFA) for your site to discuss your application.

Private sewer transfer

Sewers and lateral drains connected to the public sewer on the 1 July 2011 transferred into Water Company ownership on the 1 October 2011. This follows the implementation of the Floods and Water Management Act (FWMA). This included sewers and lateral drains that were subject to an existing Section 104 Adoption Agreement and those that were not. There were exemptions and the main non-transferable assets were as follows:

Surface water sewers and lateral drains that do not discharge to the public sewer, e.g. those that discharged to a watercourse.

Foul sewers and lateral drains that discharge to a privately owned sewage treatment/collection facility.

Pumping stations and rising mains will transfer between 1 October 2011 and 1 October 2016.

The implementation of Section 42 of the FWMA will ensure that future private sewers will not be created.

It is anticipated that all new sewer applications will need to have an approved Section 104 application ahead of a Section 106 connection.

Encroachment

Anglian Water operates a risk-based approach to development encroaching close to our used water infrastructure. We assess the issue of encroachment if you are planning to build within 400 metres of a water recycling centre or, within 15 metres to 100 metres of a pumping station. We have more information available on our website at <http://anglianwater.co.uk/developers/encroachment.aspx>

Locating our assets

Maps detailing the location of our water and used water infrastructure including both underground assets and above ground assets such as pumping stations and recycling centres are available from [digdat](#).

All requests from members of the public or non-statutory bodies for maps showing the location of our assets will be subject to an appropriate administrative charge.

We have more information on our [website](#)

Charging Arrangements

Our charging arrangements and summary for this year's water and used water connection and infrastructure charges can be found on our [website](#).

Section 6 Disclaimer

The information provided in this report is based on data currently held by Anglian Water Services Limited ('Anglian Water') or provided by a third party. Accordingly, the information in this report is provided with no guarantee of accuracy, timeliness, completeness and is without indemnity or warranty of any kind (express or implied).

This report should not be considered in isolation and does not nullify the need for the enquirer to make additional appropriate searches, inspections and enquiries. Anglian Water supports the plan led approach to sustainable development that is set out in the National Planning Policy Framework ('NPPF') and any infrastructure needs identified in this report must be considered in the context of current, adopted and/or emerging local plans. Where local plans are absent, silent or have expired these needs should be considered against the definition of sustainability holistically as set out in the NPPF.

Whilst the information in this report is based on the presumption that proposed development obtains planning permission, nothing in this report confirms that planning permission will be granted or that Anglian Water will be bound to carry out the works/proposals contained within this report.

No liability whatsoever, including liability for negligence is accepted by Anglian Water or its partners, employees or agents, for any error or omission, or for the results obtained from the use of this report and/or its content. Furthermore, in no event will any of those parties be liable to the applicant or any third party for any decision made or action taken as a result of reliance on this report.

This report is valid for the date printed and the enquirer is advised to resubmit their request for an up to date report should there be a delay in submitting any subsequent application for water supply/sewer connection(s).

Leslie, Joe

From: Ollie Ewington <Ollie.Ewington@bedford.gov.uk>
Sent: 10 April 2024 14:08
To: Giddings, Jason
Subject: Re: [External] Request for Information: Land at Kempston Hardwck

Jason
Reply below sent yesterday.

Ollie Ewington
Flood Investigation Officer
07774 151198

Sent from [Outlook for Android](#)

From: Floodrisk <Floodrisk@bedford.gov.uk>
Sent: Monday, April 8, 2024 12:32:00 pm
To: Leslie, Joe <Joe.Leslie@wsp.com>
Cc: Highways Helpdesk <Highways.Helpdesk@bedford.gov.uk>
Subject: RE: [External] Request for Information: Land at Kempston Hardwck

Bedford BC - **OFFICIAL-Unsecure**

Joe
Firstly sorry for the delay in replying to you

1. In your role of highway drainage authority, we would be grateful if you could provide us with:
 - Details of any known flooding events of the roads or highway drainage in the area, and details on the history of flooding within the area if available;
 - Any available asset records for the existing highway drainage in the area.I am afraid I cannot answer for highways. Try Highways.Helpdesk@bedford.gov.uk
2. In your role as lead local flood authority, we would be grateful for any information you can provide on:
 - Any known historical flooding at the site. Any known information on the mechanism of flooding (including any studies undertaken) for the area would also be appreciated;
The site is in Bedford IDB's drainage area so you will need to contact them directly.
 - Any watercourses/ditches that are within the area that may pose a flood risk to the sites? Could you please supply any known contact details of the relevant responsible authority (for example the Internal Drainage Board);
Bedford IDB details below:-

Bedford Group of Drainage Boards
Vale House
Broadmead Road
Stewartby
Bedfordshire
MK43 9ND

Contact Details

Tel. 01234 767 995

General Enquires: contact@idbs.org.uk

Planning Enquiries: planning@idbs.org.uk

Consent Enquiries: consent@idbs.org.uk

Rating Enquiries: rating@idbs.org.uk

- Any issues related to surface water flooding (including past flooding linked to drainage systems) within the area? We have also contacted the EA/Water Company/IDB for their records; Bedford IDB and Gov.uk Surface water flood risk map.
- Any information you possess on groundwater (e.g. groundwater level) and the potential for groundwater flooding within the area, if the site is located within a source protection zone and whether infiltration would be an appropriate means of disposing of surface water. Bedford IDB and the Environment Agency.
- Any water quality issues/requirements for the watercourses on site or downstream that we need to take into account?
Bedford IDB

All SuDS proposals should be in accordance with the adopted SuDS Supplementary Planning Document available in the following link:-

<http://edrms.bedford.gov.uk/OpenDocument.aspx?id=SE%2fYvEcHkpieCiSGAkjD9w%3d%3d&name=SuDS%20SPD.pdf>

Kind Regards

Ollie Ewington
Flood Investigation Officer
Room 401, Borough Hall,
Cauldwell Street, Bedford, MK42 9AP
Mobile 07774 151198

From: Leslie, Joe <Joe.Leslie@wsp.com>

Sent: Tuesday, March 19, 2024 2:03 PM

To: Floodrisk <Floodrisk@bedford.gov.uk>; Ollie Ewington <Ollie.Ewington@bedford.gov.uk>

Cc: Giddings, Jason <jason.giddings2@wsp.com>; Bushell, Cameron <Cameron.Bushell@wsp.com>

Subject: [External] Request for Information: Land at Kempston Hardwick

Attention: This email originated from outside of Bedford Borough Council. Please be extra vigilant when opening attachments or clicking links.

Good Afternoon,

Land at Kempston Hardwick

Grid Reference: 502795, 244605
Request for Information

I am writing on behalf of our client, with regard to the above location. Please find attached a location plan indicating the site location. We are investigating potential flood risk and drainage issues at the site in consultation with the Environment Agency and the IDB. I would be very grateful for your attention to the questions below, and in addition would welcome comments on any additional issues or concerns you may have involving this site.

1. In your role of highway drainage authority, we would be grateful if you could provide us with:
 - Details of any known flooding events of the roads or highway drainage in the area, and details on the history of flooding within the area if available;
 - Any available asset records for the existing highway drainage in the area.
2. In your role as lead local flood authority, we would be grateful for any information you can provide on:
 - Any known historical flooding at the site. Any known information on the mechanism of flooding (including any studies undertaken) for the area would also be appreciated;
 - Any watercourses/ditches that are within the area that may pose a flood risk to the sites? Could you please supply any known contact details of the relevant responsible authority (for example the Internal Drainage Board);
 - Any issues related to surface water flooding (including past flooding linked to drainage systems) within the area? We have also contacted the EA/Water Company/IDB for their records;
 - Any information you possess on groundwater (e.g. groundwater level) and the potential for groundwater flooding within the area, if the site is located within a source protection zone and whether infiltration would be an appropriate means of disposing of surface water.
 - Any water quality issues/requirements for the watercourses on site or downstream that we need to take into account?

An early response would be greatly appreciated.

Kind regards,



Joe Leslie

Principal Engineer

BEng (Hons) MSc GMICE

He/Him

Upcoming Annual Leave 8th – 19th April

T+ 44 (0) 1223 389657



WSP UK Ltd.

Charter House, 62-64 Hills Road,

Cambridge,

CB2 1LA

United Kingdom

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Flood risk assessments: Climate change allowances

Application of the allowances and local considerations

East Anglia; Essex, Norfolk, Suffolk, Cambridgeshire and Bedfordshire

1) The climate change allowances

The [National Planning Practice Guidance](#) refers planners, developers and advisors to the Environment Agency guidance on considering climate change in Flood Risk Assessments (FRAs). This guidance was updated in October 2021 and is available on [Gov.uk](#). The guidance can be used for planning applications, local plans, neighbourhood plans and other projects. It provides climate change allowances for peak river flow, peak rainfall, sea level rise, wind speed and wave height. The guidance provides a range of allowances to assess fluvial flooding, rather than a single national allowance. It advises on what allowances to use for assessment based on vulnerability classification, flood zone and development lifetime.

2) Assessment of climate change impacts on fluvial flooding

Where existing EA flood risk datasets and models do not provide the required climate change allowances, it is up to developers to undertake any work needed to appropriately assess the impacts of climate change on flood risk. They can do this by using the approaches in **Table A** below:

Table A below indicates the level of technical assessment of climate change impacts on fluvial flooding appropriate for new developments depending on their scale and location. This should be used as **a guide only**. Ultimately, the agreed approach should be based on expert local knowledge of flood risk conditions, local sensitivities and other influences. **For these reasons, we recommend that applicants and / or their consultants should contact the Environment Agency at the pre-planning application stage to confirm the assessment approach, on a case by case basis.** The email addresses for our Sustainable Places teams at our respective offices can be found in Section 8 below.

