

Appendix D – Sewer Records and PDE Response



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Date: 11/07/25 Scale: 1:1250 Map Centre: 523357,321390 Title: G2989405-1



Water Main (Potable)			Hydrant
Decommissioned Water			Fitting
Water Main (Raw)			



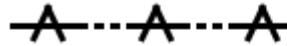
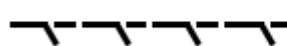
This plan is provided by Anglian Water pursuant its obligations under the Water Industry Act 1991 sections 198 or 199. It must be used in conjunction with any search results attached. The information on this plan is based on data currently recorded but position must be regarded as approximate. Service 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 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 2025 Ordnance Survey AC0000813445. 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.



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	Foul Sewer		Decommissioned Sewer (colour denotes effluent type)		Manhole (colour denotes effluent type)		Public Sewage Treatment Works
	Surface Sewer		Private Sewer (colour denotes effluent type)		Public Pumping Station		Private Sewage Treatment Works
	Combined Sewer		Rising Main (colour denotes effluent type)		Private Pumping Station		Outfall (colour denotes effluent type)
	Final Effluent				Decommissioned Pumping Station		Inlet (colour denotes effluent type)



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Tier 1 Pre-Planning Assessment Report

Domestic Foul Water Drainage Feasibility Study

Anglian Water Reference Number:	PPE-0232454
Report Engineer:	Maks Zdunek
Publication Date:	26/09/2025
Expiration Date:	26/09/2026
Site Name:	Land off Shakespeare Way, Holland Park, Spalding, PE11 1GU
Development Details:	70 bed care home
Site National Grid Reference:	TF2335521381
Development Type:	Greenfield
Planning Application Status:	Unknown

This report has been produced for Country Court Care Limited and is to be submitted as part of a developed drainage strategy should planning permission be sought.

Anglian Water will use this report as the basis for any forthcoming planning application response relevant to this application.

Anglian Water cannot reserve capacity and therefore you are recommended to formally apply for a connection at your earliest convenience. Please note that available capacity in both the receiving network and water recycling centre (WRC) can be reduced at any time due to increased requirements from existing businesses and houses as well as from new housing and new commercial developments.



Summary

Easements

We have assessed above and below ground operational assets in relation to your proposed development site

Water Recycling Centre (WRC)

We have assessed the receiving water recycling centre to determine whether it can process the increased flows and effluent quality arising from your development and continue to meet its permitted discharge consents.

Our reference data tables are updated in April each year (following submission to regulators). Previously identified headroom may no longer be available.

Foul Drainage Network - Sustainable Point of Connection (SPOC)

We have assessed the receiving foul water drainage system to identify a sustainable point of connection for your site to connect to the public sewerage network without causing a detriment to the operation of the system.

Indicative costs –

The network infrastructure charge per dwelling is set for the 2025-26 charging period at £403.00. For a development of N/A dwellings the total infrastructure charge will total £N/A excluding VAT.

Section 1 - Anglian Water Assets and Easements

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.

Pipes - We have not identified pipework infrastructure within the boundaries of your site

Operational Assets – We do not have operational assets within 20m of your site

Source Protection Zone (SPZ) – Your site does not sit within an identified SPZ

Water Recycling Centre (WRC) – Your site is not within the encroachment zone

The proposed development site boundary is highlighted on Anglian Water's asset record in figure 1. 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.

Any potential instances of asset encroachment are to be identified and addressed at planning. Anglian Water are unable to permit development either over or within the easement strip without prior consent. The extent of asset easements are available in table 1. 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.

Used Water Easements – Measured either side of the centre line (m)						
	Depth to Invert (m)					
Sewer Diameter(mm)	< 3	3 - 4	4 - 5	5 - 6	6 - 7.5	> 7.5
< 150	3.0	3.0	4.0	5.0	6.0	4.0
150 - 299	3.0	3.0	4.0	5.0	6.0	4.0
300 - 449	3.0	3.0	4.0	5.0	6.0	4.0
450 - 600	3.5	4.0	5.0	6.0	6.0	4.0
601 - 749	3.5	4.0	5.0	6.0	6.0	4.0
750 - 924	4.0	5.0	5.0	6.5	6.5	5.0
925 - 1000	5.0	5.0	6.0	6.5	6.5	5.0

Table 1: Anglian Water used water asset easements

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; please note that in some instances assets cannot be diverted; it is therefore vital to engage with our Drainage team prior to finalising site layout. The Drainage team can be contacted by calling 03456 066 087.

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.

For your information, please be aware:

- Anglian Water does not permit existing assets to be located within the curtilage of the proposed development buildings and we do not permit permeable paving or suds features over our assets. These assets should be located in areas of public open space and/or adoptable highways to ensure on-going maintenance and access is possible. We strongly recommend that the applicant reviews the site layout plan and take the above in consideration to reflect the easement required for the sewer which is 3m either side of the sewers.
- Development is not permissible either over or within the established easement strip of any public asset without Anglian Water's granted prior consent.
- A new developments site layout must adhere to the required easements. You may also discuss potential diversions with us.
- Please be aware that existing water mains/public sewers should be located in highway or open space and not in private gardens or curtilages.
- Rising mains may not be located under play equipment or SUDS features. This is to ensure available access for any future maintenance and repair and this should be taken into consideration when planning your site layout.
- No significant planting can be located in the designated easement strip, to ensure that root intrusion does not pose a risk to our assets. Where necessary and to maintain the aesthetics of the proposed landscaping, ornamental/low lying hedges or similar are considered acceptable, but should be limited.
- In any case where site levels are to be altered within an easement strip, Anglian Water will request a CCTV survey is undertaken to understand the existing condition of the affected sewer and potential impact of this proposal. The footage and accompanying report should be provided to Anglian Water alongside any observations or recommendations (should these be identified) by your designer. In addition, the manholes in this area would also need to be raised to finished level. Anglian Water would expect photographs confirming the existing construction of these chambers and a design drawing which illustrates how this outcome will be achieved whilst maintaining compliance with Design and Construction Guidance (DCG) standards.
- Anglian Water will expect confirmation of the established measures that will allow 24 hour unencumbered access for assets within the vicinity of the development. It is beneficial to understand how awareness of Anglian Water's need for access to provide this in perpetuity will be established going forward. It can be assumed that plot transfers (if appropriate) will contain covenants/rights relating to these assets; we would appreciate clarification on this point.
- It is the developer's responsibility to ensure the correct sight surveys are completed i.e. trial holes, to ascertain the exact location of Anglian Water assets. You should then present your findings to Anglian Water – we may need to complete formal risk assessments (at the developers cost) for certain asset types.

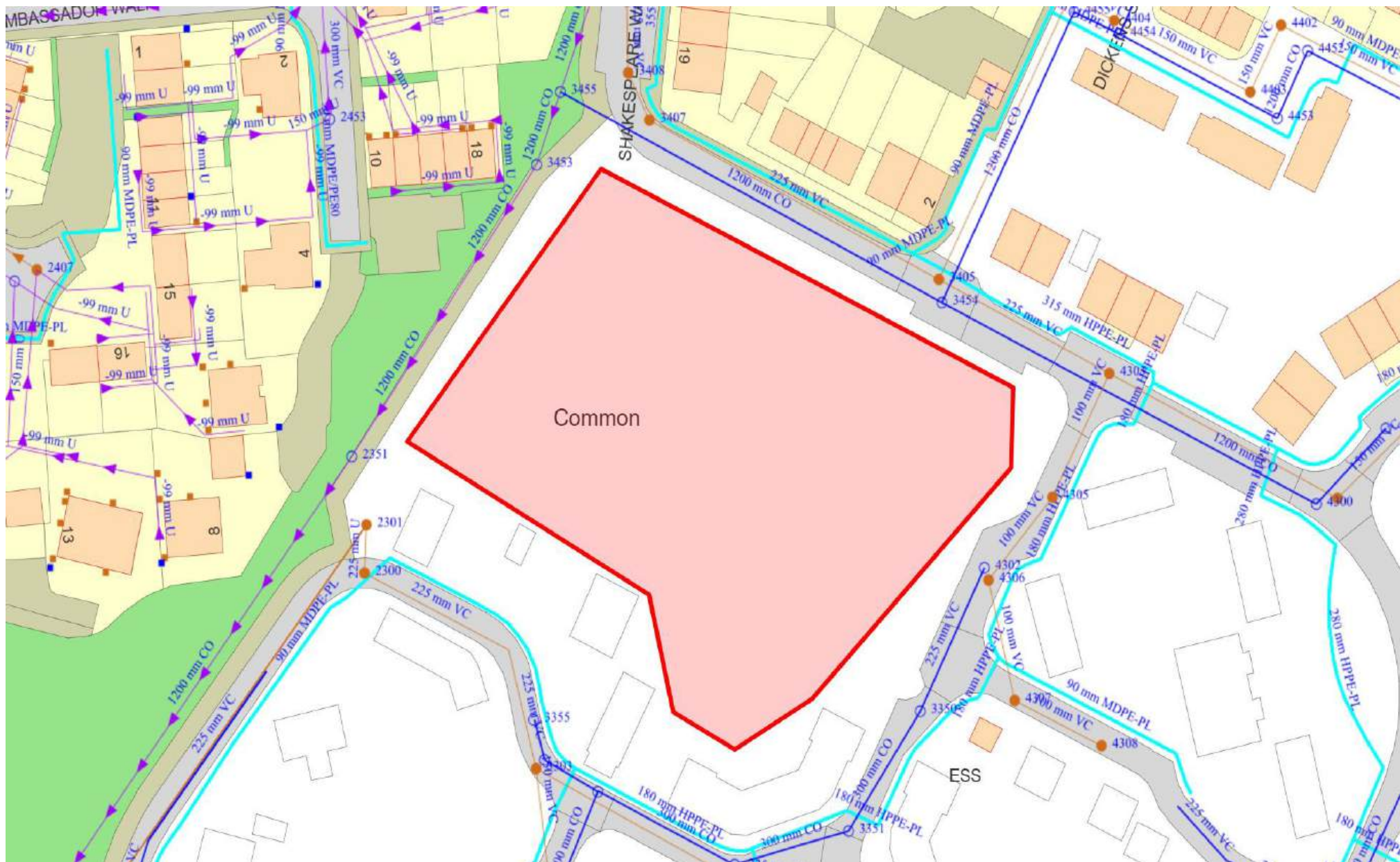


Figure 1: The site boundary for the proposed development as shown on Anglian Water asset records.

Section 2 – Used Water Assessment

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 the headroom available to manage the increased effluent flows and effluent quality from your development.

Water Recycling Centre

When assessing the receiving water recycling centre's (WRC) dry weather flow (DWF) headroom we take the latest Q90 DWF figures, as verified by the Environment Agency, and add to this sites with planning consent.