Table A defines three possible approaches to account for flood risk impacts due to climate change, in new development proposals:

- **Basic:** Developer can add an allowance to the 'design flood' (i.e. 1% annual probability) peak levels to account for potential climate change impacts. The allowance should be derived and agreed locally by Environment Agency teams.
- **Intermediate:** Developer can use existing modelled flood and flow data to construct a stage-discharge rating curve, which can be used to interpolate a flood level based on the required peak flow allowance being applied to the 'design flood' flow.
- **Detailed:** Perform detailed hydraulic modelling, either through re-running Environment Agency hydraulic models (if available) or construction of a new model by the developer.

Table A – Indicative guide to assessment approach

VULNERABILITY CLASSIFICATION	FLOOD ZONE	DEVELOPMENT TYPE		
		NON-MAJOR	SMALL-MAJOR	LARGE-MAJOR
ESSENTIAL INFRASTRUCTURE	Zone 2	Detailed		
	Zone 3a	Detailed		
	Zone 3b	Detailed		
HIGHLY VULNERABLE	Zone 2	Intermediate/ Basic	Intermediate/ Basic	Detailed
	Zone 3a	Not appropriate development		
	Zone 3b	Not appropriate development		
MORE VULNERABLE	Zone 2	Basic	Basic	Intermediate/ Basic
	Zone 3a	Intermediate/ Basic	Detailed	Detailed
	Zone 3b	Not appropriate development		
LESS VULNERABLE	Zone 2	Basic	Basic	Intermediate/ Basic
	Zone 3a	Basic	Basic	Detailed
	Zone 3b	Not appropriate development		
WATER COMPATIBLE	Zone 2	None		
	Zone 3a	Intermediate/ Basic		
	Zone 3b	Detailed		

Note: Where the table states 'not appropriate development', this is in line with national planning policy. If in exceptional circumstances such development types are proposed in these locations, we would expect a detailed modelling approach to be used.

NOTES:

- Non-Major: 1-9 dwellings/ less than 0.5 ha | Office / light industrial under 1ha | General industrial under 1 ha | Retail under 1 ha | Gypsy/traveller site between 0 and 9 pitches
- Small-Major: 10 to 30 dwellings | Office / light industrial 1ha to 5ha | General industrial 1ha to 5ha | Retail over 1ha to 5ha | Gypsy/traveller site over 10 to 30 pitches
- Large-Major: 30+ dwellings | Office / light industrial 5ha+ | General industrial 5ha+ | Retail 5ha+ | Gypsy/traveler site over 30+ pitches | any other development that creates a non-residential building or development over 1000 sq m.

The assessment approach should be agreed with the Environment Agency as part of pre-planning application discussions to avoid abortive work.

3) Specific local considerations

Where the Environment Agency and the applicant and / or their consultant has agreed that a 'basic' level of assessment is appropriate, the figures in Table B below can be used as a precautionary allowance for potential climate change impacts on peak 'design' (i.e. 1% annual probability) fluvial flood level rather than undertaking detailed modelling.

Table B – Local precautionary allowances for potential climate change impacts

Essex, Norfolk and Suffolk

Hydraulic Model (Watercourse)	Precautionary allowance (basic approach)
Blackwater & Brain - Blackwater between TL7520925623 and TL7820324314 Brain between TL7373323312 and TL7683821321	500mm
Other main rivers, tributaries and ordinary watercourses	<p>For other main rivers, tributaries and ordinary watercourses that are not stated above, basic allowances have not been calculated. In this instance you can either:</p> <ul style="list-style-type: none"> • If flow data is available you can request this data from us and can conduct an intermediate assessment yourself • Or alternatively, you can choose to undertake a Detailed Assessment and "perform detailed hydraulic modelling, through either re-running our hydraulic models (if available) or constructing a new model

Cambridgeshire and Bedfordshire

Watercourse / Model	Precautionary allowance (basic approach)
Alconbury Brook	600mm
River Kym	
Lower Ouse (Model Extent)	700mm
Mid Ouse (Cold Brayfield to Bromham – between SP9156852223 and TL0132950919)	700mm
Mid Ouse (East of Bedford to Roxton – between TL0791848903 and TL1618854543)	700mm
River Hiz and River Purwell	400mm
River Ivel	500mm
Pix Brook	450mm
Potton Brook	500mm
River Cam and tributaries (excluding the Cam Lodes and the Slade System)	450mm
Great Barford (ordinary watercourses)	500mm
Bromham (ordinary watercourse)	550mm

NOTES:

Urban areas excluded from the 'basic' approach: St Ives, Holywell, Godmanchester, Swavesey, Over, Bedford, Newport Pagnell, Buckingham and Leighton Buzzard. More detailed assessment of climate change allowances will need to be undertaken in these locations.

Use of these allowances will only be accepted after discussion with the Environment Agency.

4) Fluvial flood risk mitigation

For planning consultations where we are a statutory consultee and our [Flood risk standing advice](#) **does not** apply we use the following benchmarks to inform flood risk mitigation for different [vulnerability classifications](#). **These are a guide only. We strongly recommend you contact us at the pre-planning application stage to confirm this on a case by case basis.** For planning consultations where we are not a statutory consultee or our [Flood risk Standing advice](#) applies, we recommend that local planning authorities and developers use these benchmarks but we do not expect to be consulted.

- For development classed as **'essential infrastructure'** our benchmark for flood risk mitigation is for it to be designed to the **'higher central'** climate change allowance for the epoch that most closely represents the lifetime of the development, including decommissioning. Please note that nationally significant infrastructure projects (NSIPs) may also need to assess a **credible maximum climate change scenario** by applying the **'upper end'** allowance for peak river flow as a sensitivity test. This will help to determine how sensitive the development is to changes in the climate and to ensure that it can be adapted to large-scale climate change over its lifetime.
- For **highly vulnerable, more vulnerable, less vulnerable and water compatible** developments in flood zones 2 and 3a, the **'central'** climate change allowance is our minimum benchmark for flood risk mitigation. For large urban settlement extensions or developments that form new communities, the credible maximum climate change scenario must be assessed; in these circumstances, you should use the **'upper end'** allowance.
- For **water compatible** development in flood zone 3b, the **'central'** climate change allowance for the epoch that most closely represents the lifetime of the development is our minimum benchmark for flood risk mitigation.

For peak river flow allowances and a visual representation of the above, please see Tables 1 and 2 below.

Management Catchment	Allowance category	Total potential change anticipated for '2020s' (2015 to 39)	Total potential change anticipated for '2050s' (2040 to 2069)	Total potential change anticipated for '2080s' (2070 to 2125)
Upper and Bedford Ouse	Upper end	24%	30%	58%
	Higher central	10%	11%	30%
	Central	5%	4%	19%
Cam and Ely Ouse	Upper End	21%	22%	45%
	Higher Central	7%	5%	19%
	Central	2%	-2%	9%
Old Bedford and Middle Level	Upper End	23%	22%	39%
	Higher central	9%	4%	15%
	Central	3%	-3%	6%
North West Norfolk	Upper End	30%	34%	57%
	Higher central	18%	18%	33%
	Central	13%	11%	23%
North Norfolk Rivers	Upper End	26%	27%	48%
	Higher central	13%	11%	24%
	Central	7%	4%	14%
Broadland Rivers	Upper End	27%	27%	44%
	Higher central	14%	10%	20%
	Central	8%	3%	11%
East Suffolk	Upper End	25%	29%	54%
	Higher central	13%	13%	29%
	Central	8%	7%	19%
Combined Essex	Upper End	27%	37%	72%
	Higher central	13%	16%	38%
	Central	7%	8%	25%

South Essex	Upper End	22%	27%	48%
	Higher central	11%	11%	26%
	Central	6%	5%	17%

If you are not sure which management catchment your site falls within, please use the guidance and link to the peak river flow map, which can be found at: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances#peak-river-flow-allowances>

Table 2: Using peak river flow allowances for flood risk assessments

Flood Zone	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
2	higher central ¹	central ²	central ²	central	central
3a	higher central ¹	X	central ²	central	central
3b	higher central ¹	X	X	X	central

X – Development should not be permitted

If (exceptionally) development is considered appropriate when not in accordance with flood zone vulnerability categories, then it would be appropriate to use the higher central allowance.

¹ For NSIPs, the ‘upper end’ allowance should be used to assess a credible maximum climate change scenario.

² For large urban settlement extensions or developments that form new communities, the credible maximum climate change scenario must be assessed. In these circumstances, you should use the ‘upper end’ allowance.

There may be circumstances where local evidence supports the use of other data or allowances. Where you think this is the case we may want to check this data and how you propose to use it.

Assessing off-site impacts and calculating floodplain compensation

The appropriate allowance to assess off-site impacts and calculation floodplain compensation requirements depends on the land uses in affected areas.

The ‘**central**’ allowance should be used in most cases. However, the ‘**higher central**’ allowance should be used when the affected area contains essential infrastructure.

5) Development in tidal flood risk areas

For flood risk assessments and strategic flood risk assessments, assess both the **higher central** and **upper end** allowances for all development vulnerability classes (see table 3 below).

For NSIPs and large urban settlement extensions or developments that form new communities, the **credible maximum climate change scenario** should be assessed (sea level rise and sensitivity test allowances for offshore wind speed and extreme wave height and storm surge uplift). To assess the flood risk from a high impact climate change scenario, you should use the H⁺⁺ allowance of 1.9m for the total sea level rise to 2100.