Based on the above assessment, Spalding WRC is within the acceptance parameters and can accommodate the flows from the proposed growth.

Used Water Network

Our assessment has been based on development flows connecting to the nearest 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 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 150mm internal diameter pipe is required to drain the development site. We have assessed the sustainable point of connection, which is to the 225mm foul sewer in Shakespeare Way at any point downstream of MH3401, located at national grid reference (NGR) TF 23315 21475. The cover and invert levels for this manhole are unavailable in our asset record. Anglian Water has assessed the local foul sewerage network up to the water recycling centre and determined that the additional foul flow from the proposed development would not create an unacceptable risk of flooding to our existing customers and the environment. Anglian Water cannot reserve capacity and therefore you are recommended to formally apply for a connection at your earliest convenience.

Please note that available capacity in our network can be reduced at any time due to increased requirements from existing businesses and houses as well as from new housing and new commercial developments.

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.

Trade Effluent

It is noted that there are no specified trade effluent requirements for the proposed development site. Should this be required in the future, please submit a Tier 2 PPE assessment.

Used Water Budget Costs

For a development site that benefits from full planning permission, infrastructure charges are raised on a standard basis of one charge per new connection, one each for water supply and drainage connections.

Infrastructure charges are applied to each new property connecting to the public water and sewerage network. The infrastructure charge type is set out in Section 146(2) of the Water Industry Act 1991. The charge should be paid by any party that wishes to build or develop a property and is payable upon request of connection.

The sewerage infrastructure charge per dwelling is set for the 2025-26 charging period at £403.00. For a development of N/A dwellings the total infrastructure charge will total £N/A.

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. The relevant multiplier will be applied to the figures set out in our 2025-26 Developer Charging Arrangements to arrive at the amount payable. Details of the relevant multiplier for each fitting can be found on our website.

Environmental Incentives

Following regulatory guidance and changes to the charging rules the Infrastructure Charge for connections to our water network will no longer attract an income offset discount after 31st March 2025. This will be replaced with a new Environmental Incentive Scheme (EIS) aimed at promoting water efficiency and sustainability.

Anglian Water’s EIS has been developed in accordance with the Environmental Incentive Common Framework (EICF), which was released by Ofwat in December 2024. For this charging year, 2025-26, and in accordance with Ofwat guidance, only household properties will be eligible for our EIS. We will continue to reassess this for future charging years.

There are two elements to our EIS

Water Environmental Incentive

The applicant must demonstrate the newly connected property is designed to achieve consumption of 90 litres per person per day (pppd) or less.

Post property connection, we will conduct compliance audits on the first connected property and 10% of the remaining properties on a random basis.

Sewerage Environmental Incentive.

Post property connection for redeveloped brownfield sites we will complete a site inspection to confirm the removal of surface water flows.

Environmental Component

This charge is used solely to fund the Environmental Incentive and is uniformly applied upon connection of each developed property; this includes connections which do not qualify for the Environmental Incentive.

Environmental Incentives	Charge per property
Water Environmental Incentive	-500
Environmental Incentive Component Charge Water	100
Additional Water EIS Audit (per premises)	84
Sewerage Environmental Incentive (50% of Sewerage Infra)	-202
Environmental Incentive Component Charge Sewerage	0

Our EIS will be available between 1st April 2025 and 31st March 2030 and during this period, we reserve the right to make any amendments to the EIS as we may see fit, including amendments to the value of both Environmental Incentives and the Component Charges. The EIS may close on 31st March 2030, therefore to qualify for the Environmental Incentives, your plot must be connected to our network, and validated by us. Please refer to our Developer Charging [Arrangements](#) for full details. To learn more or apply for our environmental incentive scheme please visit our website [Water Environmental Incentive Scheme](#)

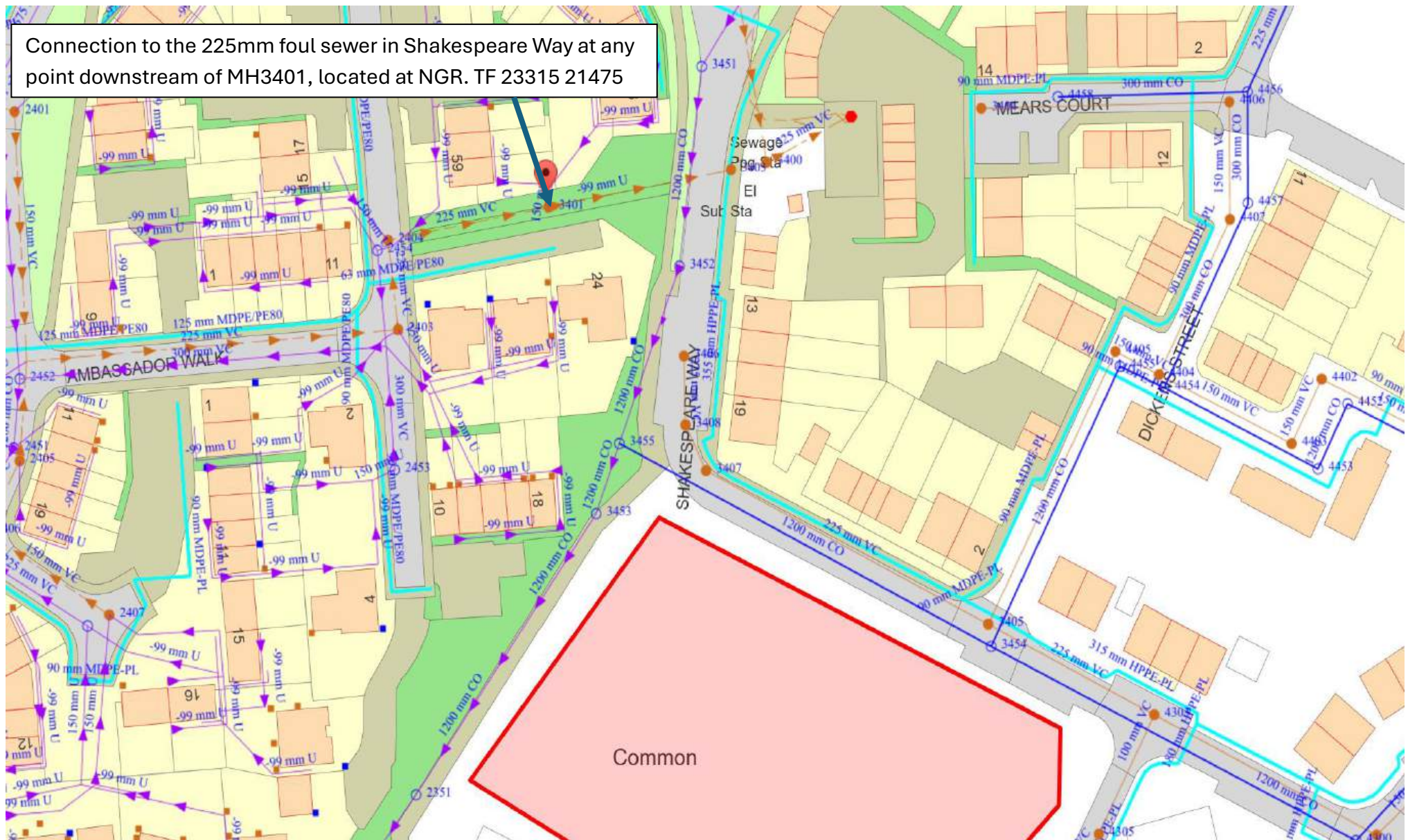


Figure 2: Showing your connection point for foul water

Section 3 – Useful Information

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 via our Development Services team on 0345 60 66 087.

Surface Water Drainage

All surface water must be managed in line with Building Regs / Sewer Sector Guidance (SSG). Our guidance document and Surface Water policy ([insert website link](#)) detail our requirements and expectations. You must explore all on-site options per the SUDS hierarchy before speaking to us about a possible connection to our SW drainage network. We recommend that you contact the Local Authority and Lead Local Flood Authority (LLFA) for your site to discuss your application.

Sustainable drainage systems

Some existing urban drainage systems have additional risks 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](#).

Private sewer transfers

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 discharged 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.

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 encroachment on our above and below ground infrastructure and assets.

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 [link added here](#)

Section 4 - 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 from the date issued 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). Our pre-planning reports are valid for 12 months. Please note Anglian Water cannot reserve capacity and available capacity in our network can be reduced at any time due to increased requirements from existing businesses and houses as well as from new housing and new commercial developments.



Surface Water Pre-Planning Assessment Report

Anglian Water Reference Number:	STR-0240494
Report Engineer:	Doug Mlambo
Publication Date:	01/04/2026
Expiration Date:	31/03/2027
Site Name:	Holland Park, Spalding
Development Details:	70 Bed Care Home
Site National Grid Reference:	TF 23355 21381
Development Type:	Greenfield
Planning Application Status:	Unknown

This report has been produced for **Dice Consulting Engineers** and is to be submitted as part of a developed drainage strategy should planning permission be sought.

Anglian Water will use this report as the basis for any forthcoming planning application response relevant to this application.

Anglian Water cannot reserve capacity and therefore you are recommended to formally apply for a connection at your earliest convenience. Please note that the available capacity in both the receiving network and water recycling centre (WRC) can be reduced at any time due to increased requirements from existing businesses and houses as well as from new housing and new commercial developments.

We will object to a planning consultation unless evidence is provided to demonstrate that the surface water hierarchy has been fully applied and that a connection to the sewer is unavoidable. Any advice in this report suggesting that a connection could be accepted in principle is strictly conditional upon prior evidence confirming that the hierarchy has been followed and a sewer connection is necessary.



Summary

Easements

We have assessed above and below ground operational assets in relation to your proposed development site

Surface Water Drainage

We have completed a Drainage Impact Assessment (DIA) for your development site following your submission of requested evidence. The DIA takes account of the flows within the network for the upstream catchment to your sustainable point of connection and the impact of these additional flows on the downstream network.

Section 1 - Anglian Water Assets and Easements

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.

Pipes - We have not identified pipework infrastructure within the boundaries of your site

Other Assets – We do not have **other assets** within 20m of your site

Source Protection Zone (SPZ) – Your site does not sit within a SPZ

The proposed development site boundary is highlighted on Anglian Water's asset record in Figure 1. 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.

Any potential instances of asset encroachment are to be identified and addressed at planning. Anglian Water are unable to permit development either over or within the easement strip without prior consent. The extent of asset easements are available in Table 1. 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.

Used Water Easements – Measured either side of the centre line (m)						
Sewer Diameter(mm)	Depth to Invert (m)					
	< 3	3 - 4	4 - 5	5 - 6	6 - 7.5	> 7.5
< 150	3.0	3.0	4.0	5.0	6.0	4.0
150 - 299	3.0	3.0	4.0	5.0	6.0	4.0
300 - 449	3.0	3.0	4.0	5.0	6.0	4.0
450 - 600	3.5	4.0	5.0	6.0	6.0	4.0
601 - 749	3.5	4.0	5.0	6.0	6.0	4.0
750 - 924	4.0	5.0	5.0	6.5	6.5	5.0
925 - 1000	5.0	5.0	6.0	6.5	6.5	5.0

Table 1: Anglian Water used water asset easements

Potable Water Easements - Measured either side of the centre line (m)	
Potable Mains Pipe Diameter (mm)	Distance either side of the centre line (m)
< 150	2.25
150 - 449	3.0
450 - 749	4.5
750 >	6

Table 2: Anglian Water potable water asset easements

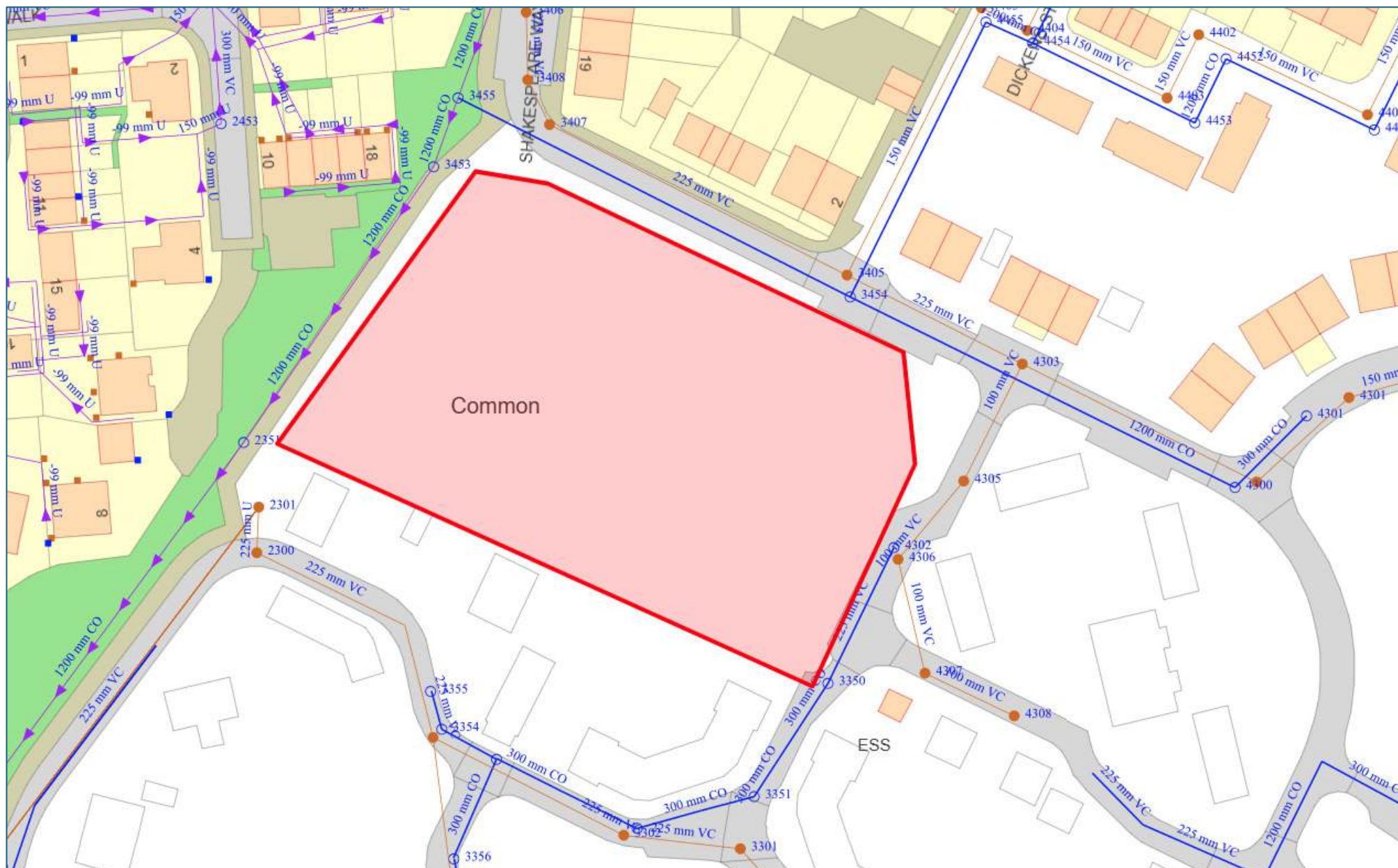
If it is not possible to avoid our assets then these may need to be diverted in accordance with Section 185 of the Water Industry Act (1991). You will need to make a formal application if you would like a diversion to be considered; please note that in some instances assets cannot be diverted; it is therefore vital to engage with our Drainage team prior to finalising site layout.

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.

For your information, please be aware:

- Anglian Water does not permit existing assets to be located within the curtilage of the proposed development buildings, and we do not permit permeable paving or suds features over our assets. These assets should be in areas of public open space and/or adoptable highways to ensure on-going maintenance and access is possible. We strongly recommend that the applicant reviews the site layout plan and take the above in consideration to reflect the easement required for the sewers. Development is not permissible either over or within the established easement strip of any public asset without Anglian Water's granted prior consent.
- A new developments site layout must adhere to the required easements. You may also discuss potential diversions with us.
- Please be aware that existing water mains/public sewers should be located in highway or open space and not in private gardens or curtilages.
- Rising mains may not be located under play equipment or SUDS features. This is to ensure available access for any future maintenance and repair, and this should be taken into consideration when planning your site layout.
- No significant planting can be located in the designated easement strip, to ensure that root intrusion does not pose a risk to our assets. Where necessary and to maintain the aesthetics of the proposed landscaping, ornamental/low lying hedges or similar are considered acceptable but should be limited.
- In any case where site levels are to be altered within an easement strip, Anglian Water will request a CCTV survey is undertaken to understand the existing condition of the affected sewer and potential impact of this proposal. The footage and accompanying report should be provided to Anglian Water alongside any observations or recommendations (should these be identified) by your designer. In addition, the manholes in this area would also need to be raised to finished level. Anglian Water would expect photographs confirming the existing construction of these chambers and a design drawing which illustrates how this outcome will be achieved whilst maintaining compliance with Design and Construction Guidance ([DCG standards](#)).
- Anglian Water will expect confirmation of the established measures that will allow 24-hour unencumbered access for assets within the vicinity of the development. It is beneficial to understand how awareness of Anglian Water's need for access to provide this in perpetuity will be established going forward. It can be assumed that plot transfers (if appropriate) will contain covenants/rights relating to these assets; we would appreciate clarification on this point.

- It is the developer's responsibility to ensure the correct sight surveys are completed i.e. trial holes, to ascertain the exact location of Anglian Water assets. You should then present your findings to Anglian Water – we may need to complete formal risk assessments (at the developers cost) for certain asset types.



Section 2 – Used Water Assessment

Surface water – Drainage Impact Assessment (DIA)

Our assessment has been undertaken in accordance with the surface water strategy outlined on the planning application and the following supporting documents:

- **Proposed Site Plan**
- **Pre-Development Engineer Statement Full, Ref. 102378-DCE-XX-XX-RP-C-0001**

We have completed a DIA which considers the evidence you provided for your identified development scenario, in reference to our Surface Water Risk Management Guide. In accordance with our guidance, we have categorised the proposed surface water drainage strategy as:

Scenario 3: New surface area draining to an existing SW sewer

The Drainage Impact Assessment (DIA) takes account of the flows within the network for the upstream catchment to your sustainable point of connection (SPOC) and the impact of these additional flows on the downstream network.

We have assessed network performance with reference to the proposed sustainable point of connection and the SPOC to the public surface water network along southwest boundary of the site at manhole **MH2351**, located at approximately National Grid Reference **(NGR) TF 23294 21380**.

It is our understanding that the evidence to confirm compliance with the surface water hierarchy is yet to be approved by the LLFA. Once the evidence has been confirmed, then the following connection may be made:

Connection point – to the **1200mm** surface water sewer located at approximately National Grid Reference **NGR TF 23294 21380** at maximum rate of **5 litres per second (l/s)** for all design events, including the **1:100 year plus climate change**.

NB: NO S106 approval will be issued without written approval from the LLFA clearly stating the onsite design criteria, surface water hierarchy approval including the maximum discharge rate to the AW sewer stated above.

The point of connection to the public surface water network is highlighted in **Figure 2**.