Table 3: sea level allowances for each epoch in mm for each year (based on a 1981 to 2000 baseline) – the total sea level risk for each epoch is in brackets

Area of England	Allowance	2000 to 2035 (mm)	2036 to 2065 (mm)	2066 to 2095 (mm)	2096 to 2125 (mm)	Cumulative rise 2000 to 2125 (metres)
Anglian	Higher central	5.8 (203)	8.7 (261)	11.6 (348)	13 (390)	1.20
Anglian	Upper end	7 (245)	11.3 (339)	15.8 (474)	18.1 (543)	1.60
South east	Higher central	5.7 (200)	8.7 (261)	11.6 (348)	13.1 (393)	1.20
South east	Upper end	6.9 (242)	11.3 (339)	15.8 (474)	18.2 (546)	1.60

6) Tidal flood risk mitigation

For planning consultations where we are a statutory consultee and our flood risk standing advice does not apply, we use the following benchmarks to inform flood risk mitigation for different [vulnerability classifications](#). **These are a guide only. We strongly recommend you contact us at the pre-planning application stage to confirm this on a case by case basis. Please note you may be charged for this advice.** For planning consultations where we are not a statutory consultee or our flood risk standing advice applies, we recommend that local planning authorities and developers use these benchmarks but we do not expect to be consulted.

- For development classed as essential Infrastructure, highly vulnerable development and more vulnerable development, our minimum benchmark for flood risk mitigation is the **‘upper end’** climate change allowance for the development lifetime (including decommissioning where relevant).
- For water compatible or less vulnerable development (e.g. commercial), our minimum benchmark for flood risk mitigation is the **‘higher central’** climate change allowance for the development lifetime. In sensitive locations it may be necessary to use the **‘upper end’** allowance to inform built in resilience.

If you are using our 2018 Coastal Flood Modelling Data outputs:

The **upper end** allowance become progressively higher each year than the climate change flood level outputs used in our current 2018 coastal flood model. So as an approximation we recommend that the following uplift values are added on to the on-site climate change flood levels provided in the Product 4:

- For development lifetimes extending to 2122, add 0.34m
- For development lifetimes extending to 2123, add 0.36m
- For development lifetimes extending to 2124, add 0.38m
- For development lifetimes extending to 2125, add 0.40m

If the proposed development is greater than 30 houses and the flood zone is in an open-coast location, we recommend that a more accurate impact of the increased upper end flood levels on the overtopping on-site flood levels is modelled by rerunning our coastal overtopping model with the new flood levels; you can obtain the model from us with a Product 6 and 7 request. If the site is located within a small or constrained tidal or coastal floodplain then regardless of the size of the development, you may also need to undertake remodelling of the flood levels to obtain an accurate assessment of the impacts of climate change; please contact us for advice (contact details in Section 8 below).

If you are using our Broads 2008 Flood Modelling Data outputs:

For the **upper end** allowance, please add the following uplift values onto the climate change flood levels provided in the Product 4:

- For development lifetimes extending to 2122, add 0.34m
- For development lifetimes extending to 2123, add 0.36m
- For development lifetimes extending to 2124, add 0.38m
- For development lifetimes extending to 2125, add 0.40m

If you are using our 2008 Thames Flood Modelling Data outputs:

Please add the appropriate climate change allowances for the South East River Basin District onto the present day flood levels obtained in the Product 4, starting from a base year of 2005. The allowances should be applied to the year appropriate to the respective development lifetime for residential or commercial developments.

**** note**:** *We anticipate that there will be updated flood modelling outputs available for the Thames Estuary in mid-2022. Developers preparing Flood Risk Assessments for developments in this area should check for availability of new data with the East Anglia (East) PSO team (contact details in Section 8 below).*

There may be circumstances where local evidence supports the use of other data or allowances. Where you think this is the case, we may want to check this data and how you propose to use it.

7) Assessment of climate change impacts for Surface Water Management

Please see the latest advice on the use of Peak Rainfall Intensity climate change allowances, which can be found here: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

The Environment Agency is not a statutory consultee to the land use planning system for the consideration of surface water flood risk and management. We therefore recommend that you contact the relevant Lead Local Flood Authority (contact details listed below) to discuss Flood Risk Assessment requirements to support your development's surface water management proposals.

Cambridgeshire County Council - fr.planning@cambridgeshire.gov.uk
Central Bedfordshire Council - floodrisk@centralbedfordshire.gov.uk
Bedford Borough Council - floodrisk@bedford.gov.uk
Milton Keynes Council - llfa@milton-keynes.gov.uk
Buckinghamshire County Council - floodmanagement@bucksc.gov.uk
Herts County Council - floodandwatermanagement@hertsc.gov.uk
Northamptonshire County Council - floodandwater@northamptonshire.gov.uk
Norfolk County Council - llfa@norfolk.gov.uk
Suffolk County Council - floods@suffolk.gov.uk
Essex County Council - suds@essex.gov.uk
Thurrock Council - TransportDevelopment@thurrock.gov.uk
Southend-on-Sea Council - llfa@southend.gov.uk

8) Our Service

Non-chargeable service

We will give a free opinion on:

- What climate change allowance to apply to a particular development type
- Which technical approach is suitable in the FRA

Chargeable service:

- Review of climate change impacts using intermediate and detailed technical approaches (i.e. modelling review)
- Assessment and review of proposals for managed adaptation.

Contact Details

For East Anglia (Great Ouse Catchment): planning.brampton@environment-agency.gov.uk

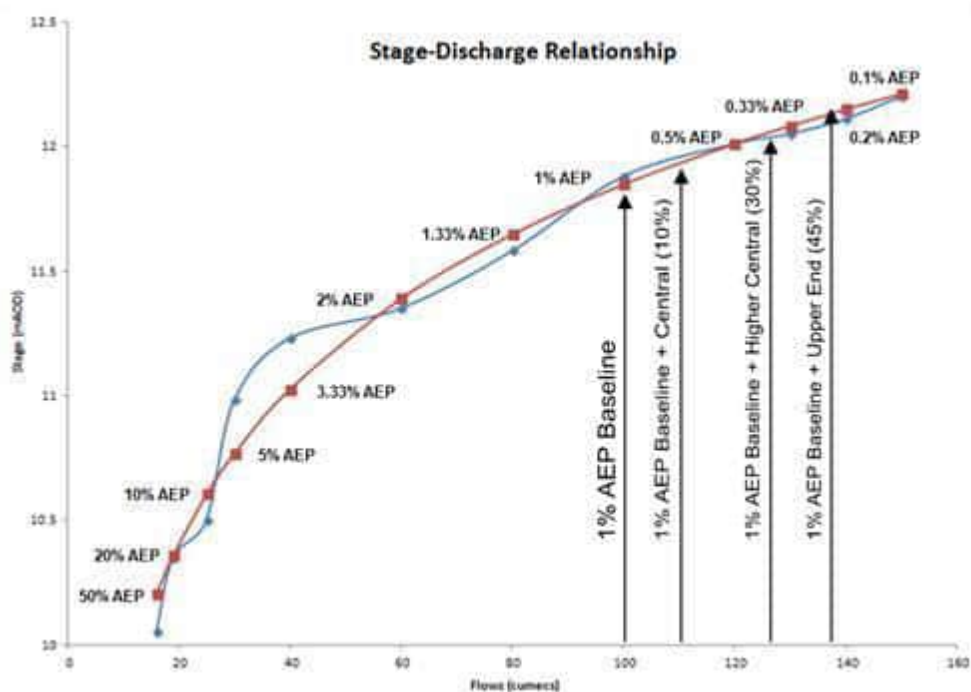
For East Anglia (East): planning.ipswich@environment-agency.gov.uk

Appendix 1 – Further information on the Intermediate approach.

1) The methodology the chart is based on does not produce an accurate stage-discharge rating and is a simplified methodology for producing flood levels that can be applied in low risk small-scale development situations.

2) The method should not be applied where there is existing detailed modelled climate change outputs that use the new allowances. In such circumstances, the 'with climate change' modelled scenarios should be applied.

An example stage-discharge relationship is shown below.



Leslie, Joe

From: Enquiries_EastAnglia <Enquiries_EastAnglia@environment-agency.gov.uk>
Sent: 11 April 2024 13:09
To: Giddings, Jason
Cc: Leslie, Joe
Subject: RE: EAN/2024/355203 Request for Information: Land at Kempston Hardwick

Dear Jason,

Thank you for your enquiry of 10 April 2024.

We are liaising with our technical teams to gather the data you have requested, and we will reply to you as soon as possible. This will be no later than 9 May 2024, which is in accordance with the Freedom of Information Act (2000) and the Environmental Information Regulations (2004).

If we can be of further help, please do contact us quoting the reference number.

Kind regards

Stephanie Fullwood
Customers & Engagement Officer, Customers & Engagement Team, East Anglia Area

enquiries_eastanglia@environment-agency.gov.uk

External: 0203 0255472

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From: Giddings, Jason <jason.giddings2@wsp.com>
Sent: Wednesday, April 10, 2024 2:11 PM
To: Enquiries_EastAnglia <Enquiries_EastAnglia@environment-agency.gov.uk>
Cc: Leslie, Joe <Joe.Leslie@wsp.com>
Subject: EAN/2024/355203 Request for Information: Land at Kempston Hardwick

Good afternoon,

Land at Kempston Hardwick

Grid Reference: 502795, 244605
Request for Information

We are writing regarding the above location. Please find attached a site location plan. We are investigating potential flood risk and drainage issues at the site in consultation with the LLFA and Bedford Group IDB.

We currently have a copy of the Flood risk assessment data previously known as Product 4 from the Flood Risk for Planning website. We have listed below a number of other queries for this site and would be grateful for your attention to them.