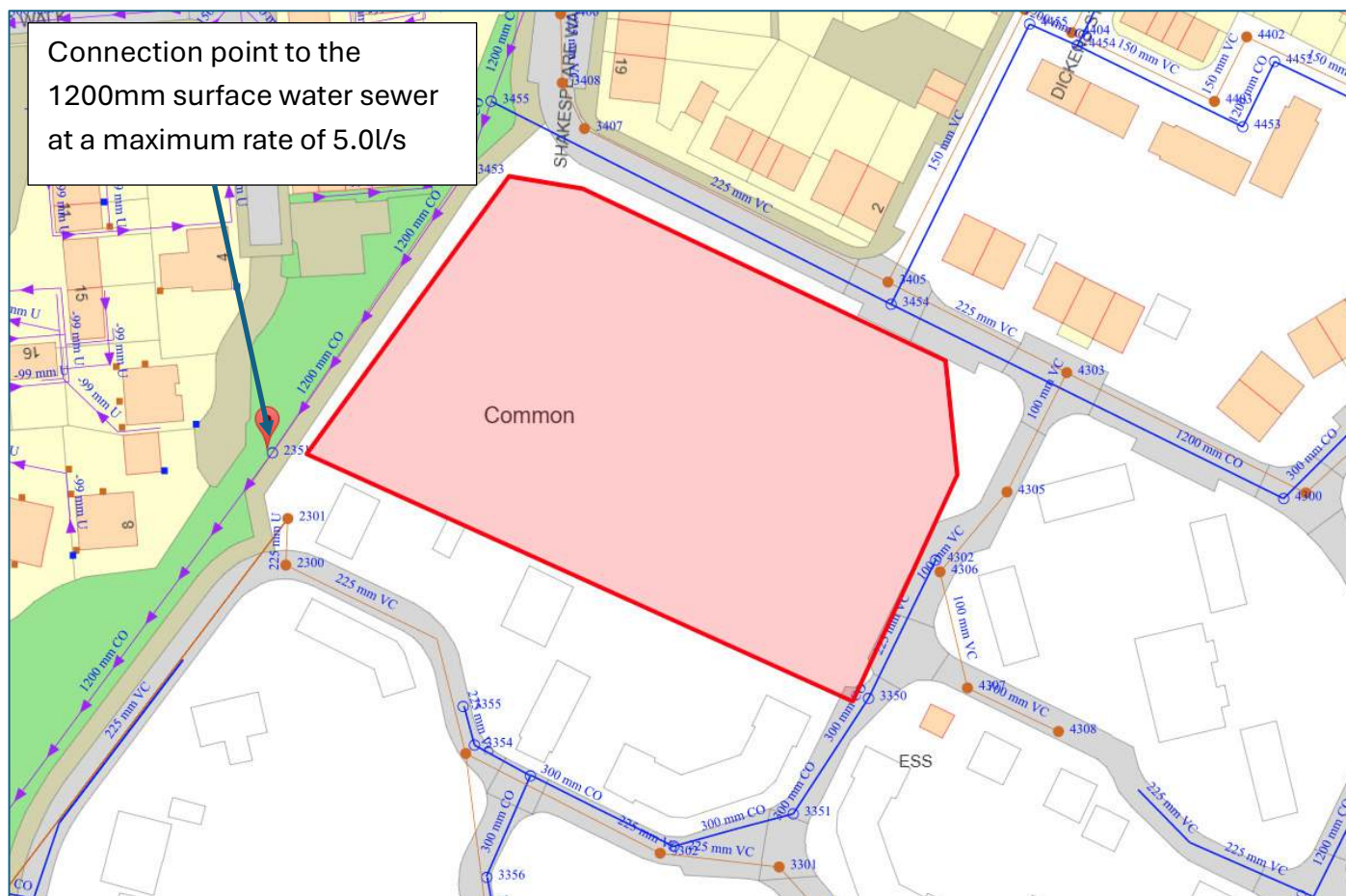


Figure 2: Showing your Surface Water connection point

Section 3 – Useful Information

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 via our Development Services team on 0345 60 66 087.

Surface Water Drainage

All surface water must be managed in line with Building Regs / Sewer Sector Guidance (SSG). Our guidance document and Surface Water policy detail our requirements and expectations. You must explore all on-site options per the SUDS hierarchy before speaking to us about a possible connection to our SW drainage network. We recommend that you contact the Local Authority and Lead Local Flood Authority (LLFA) for your site to discuss your application.

Sustainable drainage systems

Some existing urban drainage systems have additional risks 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](#).

Private sewer transfers

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 discharged 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.

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 encroachment on our above and below ground infrastructure and assets.

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 [link added here](#)

Section 4 - 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 from the date issued 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). Our pre-planning reports are valid for 12 months. Please note Anglian Water cannot reserve capacity and available capacity in our network can be reduced at any time due to increased requirements from existing businesses and houses as well as from new housing and new commercial developments.

Appendix E – Adjacent Development Drainage Strategy

NOTES:

DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
CHECK ON SITE AND ALL DISCREPANCIES TO BE
REPORTED TO HALL infrastructure DESIGN Ltd.

AMENDMENTS:

REF.	DESCRIPTION.	DATE.	BY.
A	Detailed design added.	10.09.13	GW

CLIENT:

Broadgate Homes Ltd

PROJECT:

St John's View
Holland Park
Spalding

TITLE:

Balancing Lagoon Enlargement

SCALE:

1:1000

DATE:

March 2013

DRAWING No:

1302/01-A

DRAWN BY:

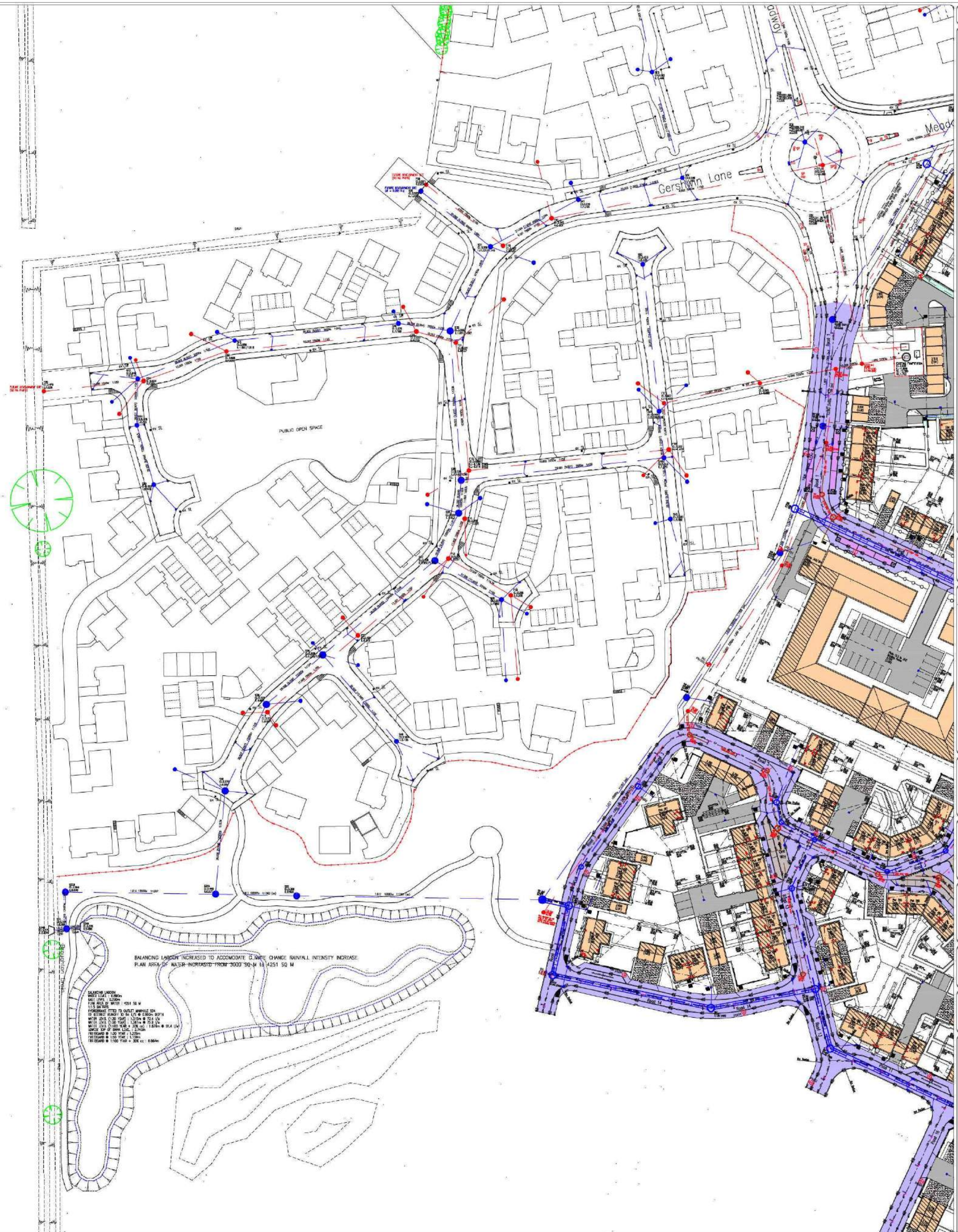
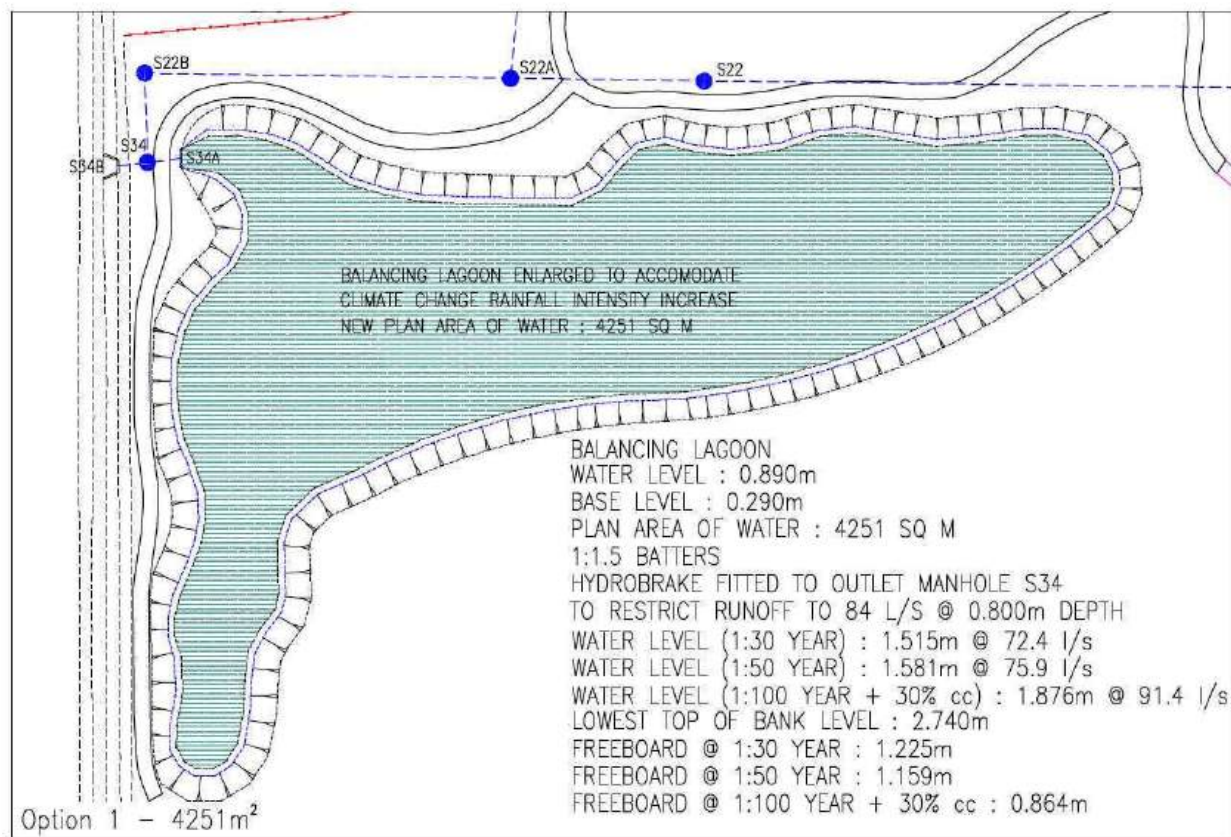
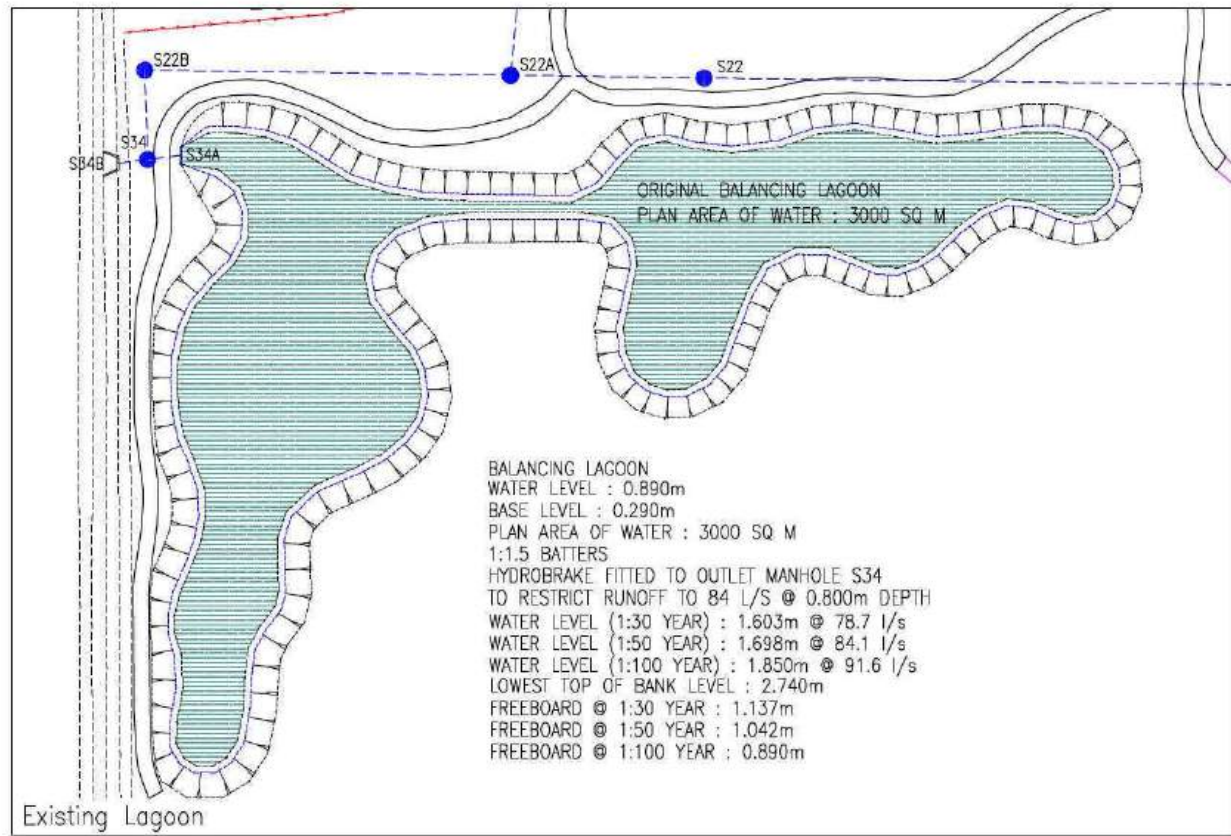
[Signature]