- Classification and location of watercourses in the vicinity of the site;
- Details of existing flood defences relevant to the site including estimated standard of protection;
- Details of any flood defence/alleviation improvement schemes and what level of protection they will offer;
- Site specific breached flood level data including flood hazard classifications;
- Time of breached flood waters to enter the site;
- Historic surface water flooding information
- Details of existing flood warning systems;
- Details of any groundwater flooding issues and ground water levels;
- Details of any historic flooding on site;
- Details of any EA apparatus within the site boundary;
- Details of required level of treatment of surface water run-off if any prior to discharge
- Details of required level of climate change to be incorporated into surface water drainage design
- Any further information you feel is relevant to assist with the preparation of a Flood Risk Assessment.

If you require any further information regarding the site to assist with our queries, please do not hesitate to contact me. I would also be grateful if you could inform me on any associating cost for any data at your earliest possible convenience.

Kind regards,



Jason Giddings

Associate Infrastructure
BSc (Hons)

T+44 01223 342108

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United Kingdom

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Leslie, Joe

From: Giddings, Jason
Sent: 08 May 2024 10:07
To: Enquiries_EastAnglia; Chira, Razvan; PSOEastAnglia
Cc: Leslie, Joe
Subject: RE: EAN/2024/355215 Response - 518104,272973 Weybridge Farm
Attachments: RE: 518104,272973 Weybridge Farm - Our ref: EAn/2023/334987-1; RE: EAN/2024/355215 518104,272973 Weybridge Farm

Thanks Naomh,

The information received yesterday appears to be the same model we were sent last year. Model name: EAn_Lower Ouse_Alconbury Brook_2015

Our request was specifically in regard to the new flood modelling which we were advised would be ready January 2024, and was pushed back to May 2024.

Please could you check with Stephanie Fullwood, Samantha Clemens, and Razvan Chira (email correspondence attached) and confirm when the new model will be available?

Kind regards,



Jason Giddings
Associate Infrastructure
BSc (Hons)

T+44 01223 342108

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From: Enquiries_EastAnglia <Enquiries_EastAnglia@environment-agency.gov.uk>
Sent: Tuesday, May 7, 2024 3:44 PM
To: Giddings, Jason <jason.giddings2@wsp.com>
Subject: EAN/2024/355215 Response - 518104,272973 Weybridge Farm

Dear Jason

Thank you for your online request of 10 April 2024 for Product 4 data.

Please note that new modelling for this area is ongoing no definite publication date. We apologise for any confusion caused. The information that we provided December is the best available information. I have attached this again for your reference.

Name	Product 4
Description	Detailed Flood Risk Assessment Map for 518104,272973 Weybridge Farm
Licence	Open Government Licence

Information Warnings	<i>The maps provided are to be used in conjunction with the Datasheet. Please read the Datasheet and take note of information contained within the 'Important Information' section.</i>
Information Warning - OS background mapping	<i>The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply to this background mapping. You are granted a non-exclusive, royalty free, revocable licence solely to view the Licensed Data for non-commercial purposes for the period during which the Environment Agency makes it available. You are not permitted to copy, sub-license, distribute, sell or otherwise make available the Licensed Data to third parties in any form. Third party rights to enforce the terms of this licence shall be reserved to OS.</i>
Attribution	Contains Environment Agency information © Environment Agency and/or database rights. Contains Ordnance Survey data © Crown copyright 2024 Ordnance Survey OS AC0000807064.

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

Please also find attached the FRA advisory note.

If you have any comments regarding the attached information please contact our Partnership & Strategic Overview team directly by email at ps0.eastanglia@environment-agency.gov.uk

Please read the Open Government Licence: www.nationalarchives.gov.uk/doc/open-government-licence/version/3/ which explains the permitted use of the defence information we have provided.

Data Available Online

Many of our flood datasets are available online:

- Flood Map For Planning ([Flood Zone 2](#), [Flood Zone 3](#), [Flood Storage Areas](#), [Flood Defences](#), [Areas Benefiting from Defences](#))
- [Risk of Flooding from Rivers and Sea](#)
- [Historic Flood Map](#)
- [Current Flood Warnings](#)

What's In Your BackYard (WIYBY) is no longer available

Most of the data is still available via other sharing services such as [DATA.GOV.UK](#), [MAGIC map](#) and new [GOV.UK digital services](#). Where the datasets are no longer available as maps, you will be able to download and use within specialist applications.

To find out all the services the Environment Agency have available, please click [here](#).

Additional information

Please be aware that we now charge for planning advice provided to developers, agents and landowners. If you would like advice to inform a future planning application for this site then please complete our <https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion> and email it to our Sustainable Places team at: planning.eastanglia@environment-agency.gov.uk. They will initially provide you with a free response identifying the following:

- the environmental constraints affecting the proposal;
- the environmental issues raised by the proposal;

- the information we need for the subsequent planning application to address the issues identified and demonstrate an acceptable development;
- any required environmental permits.

If you require any further information from them (for example, a meeting or the detailed review of a technical document) they will need to set up a charging agreement. Further information can be found on our [website](#).

Climate Change Allowances

For information on the use climate change allowances in Flood Risk Assessments, please see the attached document - East_Anglian_External Climate Change Allowances Guidance_March2022.pdf.

If you want to discuss this please call our Sustainable Places team on 020 8474 5242.

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

Kind regards,

Naomh (pronounced Neeve) Campbell

Customer Service Officer East Anglia

Environment Agency | Icen House, Cobham Road, Ipswich IP3 9JD

Environment Agency | Bromholme Lane, Brampton, Huntingdon, Cambridgeshire, PE28 4NE

Team Number: 0203 0255472



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Leslie, Joe

From: Enquiries_EastAnglia <Enquiries_EastAnglia@environment-agency.gov.uk>
Sent: 09 May 2024 14:28
To: Giddings, Jason
Cc: PSOEastAnglia; Leslie, Joe
Subject: RE: RE: EAN/2024/355215 Response - 518104,272973 Weybridge Farm

Dear Jason

The Data Team has advised that new modelling for this area is ongoing with no definite publication date. My apologies for the conflicting information that we provided previously.

The information that was provided to you in December is the best available information.

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

Unfortunately the data that you have requested in a draft format and is therefore not available for release. We hope that this will be available in the coming weeks. See Appendix EIR Regulation 12 (4)(d). below.

As a public body we are required under the Freedom of Information Act/Environmental Information Regulations to give reasons for this refusal. We also need to show that we have considered the Public Interest balance between refusal and disclosure. You can find the details in the appendix below.

If you are not satisfied you can contact us within 2 calendar months to ask for our decision to be reviewed. We shall review our response to your request and give you our decision in writing within 40 working days.

If you are still not satisfied following this, you can raise a concern with the Information Commissioner, who is the statutory regulator for Freedom of Information and the Environmental Information Regulations. The contact details are:

Information Commissioner's Office
Wycliffe House
Water Lane
Wilmslow
Cheshire
SK9 5AF
Tel: 0303 123 1113
Website: <http://ico.org.uk>
www.ico.org.uk/foicomplaints

Appendix

Relevant exceptions

The exceptions that apply to the withheld information are:

Information in draft format - EIR Regulation 12 (4)(d),
EIR Regulation 12(4)(d) applies because the request relates to material which is still in the course of completion, i.e. unfinished documents. To release this information at this stage could be misleading or cause harm until it is finalised.

The Public Interest Test

We have weighed the public interest factors in favour of maintaining the exceptions and find that they outweigh the public interest factors in disclosing the information. In carrying out the public interest test we have considered:

Factors in favour of releasing the information:

We believe that there is a general presumption of openness and a need to promote accountability and transparency. We only withhold information where we are sure that release would cause some harm, and we take into account whether information is already available which meets the public interest in disclosure, the timing of the request, and whether release would contribute to the running of the public sector, or to sustainable development or public health and safety.

Factors in favour of withholding the information:

EIR Regulation 12(4)(d) applies to documents which are still in the course of completion, or unfinished documents or to incomplete data. The material may change and we maintain that there is a public interest in ensuring that data we release is factually correct and not likely to be mis-leading to the public.

We also believe the public interest in disclosure at this time is lessened because it will be finalised and can be released within a short timescale.

As indicated, upon assessing the factors in the public interest test, we have assessed that in relation to the discharge data, we find that the factors in favour of withholding information outweigh the public interest factors in disclosing the information.

Kind regards,

Naomh Campbell

Customer Service Officer East Anglia

Environment Agency | Icen House, Cobham Road, Ipswich IP3 9JD

Environment Agency | Bromholme Lane, Bampton, Huntingdon, Cambridgeshire, PE28 4NE

Team Number: 0203 0255472



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Leslie, Joe

From: Trevor Skelding <Trevor.Skelding@idbs.org.uk>
Sent: 16 April 2024 13:58
To: Leslie, Joe
Subject: RE: Land at Kempston Hardwick
Attachments: Stewartby Outfall.pdf

Hi Joe,

Flood extents can be obtained on the EA website. There are no flood defences within your site. The Kempston Hardwick lake to the north of Manor Road is the only storage area within your site which is used for run-off from the BCA site.

No historic flood outline exists for your site.

Surface water flooding extents can be obtained from the EA website.

The flood levels / flood extents from various flood events will be available from the flood model to be provided by Stantec.

The attached detail is for the outfall to Stewartby Lake.

Regards

Trevor Skelding MSc IEng MICE
Principal Engineer

Bedford Group of Drainage Boards | Vale House | Broadmead Road | Stewartby | Bedfordshire | MK43 9ND



Tel: 01234 767995 | www.idbs.org.uk

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From: Leslie, Joe <Joe.Leslie@wsp.com>
Sent: Friday, April 5, 2024 11:20 AM
To: Trevor Skelding <Trevor.Skelding@idbs.org.uk>
Cc: Giddings, Jason <jason.giddings2@wsp.com>; O'Connor, James <James.O'Connor@wsp.com>
Subject: RE: Land at Kempston Hardwick

Hi Trevor,

Many thanks for meeting with us on Wednesday morning, was very useful and we are looking forward to further discussions this afternoon.

On the back of this and flood model we have requested from Stantec, are you please able to send us across any of the information below you hold for the following for our area of interest please?

- Flood zone extents, flood defences and storage areas
- Areas benefitting from flood defence
- Historic flood extent outlines
- Surface water flooding extents
- Flood levels for flooding events, (1 in 10, 1 in 30, 1 in 100, 1 in 1000) inc. Climate change
- Outfall details from the Stewartby Lake

Much appreciated.

Kind regards,



Joe Leslie

Principal Engineer

BEng (Hons) MSc GMICE

He/Him

Upcoming Annual Leave 8th – 19th April

T+ 44 (0) 1223 389657



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Cambridge,

CB2 1LA

United Kingdom

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From: Trevor Skelding <Trevor.Skelding@idbs.org.uk>
Sent: Thursday, March 28, 2024 9:01 AM
To: Leslie, Joe <Joe.Leslie@wsp.com>

Cc: Giddings, Jason <jason.giddings2@wsp.com>
Subject: RE: Land at Kempston Hardwick

Hi Joe,

I would only be available between 2 and 3 pm. Morning would also be possible.

Regards

Trevor Skelding MSc IEng MICE
Principal Engineer


Bedford Group of Drainage Boards | Vale House | Broadmead Road | Stewartby | Bedfordshire | MK43 9ND



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From: Leslie, Joe <Joe.Leslie@wsp.com>
Sent: Thursday, March 28, 2024 8:52 AM
To: Trevor Skelding <Trevor.Skelding@idbs.org.uk>
Cc: Giddings, Jason <jason.giddings2@wsp.com>
Subject: RE: Land at Kempston Hardwick

Thanks for the commentary Trevor, much appreciated.

Would you also have any availability on the Friday (5th) afternoon between 2 and 5pm for a further virtual meeting to talk through our proposals for the site watercourses? It will also be an opportunity for our client to be in attendance - will be able to confirm an exact time shortly.

Kind regards,



Joe Leslie

Principal Engineer

BEng (Hons) MSc GMICE

He/Him

Upcoming Annual Leave 8th – 19th April

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From: Trevor Skelding <Trevor.Skelding@idbs.org.uk>

Sent: Tuesday, March 26, 2024 12:23 PM

To: Leslie, Joe <Joe.Leslie@wsp.com>

Subject: RE: Land at Kempston Hardwick

Hi Joe,

See comments in red.

Regards

Trevor Skelding MSc IEng MICE
Principal Engineer


Bedford Group of Drainage Boards | Vale House | Broadmead Road | Stewartby | Bedfordshire | MK43 9ND



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From: Leslie, Joe <Joe.Leslie@wsp.com>
Sent: Monday, March 25, 2024 10:46 AM
To: Trevor Skelding <Trevor.Skelding@idbs.org.uk>
Cc: Giddings, Jason <jason.giddings2@wsp.com>; O'Connor, James <James.O'Connor@wsp.com>
Subject: Land at Kempston Hardwick

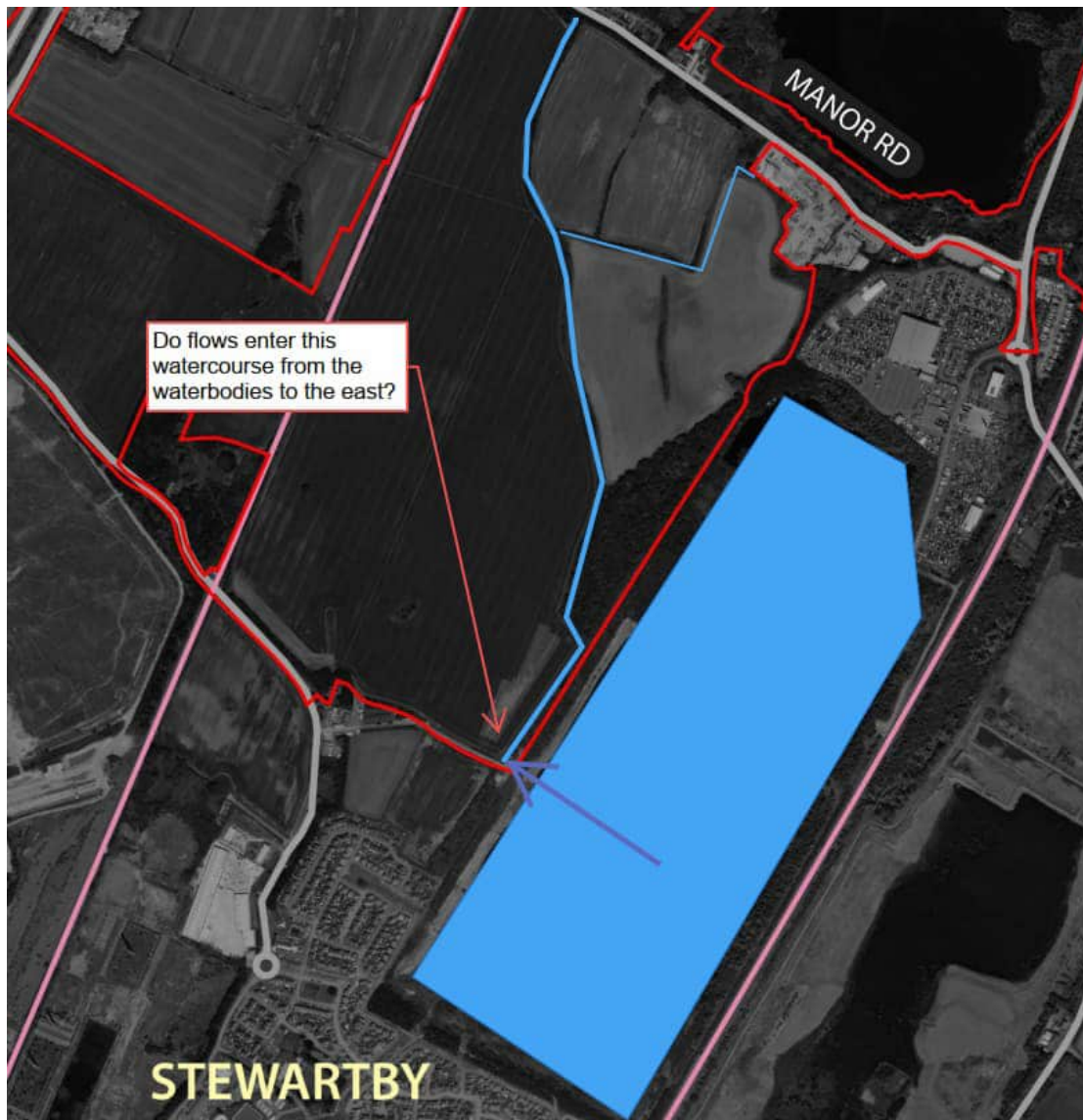
Good Morning Trevor,

Further to your meeting with my colleague James a couple of weeks ago – would it be possible to have another meeting to discuss the site above further?

We are planning to undertake a site visit on Wednesday (03/04) next week so could come to your offices on that day if that works for you.

In the meantime, if you are able to shed any light on the below queries it would be much appreciated!

- Do any flows enter this watercourse from the adjacent waterbody to the east? **The housing development adjacent to it currently discharges into the old workings. At some time it is expected that this will overflow into the watercourse via a weir which has yet to be built.**



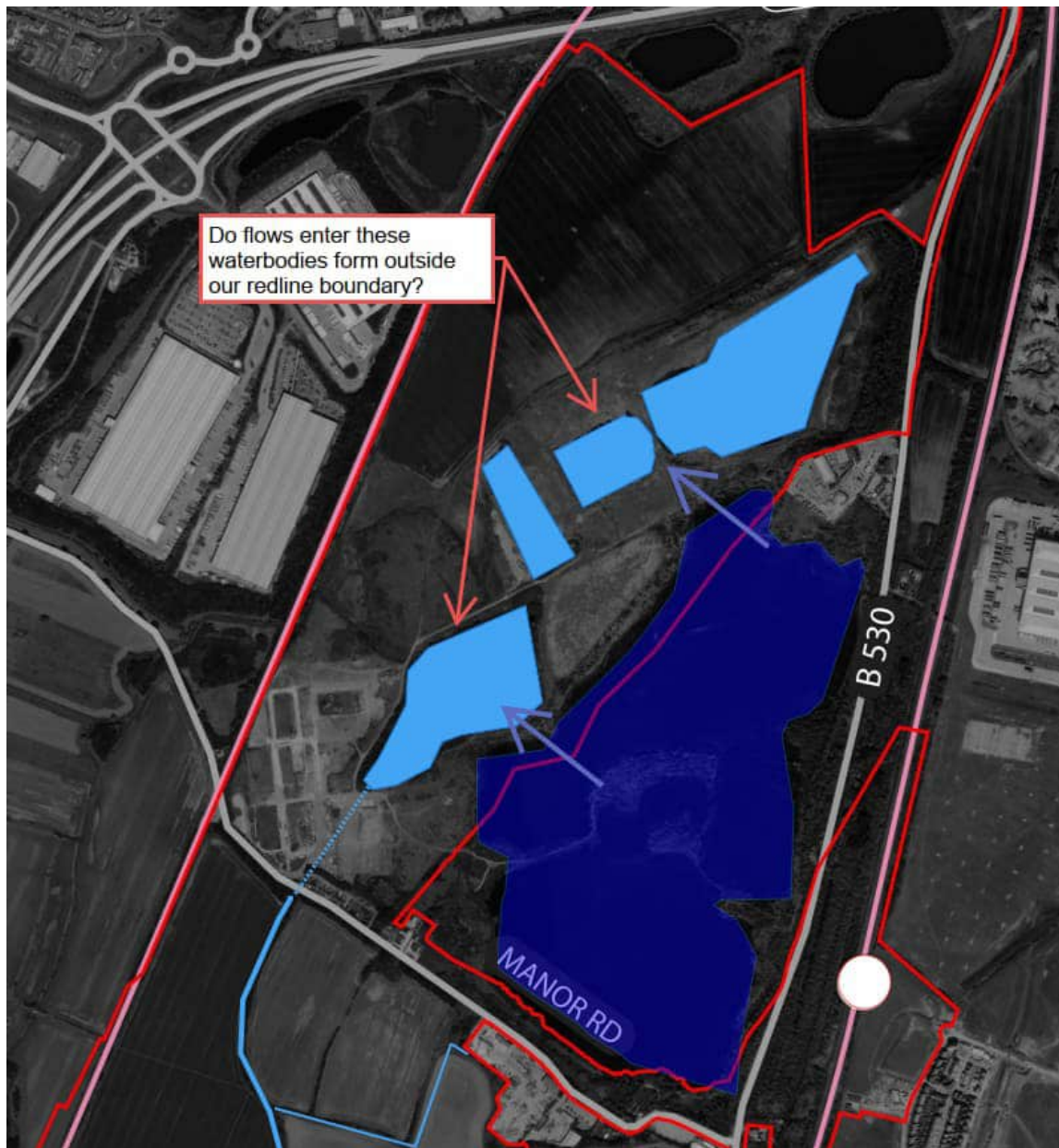
- Connectivity of the watercourse here south of Manor Road to the waterbodies north of it. The route of this watercourse north of Manor Road is unknown. It is believed to enter the pond you have indicated.