CHECKED BY:

[Signature]

HALL
-infrastructure-
DESIGN

Storrs Cottage, The Square,
North Thoresby, Grimsby,
North East Lincs, DN36 5QL
Tel: 01472 841825 Mob: 07891 503179
email: hall.design@btinternet.com
website: www.hall-infrastructure-design.co.uk



Appendix F – Environment Agency Product 4 Data

Iva Dimitrov
iva@diceconsult.co.uk

Our ref: EIR2026/02906
Date: 26/01/2026

Dear Iva,

Flood Risk Information for Shakespeare Way, Spalding

The flood risk information for the above site is set out below and attached. It is important you read any contextual notes on the maps provided.

If you are preparing a Flood Risk Assessment (FRA) for this site, please note this information may not be sufficient by itself to produce an adequate FRA to demonstrate the development is safe over its lifetime. Additional information may be required to carry out an appropriate assessment of all risks, such as the consequences of a breach in the flood defences.

We aim to review our information on a regular basis, so if you are using this data more than twelve months from the date of this letter, please contact us again to check it is still valid.

Please read the letter in full as the information covered has been updated in **August 2025**.

1. Flood Map for Planning

The attached map includes the current Flood Map for Planning for your area. The map indicates the Area at Risk of Flooding (Flood Zone 3) and the Extreme Flood Outline (Flood Zone 2) **assuming no flood defences exist**.

The Area at Risk of Flooding shows the land that could be impacted from a flood with a 0.5% or greater chance of occurring in any year for flooding from the sea, or a 1% or greater chance of occurring in any year for fluvial (river) flooding.

The Extreme Flood Outline shows the land that could be impacted from a flood which has between a 1% and 0.1% chance of occurring in any year for fluvial (river) flooding, or between a 0.5% and 0.1% annual probability of sea flooding, or the highest recorded historic extent if greater.

In some locations, such as around the fens and the large coastal floodplains, showing the area at risk of flooding assuming no defences may give a slightly misleading picture in that if there were no flood defences, water would spread out across these large floodplains. This flooding could cover large areas of land but to relatively shallow depths and could leave pockets of locally slightly higher land as isolated dry islands. It is important to understand the actual risk of the flooding to these dry islands, particularly in the event of defence failure.

The Flood Map for Planning also shows the location of formal raised flood defences and flood storage reservoirs. It represents areas at risk of flooding for present day only and does not take account of climate change.

The Flood Map for Planning only indicates the extent and likelihood of flooding from rivers or the sea. It should also be remembered flooding may occur from other sources such as surface water sewers, road drainage, etc.

2. Recorded Flood Outlines

The area was previously known to have flooded in March 1947.

A copy of the Recorded Flood Outlines Map showing the extent of previous recorded flooding in your area is attached. This only covers information we hold, and it is possible recent flooding may have occurred which we are currently investigating, therefore this information may be subject to change.

It is possible other flooding may have occurred which other organisations, such as the Lead Local Flood Authority (i.e. top tier council), Local Authority or Internal Drainage Board (where they exist), may have records.

3. Schemes in the area

There are no ongoing capital projects to reduce or sustain the current flood risk to this area.

4. Fluvial Flood Risk Information

The site may be at risk from main rivers in the form of residual risk due to the failure of flood management infrastructure such as a breach of a raised flood defence. You may need to undertake further assessment of this residual risk using the data provided.

The site may also be at risk from local ordinary watercourses for which other risk management authorities, such as the Lead Local Flood Authority (i.e. top tier council) or Internal Drainage Board (where they exist) have responsibility.

4.1 Fluvial Defence Information

The existing fluvial defences reducing the risk of flooding to this site consist of Crowland-Cowbit Washes and embankment. They are in fair condition and provide protection against a flood event with a 1% chance of occurring in any year (1 in 100). We inspect these defences regularly to ensure that any potential defects are identified early.

Refer to paragraph 3 for details of any ongoing capital projects to reduce the flood risk to this site.

4.2 Fluvial Modelled Levels and Flows

Available modelled fluvial flood levels and flows for the model nodes shown on the attached map are set out in the data table attached. This data is taken from the model named on the data table, which is the most up-to-date model currently available.

Please note these levels are “in-channel” levels and therefore may not represent the flood level on the floodplain, particularly where the channel is embanked or has raised defences.

Our models may not have the most up to date climate change allowances. In time we will update our models for the latest allowances. You should refer to ['Flood risk assessments: climate change allowances'](#) to check if the allowances modelled are appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

4.3 Fluvial Modelled Flood Extents

Please find attached a map showing available modelled flood extents, taking into account flood defences, for your area. This data is taken from the model named on the map, which is the most up-to-date model currently available.

In some cases the flood extents shown may not be from main river, but may be from other sources such as IDB lowland drainage networks.

4.4 Fluvial Hazard Mapping

For certain locations we have carried out modelling to map the maximum values of flood depth, velocity and hazard rating (danger to people) resulting from overtopping and / or breaching of defences at specific locations for a number of scenarios.

At present this information is available for fluvial flood risk in Northampton, Lincoln, Wainfleet and some isolated rural locations.

The number of locations we have this information for is expected to increase in time.

At present this site is not covered by any Environment Agency hazard mapping. Detailed Hazard Mapping is available within the 2017 Update of South Holland Strategic Flood Risk Assessment. This can be downloaded via the following link:
<http://www.southeastlincslocalplan.org/water/>

5. Tidal Flood Risk Information

This site is not considered to be at risk from tidal flooding.

6. Development Planning

If you would like local guidance on preparing a flood risk assessment for a planning application, please contact our Sustainable Places team at LNplanning@environment-agency.gov.uk. It will help if you mention this data request and attach your site location plan.

We provide free preliminary advice; additional/detailed advice, review of draft FRAs and meetings are chargeable at a rate set to cover our costs, currently £115 (plus VAT) per hour of staff time. Further details are available on our website at <https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planning-proposals>.

General advice on flood risk assessment for planning applications can be found on GOV.UK at <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>

We have provided information on risk of breach where it is available. If you are intending on using this information to prepare a Flood Risk Assessment you will need
customer service line 03708 506 506
[gov.uk/environment-agency](https://www.gov.uk/environment-agency)

to check if the data meets your requirements. You may need to carry out further assessment (or modelling) for sites that are at residual risk (including from breach of defences), or additional locations or scenarios.

Climate change will increase flood risk due to overtopping of defences. Please note, unless specified otherwise, the climate change data included has an allowance for 20% increase in flow. Updated guidance on how climate change could affect flood risk to new development - 'Flood risk assessments: climate change allowances' was published on GOV.UK in **July 2021**. The appropriate updated climate change allowance should be applied in a Flood Risk Assessment.

You should also consult the Strategic Flood Risk Assessment produced by your local planning authority.

7. Permitting Information

Under the Environmental Permitting (England and Wales) Regulations 2016, permission must be obtained from the Environment Agency for any proposed activities which will take place:

- in, over, under or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culvert (16 metres if tidal)
- on or within 16 metres of a sea defence
- within 16 metres of any main river, flood defence (including a remote defence) or culvert for quarrying or excavation
- in a flood plain more than 8 metres from the river bank, culvert or flood defence structure (16 metres if tidal) if planning permission has not already been granted for the works

For further guidance and advice please visit our website: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits> or contact our local Partnerships and Strategic Overview team by email at psown@environment-agency.gov.uk.

The team will be able to advise if an environmental permit or exemption registration is required and the fee applicable.

Please note that a permit is separate to and in addition to any planning permission granted. The applicant should not assume that such a permit will automatically be forthcoming once planning permission has been granted, and we would advise them to consult with us at the earliest opportunity.