- Do flows enter this watercourse from the east? The OS map indicates that this is the case.



- Offsite flows entering the waterbodies here and connectivity to the Elstow Brook. Apart from the connection to the lower pond, we have no records of other connections.



Many thanks

Kind regards,



Joe Leslie

Principal Engineer

BEng (Hons) MSc GMICE

He/Him

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CB2 1LA

United Kingdom

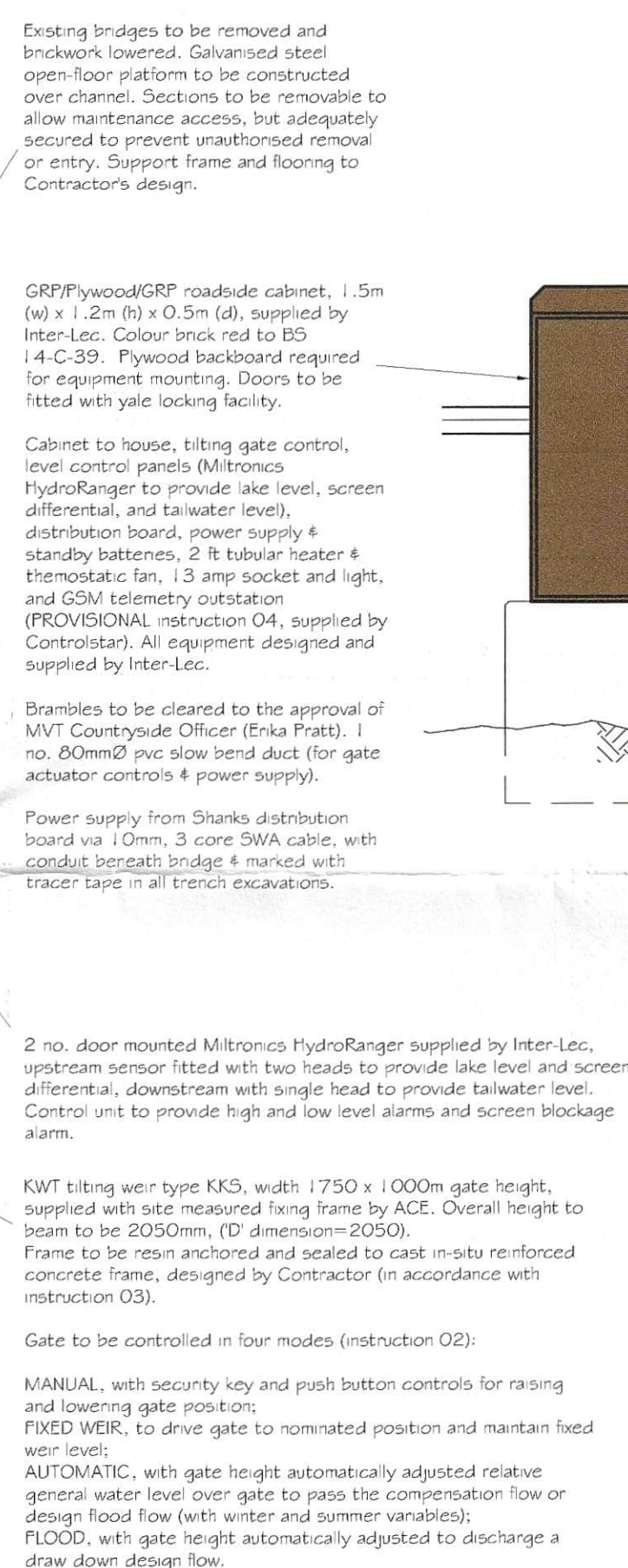
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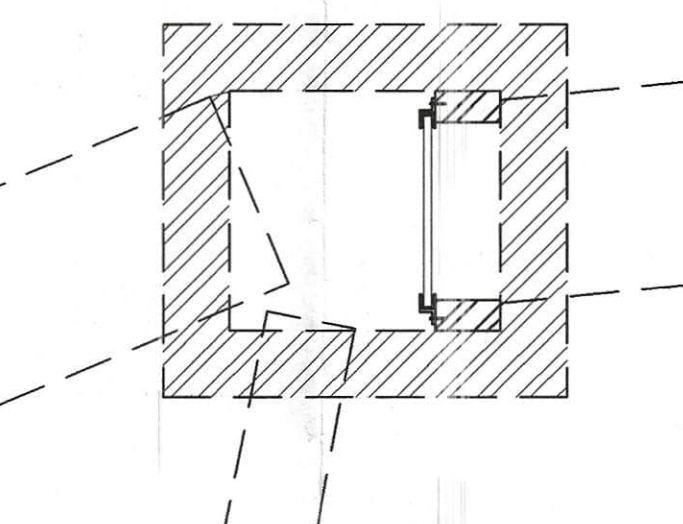
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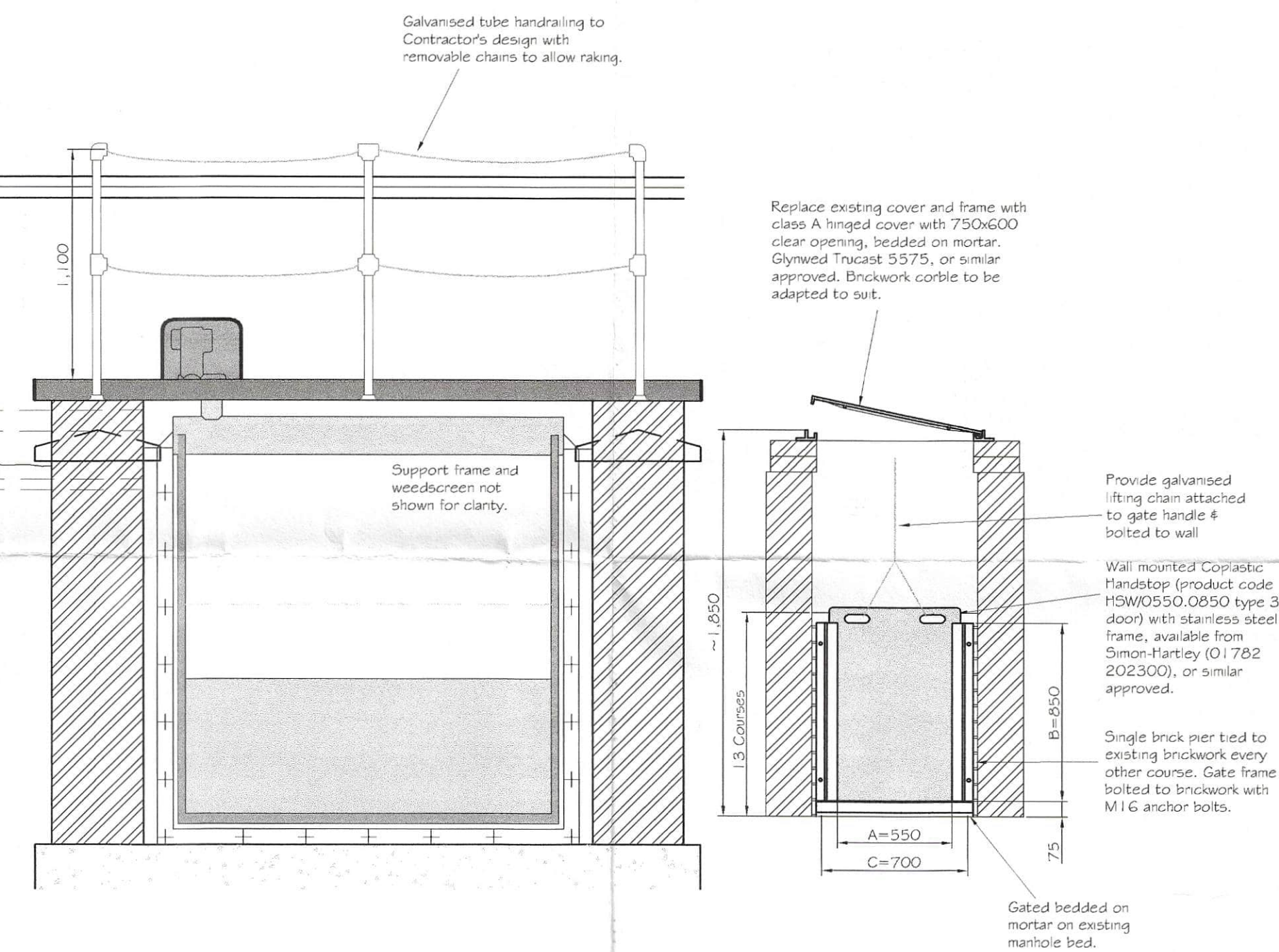
-LAE mHhHzdJzBITWfa4Hgs7pbKI



L_A



Handstop Gate Plan (Below Cover)
(Scale 1:25)



Handstop gate Section
(Scale 1:25)



Location Plan
(Scale 1:10,000)

AS CONSTRUCTED

D	Sensor moved, Kiosk colour & position, wooden fencing, handstop gate revised	TU	28/02/02	
C	Kiosk on plan corrected, plinth height set, kiosk colour changed	SCD	05/07/01	
B	Instruction 01 withdrawn	SCD	04/07/01	
A	Drawing approved, instructions 01-04 added, cabinet location amended	SCD	07/06/01	
Rev	Description	Dr	Gh	Date


Client	Bedfordshire & River Ivel IDB			
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Project	Stewartby Lake Outfall
---------	------------------------

STEWART, J. L. 1990. *Journal of Great Lakes Research* 16:1-12.