8. Data Licence and Other Supporting Information

We respond to requests for recorded information we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR).

This information is provided in accordance with the Open Government Licence which can be found here: <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Further information on flood risk can be found on the GOV.UK website at: <https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

Rights of appeal

If you are not satisfied with our decision, you can contact us within two calendar months to ask for the decision to be reviewed. We will then conduct an internal review of our response to your request and give you our decision in writing within 40 working days.

If you are not satisfied with the outcome of the internal review, you can then make an appeal to the Information Commissioner Office, the statutory regulator for EIR and the Freedom of Information Act 2002. The address is: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire. SK9 5AF.

Tel: 0303 123 1113 (local rate) or 01625 545 745 (national rate) | Fax: 01625 524 510

Email: casework@ico.org.uk | Website: www.ico.org.uk

9. Other Flood Risk Management Authorities

The information provided with this letter relates to flood risk from main river or the sea. The Flood Map for Surface Water can be viewed at <https://www.gov.uk/check-long-term-flood-risk>

Additional information may be available from other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist).

I hope we have correctly interpreted your request. If you have any queries or would like to discuss the content of this letter further please contact Christopher using the email address below and quoting our EIR reference number above.

Yours sincerely,

Christopher Hill

for John O'Neill

Welland and Nene Partnerships and Strategic Overview Team Leader

e-mail PSOWN@environment-agency.gov.uk

Enc.

Flood Map for Planning

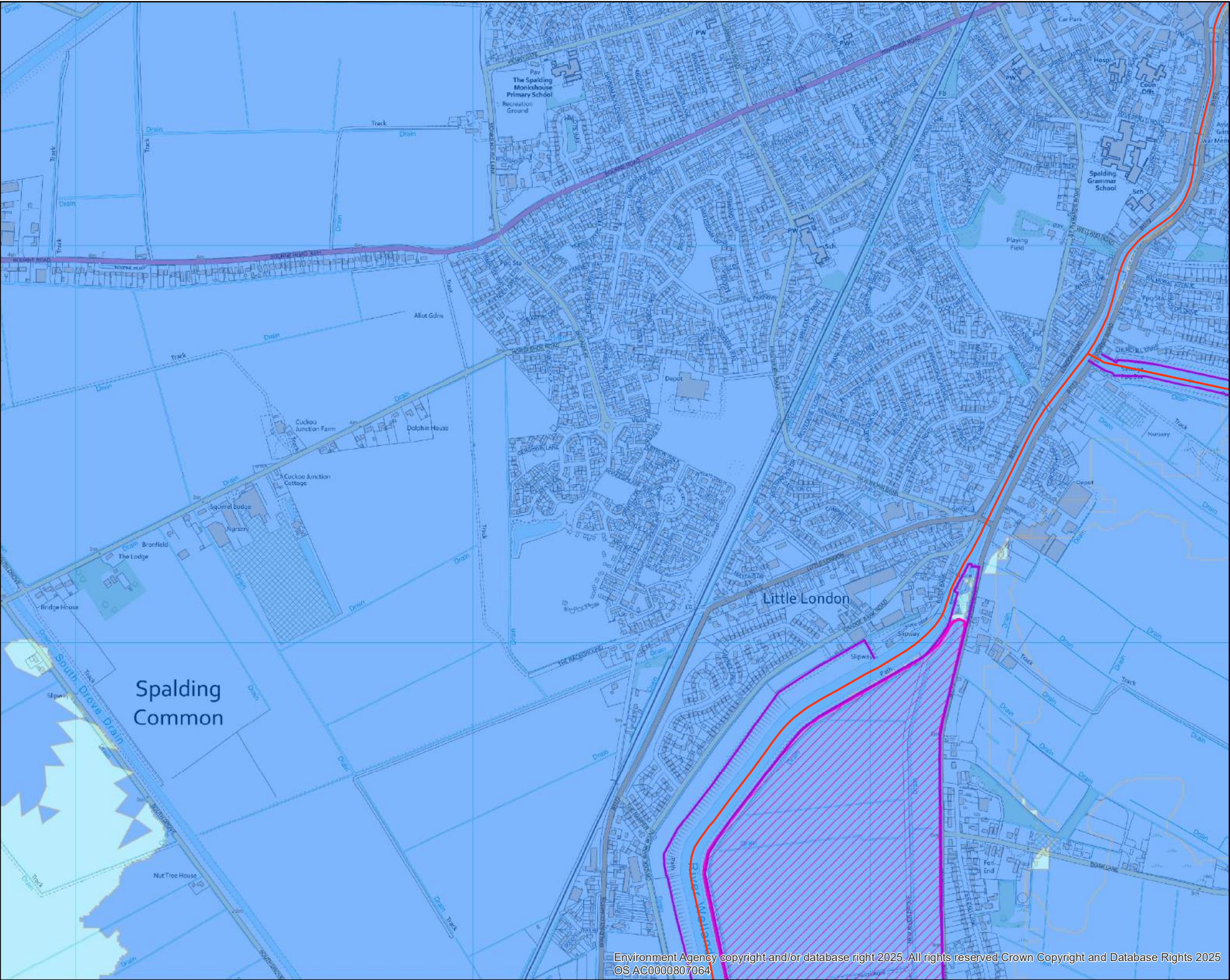
Recorded Flood Event Outlines Map

Modelled Node Points Map

Modelled Fluvial Levels and Flows Data Sheet

Modelled Flood Extent Maps

Flood Map centred on TF 23356 21384 - created January 2026 [Ref: EIR2026/02906]



Scale 1:10,000



Legend

- Main Rivers
- Raised Defences
- Flood Storage Areas

**Flood Zones 2 and 3 Rivers and Sea
Flood Zone**

- Flood Zone 2
- Flood Zone 3

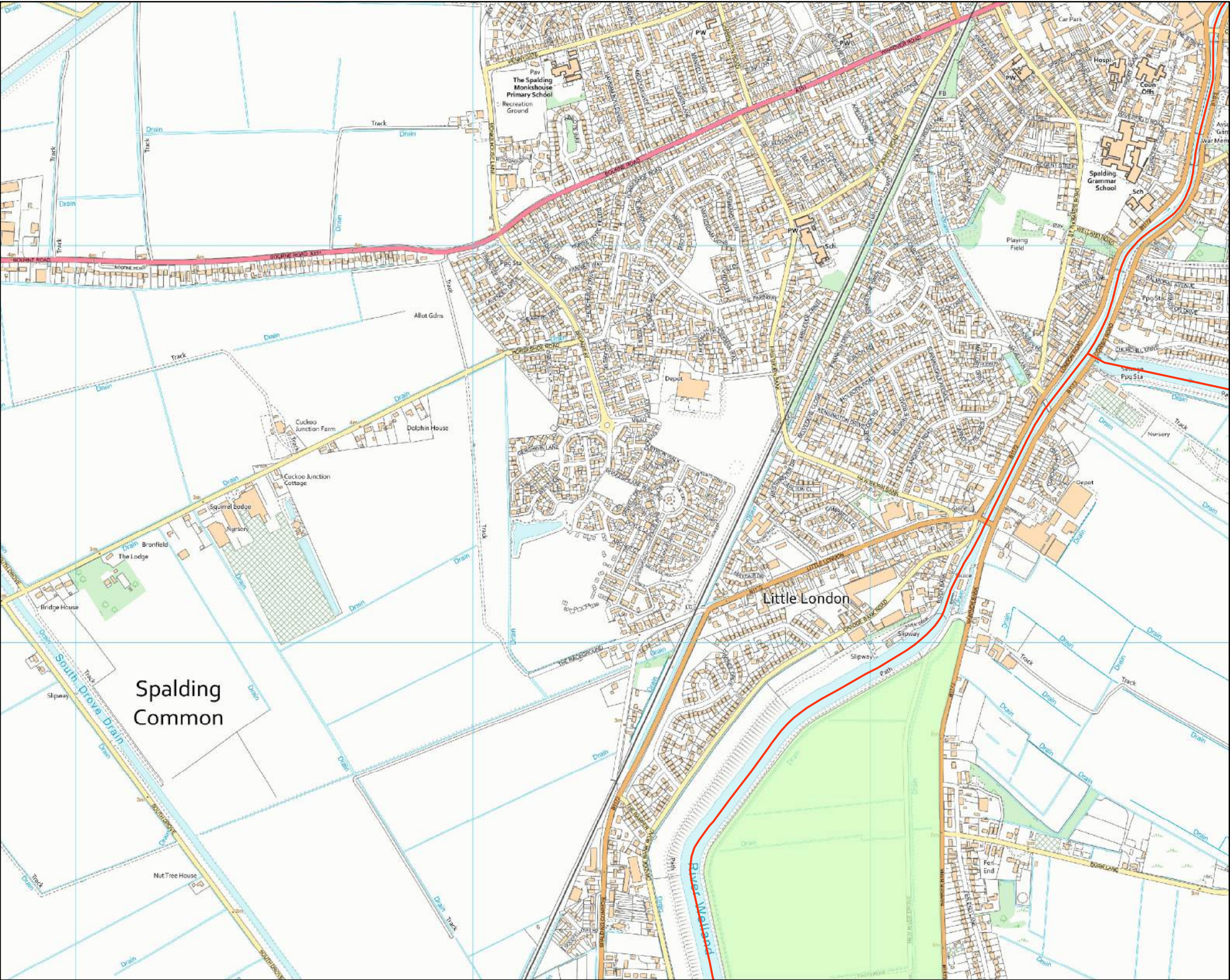
Dark blue shows the area that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This represents land that could be impacted by a flood which has a 1% (1 in 100) or greater chance of occurring in any year from rivers or 0.5% (1 in 200) or greater annual probability of flooding from the sea.

Light blue shows the extent of the Extreme Flood Outline. This represents land that could be impacted by a flood which has between a 1% and 0.1% (1 in 100 to 1 in 1000) chance of occurring in any year from rivers or between 0.5% and 0.1% (1 in 200 to 1 in 1000) annual probability of flooding from the sea, or the highest recorded historic extent if greater.

These two colours show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements. Sites outside the two extents, but behind raised defences, may be affected by flooding if the defences are overtopped or fail.

Created by the Partnerships and Strategic Overview Team, Kettering

Historic Flood Map centred on TF 23356 21384 - created January 2026 [Ref: EIR2026/02906]



Scale 1:10,000

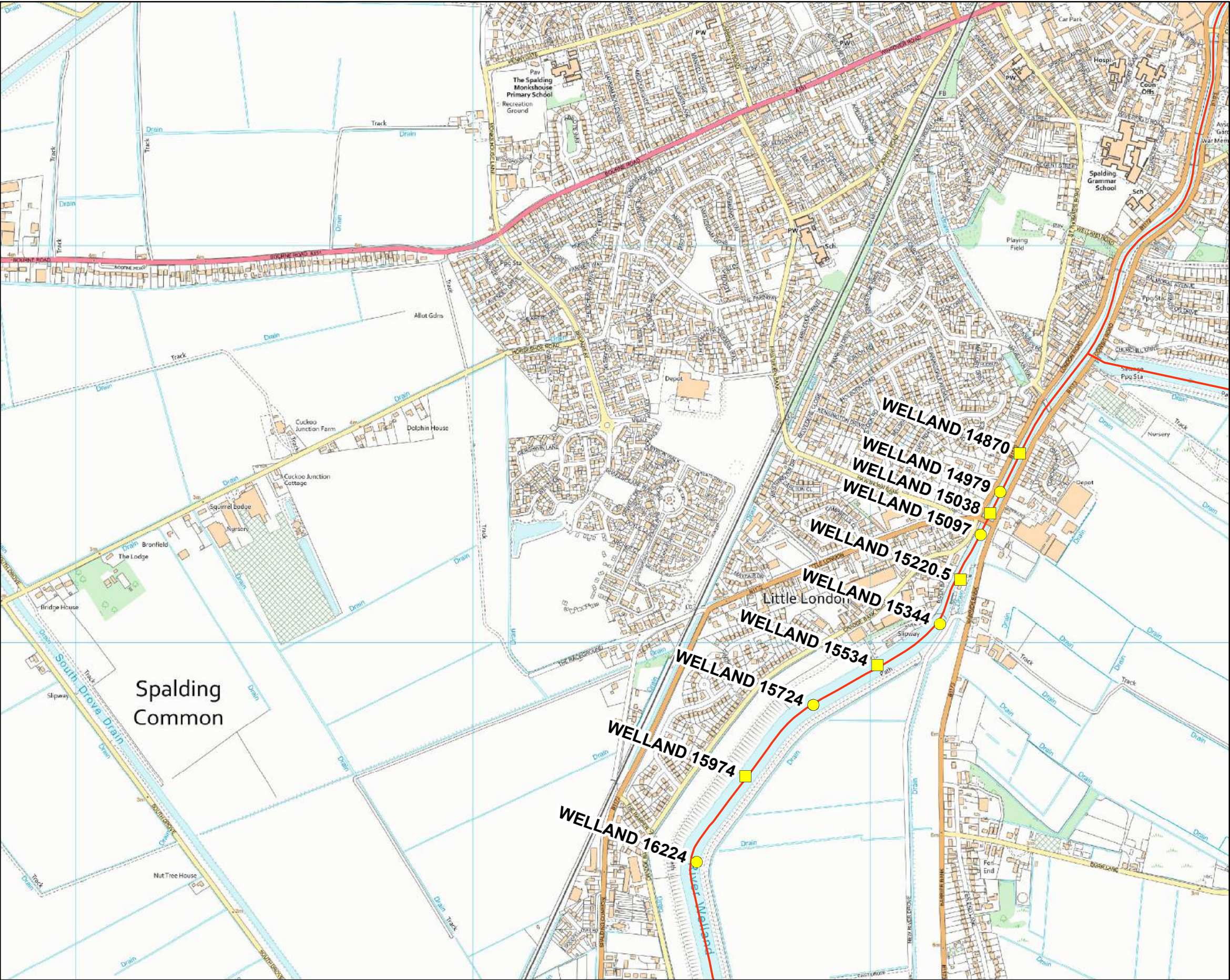


Legend

- Main Rivers
- Event name
- LNA_1947_March_River Welland_Crowland

Created by the Partnerships and Strategic Overview Team, Kettering

Modelled Levels and Flows Model: Welland Glen (2016)
centred on TF 23356 21384 - created January 2026 [Ref: EIR2026/02906]



Scale 1:10,000

N

Legend

- Modelled Flows
- Modelled Levels
- Main Rivers

Created by the Partnerships and Strategic Overview Team,
Kettering

Datasheet [Ref: EIR2026-02906]
Model Name: Welland Glen
Model Date: 2016

Fluvial Flood Levels (mODN)

The fluvial flood levels for the model nodes shown on the attached map are set out in the table below. They are measured in metres above Ordnance Datum Newlyn (mODN).

Newlyn (mODN).

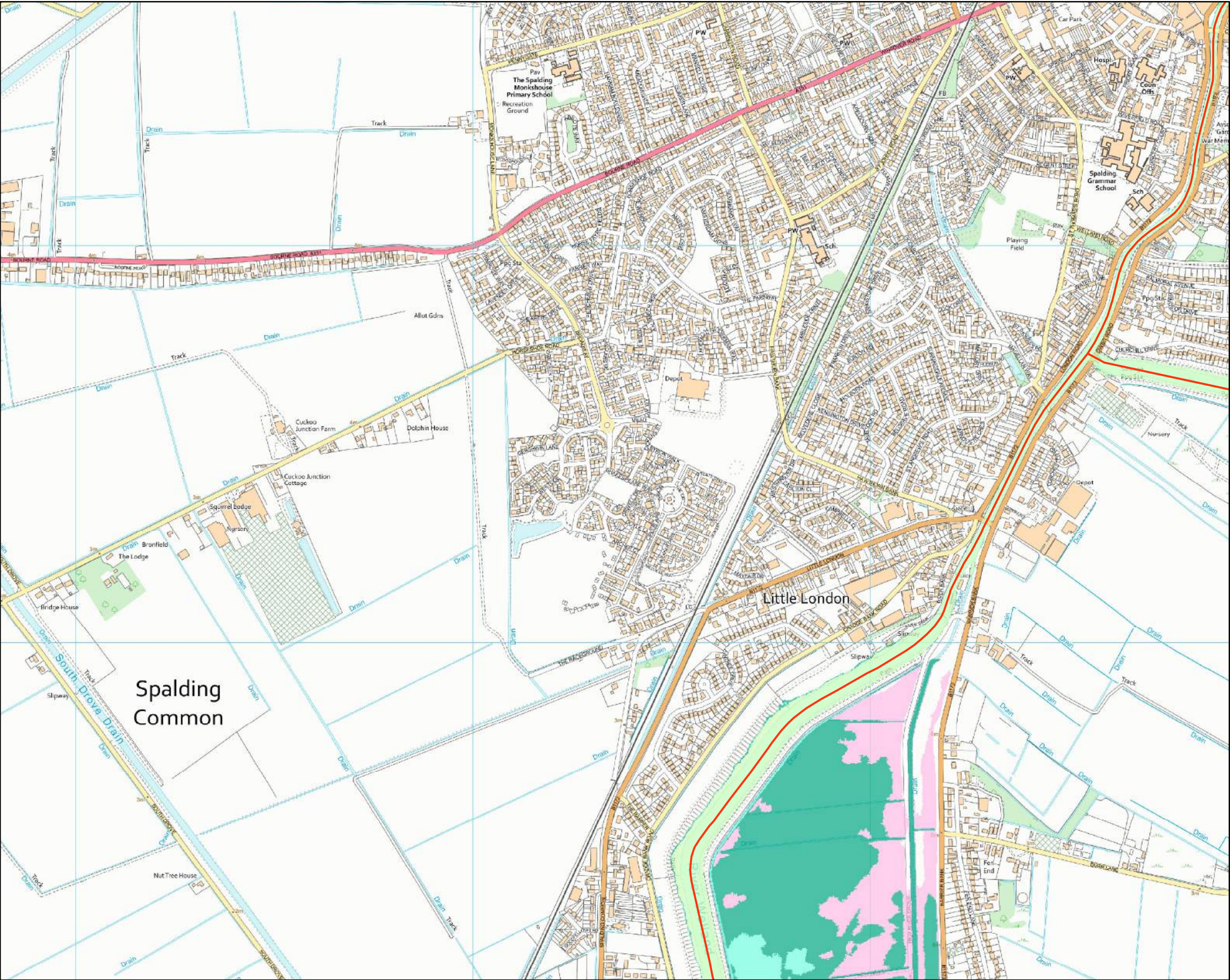
			Annual Exceedance Probability - Maximum Water Levels (mODN)											
Node Label	Easting	Northing	50% (1 in 2)	20% (1 in 5)	10% (1 in 10)	5% (1 in 20)	3.33% (1in 30)	2% (1 in 50)	1.33% (1 in 75)	1% (1 in 100)	1% (1 in 100) inc 20% Climate Change	0.5% in 200) (1	0.1% (1 in 1000)	0.1% (1 in 1000) inc 20% Climate Change
WELLAND 14979	524326	321381	3.68	3.96	4.16	4.42	4.47	4.48	4.49	4.49	4.67	4.51	4.53	4.67
WELLAND 15097	524276	321274	3.68	3.96	4.17	4.42	4.48	4.49	4.50	4.50	4.67	4.51	4.53	4.67
WELLAND 15344	524174	321050	3.68	3.96	4.17	4.43	4.49	4.51	4.51	4.51	4.66	4.52	4.54	4.67
WELLAND 15724	523856	320846	3.69	3.97	4.18	4.43	4.49	4.51	4.52	4.52	4.66	4.53	4.54	4.66
WELLAND 16224	523562	320451	3.70	3.98	4.18	4.43	4.50	4.52	4.53	4.53	4.66	4.53	4.55	4.66

Fluvial Flood Flows (m³/s)

The fluvial flood flows for the model nodes shown on the attached map are set out in the table below. They are measured in metres cubed per second (m³/s).