Title	Outfall Structure
-------	-------------------

	General Arrangement
--	---------------------

	Sheet Size	A1	Scale	As shown
	Drawn	reed	Project Name	

Lellford House, Fulbourn, Cambridge. CB1 5HB Telephone: 01223 882000 Fax: 01223 881888 e-mail: cambridge@zooreshed.co.uk	Drawn: SCU Checked:	Drawing Number: 96123/001	Rev: D
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CAD FILENAME: 96123.001 CREATION DATE: 22/10/99 LAST PLOT DATE: 22/10/99	Approved
--	----------

Woods, Alex

From: Maks Zdunek <Mzdunek@anglianwater.co.uk>
Sent: 13 April 2023 10:34
To: Woods, Alex
Subject: RE: Data enquiry for MK43 9NS

You don't often get email from mzdunek@anglianwater.co.uk. [Learn why this is important](#)

Alex,

Anglian Water is able to confirm that there are no records of flooding in the vicinity that can be attributed to capacity limitations in the public sewerage system. It is possible that other flooding may have occurred that we do not have records of, other organisations such as the Local Authority, Internal Drainage Board or the Environment Agency may have records.

Kind regards

Maks Zdunek
Pre Development Engineer
Mobile: 07811 581 562
Team: 07929 786 955



For further information please email us at planningliaison@anglianwater.co.uk or visit our website at: <https://www.anglianwater.co.uk/developing/planning--capacity/planning-and-capacity/>

From: Woods, Alex <alexander.woods@arcadis.com>
Sent: 12 April 2023 12:37
To: Planning Liaison <planningliaison@anglianwater.co.uk>
Subject: Data enquiry for MK43 9NS

***EXTERNAL MAIL* - Please be aware this mail is from an external sender - THINK BEFORE YOU CLICK**

Good Afternoon,

We are looking into flood risk at the site below to support a potential planning application (approximate postcode: MK43 9NS and Grid Reference: TL 02808 44794).

Could you please inform us if there has been any history of flooding from sewers within this area.



Kind Regards,

Alexander Woods BSc (Hons) MSc
Graduate Consultant, Flood Risk & Hydrology, Resilience
Arcadis Consulting (UK) Ltd
2 Glass Wharf, Temple Quay, Bristol | BS2 0FR | United Kingdom
www.arcadis.com



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*-----

[illegible]

Leslie, Joe

From: Simon Dudley <Simon.Dudley@bedford.gov.uk>
Sent: 16 April 2024 11:04
To: Leslie, Joe
Cc: Rickie Dawkes; Highways Helpdesk
Subject: FW: [External] Request for Information: Land at Kempston Hardwck
Attachments: Kempston Hardwick Gullies.pdf

Bedford BC - **OFFICIAL-Unsecure**

Good morning,
Further to your enquiry below, I can advise as follows:

There is no history of flooding in the area indicated, there was some minor flooding in Manor Road, in the vicinity of G.Moore's Haulage yard but this was due to ditch maintenance and was resolved.

We do not have drawings of drainage assets in the area, surface water and foul water mains are the responsibility of Anglian Water.

I attach a plan showing approximate locations of gullies maintained by Bedford Borough Council.

Exact locations and connections will need to be determined on site.

Regards

Simon

Simon Dudley IEng FIHE
Senior Emergency Response Officer
Highways and Transport
Bedford Borough Council
Depot, 30 Brunel Road
Bedford
MK42 9TG
Mobile 07823 363157

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From: Floodrisk <Floodrisk@bedford.gov.uk>
Sent: 08 April 2024 12:32
To: Leslie, Joe <Joe.Leslie@wsp.com>
Cc: Highways Helpdesk <Highways.Helpdesk@bedford.gov.uk>
Subject: RE: [External] Request for Information: Land at Kempston Hardwck

Bedford BC - **OFFICIAL-Unsecure**

Joe
Firstly sorry for the delay in replying to you

1. In your role of highway drainage authority, we would be grateful if you could provide us with:
 - Details of any known flooding events of the roads or highway drainage in the area, and details on the history of flooding within the area if available;
 - Any available asset records for the existing highway drainage in the area.I am afraid I cannot answer for highways. Try Highways.Helpdesk@bedford.gov.uk

2. **In your role as lead local flood authority, we would be grateful for any information you can provide on:**

- Any known historical flooding at the site. Any known information on the mechanism of flooding (including any studies undertaken) for the area would also be appreciated;
The site is in Bedford IDB's drainage area so you will need to contact them directly.

- Any watercourses/ditches that are within the area that may pose a flood risk to the sites? Could you please supply any known contact details of the relevant responsible authority (for example the Internal Drainage Board);

Bedford IDB details below:-

Bedford Group of Drainage Boards

Vale House

Broadmead Road

Stewartby

Bedfordshire

MK43 9ND

Contact Details

Tel. 01234 767 995

General Enquires: contact@idbs.org.uk

Planning Enquiries: planning@idbs.org.uk

Consent Enquiries: consent@idbs.org.uk

Rating Enquiries: rating@idbs.org.uk

- Any issues related to surface water flooding (including past flooding linked to drainage systems) within the area? We have also contacted the EA/Water Company/IDB for their records;
Bedford IDB and Gov.uk Surface water flood risk map.
- Any information you possess on groundwater (e.g. groundwater level) and the potential for groundwater flooding within the area, if the site is located within a source protection zone and whether infiltration would be an appropriate means of disposing of surface water.
Bedford IDB and the Environment Agency.
- Any water quality issues/requirements for the watercourses on site or downstream that we need to take into account?

Bedford IDB

All SuDS proposals should be in accordance with the adopted SuDS Supplementary Planning Document available in the following link:-

<http://edrms.bedford.gov.uk/OpenDocument.aspx?id=SE%2fYvEcHkpieCiSGAkjD9w%3d%3d&name=SuDS%20SPD.pdf>

Kind Regards

Ollie Ewington

Flood Investigation Officer

Room 401, Borough Hall,

Cauldwell Street, Bedford, MK42 9AP

Mobile 07774 151198

From: Leslie, Joe <Joe.Leslie@wsp.com>
Sent: Tuesday, March 19, 2024 2:03 PM
To: Floodrisk <Floodrisk@bedford.gov.uk>; Ollie Ewington <Ollie.Ewington@bedford.gov.uk>
Cc: Giddings, Jason <jason.giddings2@wsp.com>; Bushell, Cameron <Cameron.Bushell@wsp.com>
Subject: [External] Request for Information: Land at Kempston Hardwck

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Good Afternoon,

Land at Kempston Hardwick

Grid Reference: 502795, 244605
Request for Information

I am writing on behalf of our client, with regard to the above location. Please find attached a location plan indicating the site location. We are investigating potential flood risk and drainage issues at the site in consultation with the Environment Agency and the IDB. I would be very grateful for your attention to the questions below, and in addition would welcome comments on any additional issues or concerns you may have involving this site.

1. In your role of highway drainage authority, we would be grateful if you could provide us with:
 - Details of any known flooding events of the roads or highway drainage in the area, and details on the history of flooding within the area if available;
 - Any available asset records for the existing highway drainage in the area.
2. **In your role as lead local flood authority, we would be grateful for any information you can provide on:**
 - Any known historical flooding at the site. Any known information on the mechanism of flooding (including any studies undertaken) for the area would also be appreciated;
 - Any watercourses/ditches that are within the area that may pose a flood risk to the sites? Could you please supply any known contact details of the relevant responsible authority (for example the Internal Drainage Board);
 - Any issues related to surface water flooding (including past flooding linked to drainage systems) within the area? We have also contacted the EA/Water Company/IDB for their records;
 - Any information you possess on groundwater (e.g. groundwater level) and the potential for groundwater flooding within the area, if the site is located within a source protection zone and whether infiltration would be an appropriate means of disposing of surface water.
 - Any water quality issues/requirements for the watercourses on site or downstream that we need to take into account?

An early response would be greatly appreciated.

Kind regards,



Joe Leslie

Principal Engineer

BEng (Hons) MSc GMICE

He/Him

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-LAEmHhHzdJzBITWfa4Hgs7pbKI

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MEETING MINUTES

PROJECT NUMBER	Project number	MEETING DATE	14 June 2024
PROJECT NAME	Project 320	VENUE	Teams
CLIENT	Client	RECORDED BY	RW
MEETING SUBJECT	Anglian Water Feasibility Study – Updates & Next Steps		

PRESENT	Geoff Darch (AWS), John Young (AWS), Ian Sarjeant (UDX), Eric Fox (UDX), James O'Connor (WSP), Rob Wootton (WSP), Marie Raffin (WSP), Rob Clarke (WSP)
APOLOGIES	Click here to enter text.
DISTRIBUTION	As above plus:
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ITEM	SUBJECT	ACTION	DUE
1	Introductions		
1.1	Attendees introduced and WSP confirmed Rob Wootton would be providing contact continuity for AWS following departure of Rob Clarke on 14/06/2024.		
2	Updated demand assessment		
2.1	<p>Pre-planning assessment has been undertaken by AWS for a requested supply of 8.8ML/d</p> <p>WSP confirmed a revised forecast of the potable water requirements have been updated following receipt of new forecast on future development types / information equating to revised loads of:</p> <ul style="list-style-type: none">3.1ML/d for Phase 1 Opening 202911.1ML/d for Phase 2 Full Build-out 2035		
2.2	AWS noted no concerns in principle with the potential increase to 11/12 MLD for future domestic / potable water needs if this was required.		
2.3	<p>AWS noted the assessment could be reviewed in light of 2.1, and revised if required, and cover any new supply points of connection including secondary supply points for reinforcement.</p> <p>ACTION - WSP to provide revised forecast to enable AWS to update or produce second feasibility study to confirm.</p>	WSP	

2.4	AWS noted Bedford WRC is being upgraded under the next Asset Management Plan (AMP) cycle [AMP8 2025-2030] and that works should be complete towards the end of that cycle; and that correspondingly timeframes are tight to meet the 2029 programme.		
2.5	AWS enquired on security payment and terms that could be put in place to allow AWS design to progress prior to SDO approval. ACTION - AWS to issue draft terms, design fee and security proposals for the UDX team to consider.	AWS	
3	Construction loads – water and foul sewerage, expected c. 1000PE (needed from end 2025)		
3.1	WSP noted that approximately 0.15ML/d is estimated for temporary construction loads from 2025. Linked to the revised forecast and suggestion from AWS on a second feed for resilience. WSP enquired on a separate permanent 0.5ML/d supply from the local network (e.g. Manor Road / Woburn Road, which complements other new utility routes) as this would cover the construction load requirement and also then provide additional resilience to the Core Park. ACTION a – WSP to provide construction sewerage, potable water and construction water demands / needs e.g. production of concrete. ACTION b - AWS to review and advise on best localised points of connection for supplies during construction including review and confirmation of existing water supply / resilience / residual capacity in potable water mains on Manor Road and Woburn Road.	a-WSP b-AWS	
4	Effluent from the onsite process water treatment that will need disposal (2.8ML/d process water plant phase 1, with options to rise to 6.0ML/d subject to available water resources)		
4.1	WSP outlined process water plans confirming two waste streams to be discharged: <ul style="list-style-type: none"> • Sludge - proposed to be removed via tanker to WRC or discharged into the sewer. • Back-wash - proposed to be discharged to sewer network. <p>AWS noted a discharge consent would be required and the initiation of this process is only generally accepted by AWS no earlier than 12-months prior to the start of the discharge.</p> <p>AWS require flow and chemical loading details to determine waste stream requirements. This information would also feed into AMP design and planning.</p> <p>ACTION - WSP to provide details and provide a pre-app enquiry to formalise study need.</p>	WSP	

MEETING NOTES

5	Resilient supply options – understanding what water resource may be available from local supply without reinforcement, expected requirement 0.5ML/d		
5.1	Refer to item 2 and 3.		
6	Next steps / AOB		
6.1	<p>WSP noted borehole abstraction on site was a consideration to assist the water strategy and requested AWS feedback regarding their local experience of other abstractions in the area.</p> <p>AWS noted that majority of AWS abstraction was surface water with only limited ground water abstraction boreholes in the area.</p>		
6.2	<p>AWS enquired whether further water efficiency options being pursued.</p> <p>UDX confirmed and that these would be reviewed and developed as the project progresses.</p>		
6.3	<p>AWS enquired on fire needs.</p> <p>UDX confirmed this was being reviewed with their insurer FM Global.</p>		

NEXT MEETING

An invitation will be issued if an additional meeting is required.

Gardner, Kirstin

From: Patrick Lyons <Patrick.Lyons@bedford.gov.uk>
Sent: 28 April 2024 15:22
To: Gardner, Kirstin
Cc: Himes, Heather (UDX); Ian Sarjeant; Williams, Adam (UDX); McReynolds, John (UDX); Sam Fox
Subject: RE: [External] FW: Project 320 - ES Chapter / Groundwater additional data
Attachments: Area.pdf; 2024.04.22 - Bedford - Water Supplies - Zoom.pdf; 2024.04.22 - Bedford - Water Supplies.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Bedford BC - **OFFICIAL-Unsecure**

Hi Kirstin

With regards to water supplies in the area of the proposed development, I have liaised with colleagues, and we hold limited information.

The only details within the your plan where details were held by the council are for one entry as per below:

- 1. *Location of Private (unlicensed) Water Supplies*
Stanley Works, 3 Ampthill Road, Kempston Hardwick. Eastings: 503849 Northings: 245426
- 2. *Purpose of supply, i.e. irrigation, potable, etc. and yield (annually / daily in cubic meters)*
Unknown: Listed as "Single Domestic"
- 3. *The status of supply, i.e. active/historical*
Unknown. As a single domestic supply the Council are not obligated to monitor and no request to do so has been received.
- 4. *Borehole construction details, specifically total depth (mBGL), screen length (m) and lithological logs*
Unknown. See above.
- 5. *What aquifer is the private well targeting for supply?*
Unknown. See above.
- 6. *Any groundwater quality and groundwater level (in mAOD) data*
Unknown. See above.

I have all attached two plans (wide and zoomed in view) from our GIS system for your information, showing locations in the vicinity and wider area of:

Water Drop –	Private water supplies (one near site)
Blue Lines – Water Pipelines –	closest are north of Wootton and west of Cardington

I have also posed your query to Trevor at the IDB and will come back to you with any further information he may have.

Thank you.

Patrick Lyons
Manager for the Bedford Town Deal
Bedford Borough Council, Borough Hall, Bedford, MK42 9AP

Tel: 01234 276255 (ext.44255)

Mob: 07766478951

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From: Gardner, Kirstin <Kirstin.Gardner@wsp.com>

Sent: Wednesday, April 17, 2024 5:51 PM

To: Sam Fox <sam.fox@bedford.gov.uk>; Patrick Lyons <Patrick.Lyons@bedford.gov.uk>

Cc: Himes, Heather (UDX) <Heather.Himes@universalorlando.com>; Ian Sarjeant

<ian.sarjeant@smiprjectservices.com>; Williams, Adam (UDX) <Adam.Williams@UniversalOrlando.com>;

McReynolds, John (UDX) <John.McReynolds@uniparks.com>

Subject: [External] FW: Project 320 - ES Chapter / Groundwater additional data

Attention: This email originated from outside of Bedford Borough Council. Please be extra vigilant when opening attachments or clicking links.

Hi Sam, Patrick,

The EIA Team are seeking information about water supplies in the area of the P320 Proposed Development and have asked me to reach out to you and see what records may be held by Bedford Borough Council.

Please see email below and attached area of interest.

Is this something you'd be able to investigate for us?

Kind regards,

Kirstin

EMAIL:

Dear Sir/Madame

Project Data Request

WSP has been appointed to support a new entertainment resort complex project and requires information on Private (unlicensed) Water Supplies. We are particularly interested in two main areas: the northern area between the Marston Vale Railway Line (western edge) and the Midland Main Railway Line (eastern edge) and between the A421 (northern edge) to the Manor Rd (southern edge); and the southern area between Marston Vale Railway Line (western edge) and Woburn Rd (eastern edge) and between the Manor Rd (northern edge) and Broadmead Road (southern edge) (with a 250m buffer from the red line boundary, see attached file).

Could you please provide the following information on Private Water Supplies within the area specified above and on the maps provided:

1. Location of Private (unlicensed) Water Supplies
2. Purpose of supply, i.e. irrigation, potable, etc. and yield (annually / daily in cubic meters)
3. The status of supply, i.e. active/historical
4. Borehole construction details, specifically total depth (mBGL), screen length (m) and lithological logs
5. What aquifer is the private well targeting for supply?
6. Any groundwater quality and groundwater level (in mAOD) data

If you have any questions, please do not hesitate to contact me at the number or email below.

Yours sincerely,

Noelia Boaglio



Noelia S. Boaglio

Assistant Hydrogeologist

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From: Gardner, Kirstin <Kirstin.Gardner@wsp.com>

Sent: 17 April 2024 3:17 PM

To: Boaglio, Noelia <Noelia.Boaglio@wsp.com>; O'Connor, James <James.O'Connor@wsp.com>

Cc: Chapman, John <John.Chapman@wsp.com>

Subject: RE: Project 320 - ES Chapter / Groundwater additional data

Hi Noelia,

Best to draft that request and send to me. Then I can send on to the correct person in Bedford Council – I'll cc you in the request.

Kirstin

From: Boaglio, Noelia <Noelia.Boaglio@wsp.com>

Sent: Wednesday, April 17, 2024 3:10 PM

To: O'Connor, James <James.O'Connor@wsp.com>; Gardner, Kirstin <Kirstin.Gardner@wsp.com>

Cc: Chapman, John <John.Chapman@wsp.com>

Subject: Project 320 - ES Chapter / Groundwater additional data

Hello Kirstin/ James,

I hope you are doing well.

I'm working on the ES Chapter - Groundwater team, and I've been told I should check with you before sending any requests outside of WSP.