			Annual Exceedance Probability - Maximum Flows (m³/s)											
Node Label	Easting	Northing	50% (1 in 2)	20% (1 in 5)	10% (1 in 10)	5% (1 in 20)	3.33% (1in 30)	2% (1 in 50)	1.33% (1 in 75)	1% (1 in 100)	1% (1 in 100) inc 20% Climate Change	0.5% in 200)	0.1% (1 in 1000)	0.1% (1 in 1000) inc 20% Climate Change
WELLAND 14870	524374	321479	63.55	79.07	90.05	103.27	107.88	111.98	113.19	114.53	113.78	114.14	113.74	113.64
WELLAND 15038	524300	321328	63.43	78.96	89.95	103.18	107.81	111.98	113.18	114.52	113.77	114.14	113.73	113.64
WELLAND 15220.5	524226	321161	61.82	77.48	88.54	101.91	106.83	111.89	113.08	114.43	113.70	114.22	113.66	113.64
WELLAND 15534	524017	320946	61.39	77.08	88.13	101.52	106.55	111.86	113.06	114.41	113.72	114.28	113.66	113.64
WELLAND 15974	523684	320667	60.79	76.55	87.52	100.95	106.27	111.83	113.03	114.37	113.76	114.38	113.65	113.63

**Modelled Flood Extents (with defences) Model: Welland Glen (2016)
centred on TF 23356 21384 - created January 2026 [Ref: EIR2026/02906]**



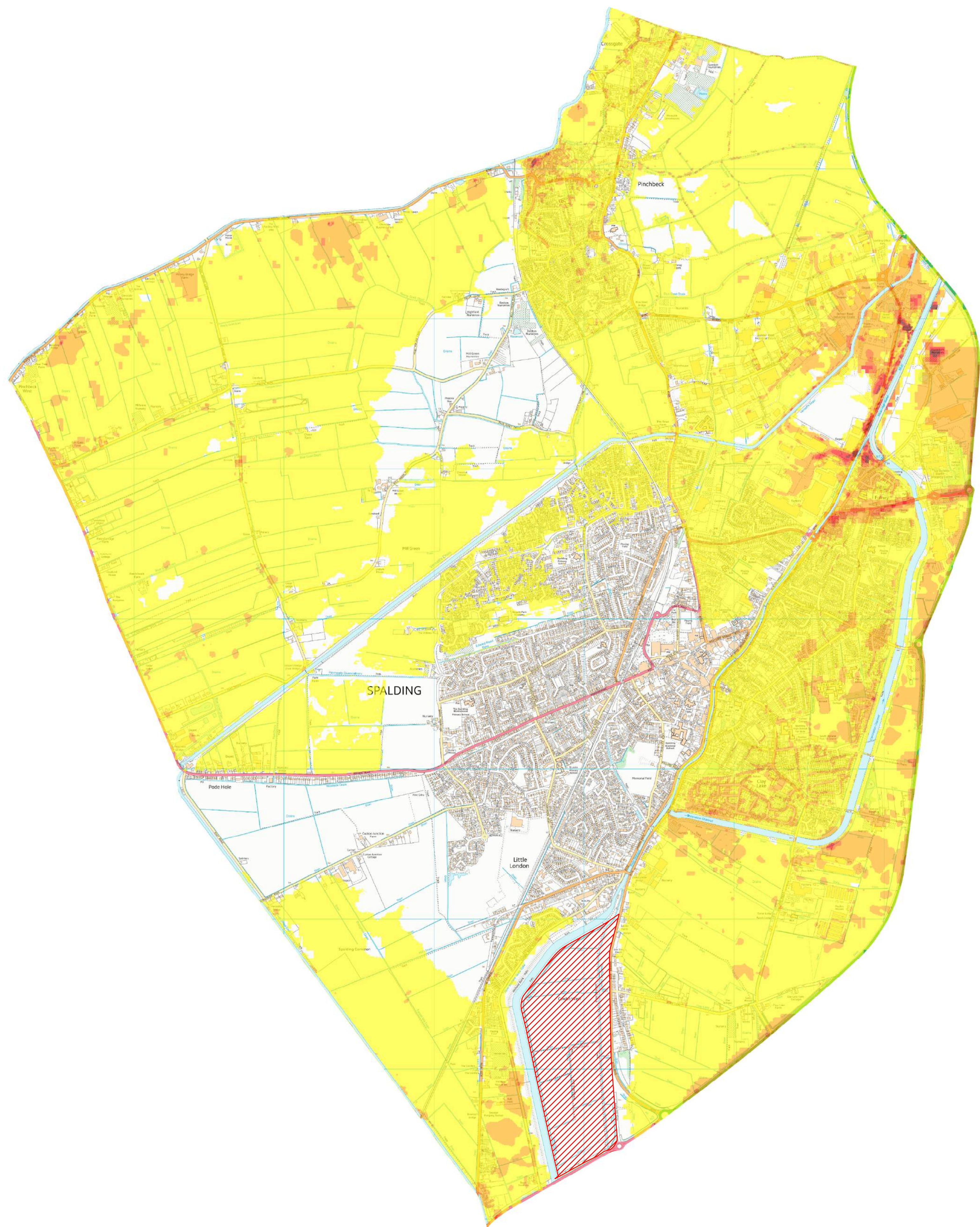
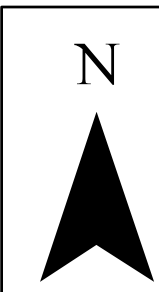
Scale 1:10,000



- Legend**
- Main Rivers
 - 3.33% (1 in 30) fluvial event
 - 1% (1 in 100) fluvial event
 - 1% (1 in 100) inc 20% climate change fluvial event
 - 0.1% (1 in 1000) fluvial event
 - 0.1% (1 in 1000) inc 20% climate change fluvial event

Created by the Partnerships and Strategic Overview Team,
Kettering

Appendix G – SFRA Hazard Maps



NOTES

1. The potential flooding consequences shown on this map primarily relate to flooding from the sea and main rivers taking into account the presence of current flood risk management measures such as flood defences.
2. This update only included new flood risk information from River Welland (Fluvial), River Glen (Fluvial) and Tidal hazard mapping (River Welland, River Nene and the Wash sea defences). No new information from the Internal Drainage Boards and associated systems was used for this update.
3. In addition to the potential flood extents shown on this map, there may be shallow flooding in low-lying rural areas
4. The consequences designated as being a Residual Risk arise from direct overtopping of defences, where this would occur, together with breach failure which is assumed could occur at any point along the defences.
5. Functional Floodplain encompasses areas where water is intended to flow or be stored in times of flood.
6. Land outside South Holland District is not considered.
7. This map shows the extents only of the flooding probability bands relevant to the map Title

Map Legend

Peak Velocity (metres per second)

- | | |
|---------------------------------|--|
| 0 - 0.3 | |
| 0.3 - 1 | |
| 1 - 1.5 | |
| 1.5 - 2.5 | |
| 2.5 + | |
| Functional Floodplain | |
| South Holland District Boundary | |

2	Feb 17	Modelling and Mapping Update
1	Dec 16	Modelling and Mapping Update
REV	DATE	REMARKS

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BRETTON
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TEL +44 (0)1733 334455
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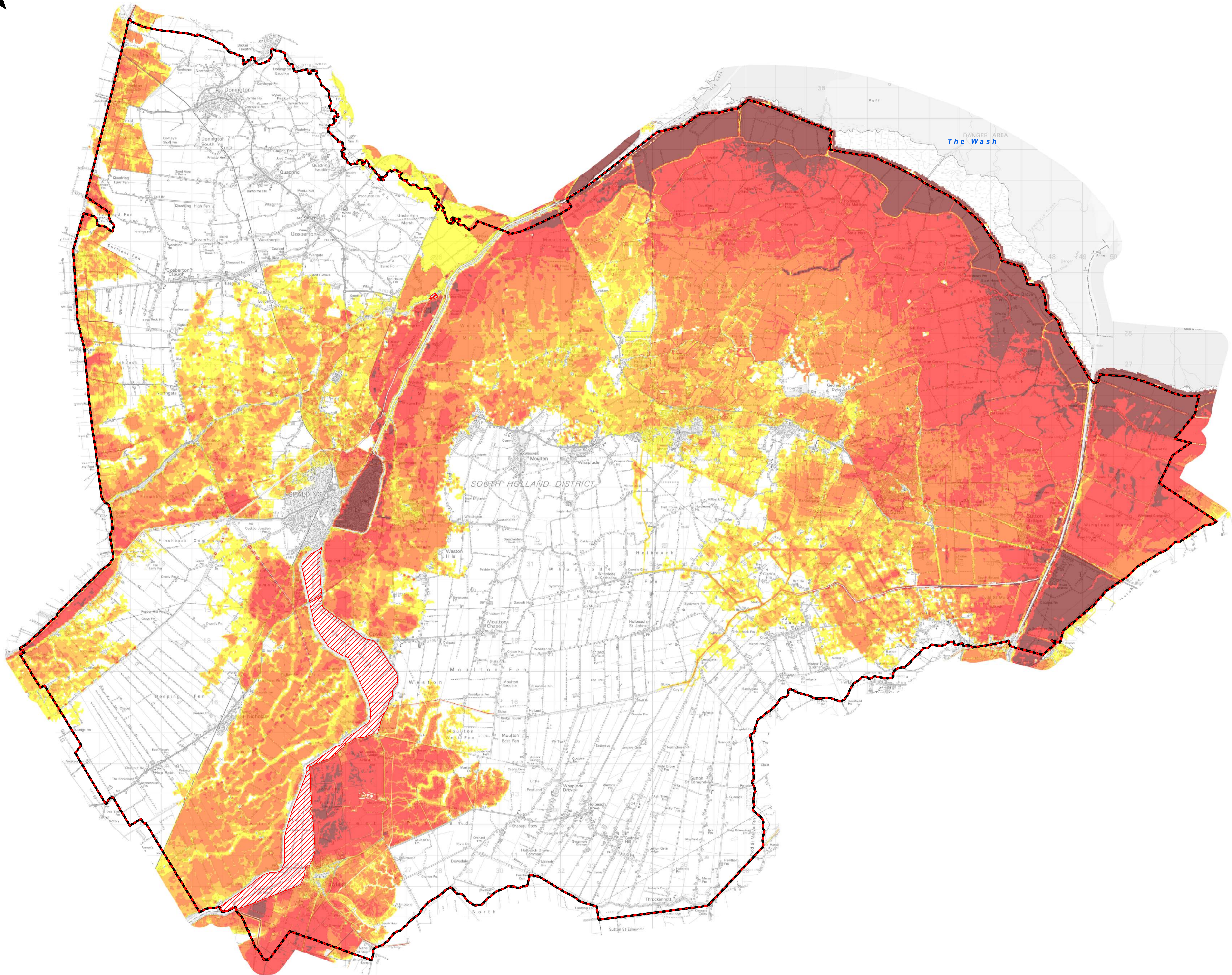


SOUTH HOLLAND DISTRICT COUNCIL
COUNCIL OFFICES
PRIORY ROAD
SPALDING
LINCOLNSHIRE
PE11 2XE

UPDATE OF STRATEGIC
FLOOD RISK ASSESSMENT

Residual Peak Velocity
Spalding - Year 2115
0.1% Event Probability

DATE OF ISSUE: Feb 2017	REV NO: 2
SCALE: 1 : 16,000 @ A1	MAP NO:



NOTES

1. The potential flooding consequences shown on this map primarily relate to flooding from the sea and main rivers taking into account the presence of current flood risk management measures such as flood defences.
2. This update only included new flood risk information from River Welland (Fluvial), River Glen (Fluvial) and Tidal hazard mapping (River Welland, River Nene and the Wash sea defences). No new information from the Internal Drainage Boards and associated systems was used for this update.
3. In addition to the potential flood extents shown on this map, there may be shallow flooding in low-lying rural areas
4. The consequences designated as being a Residual Risk arise from direct overtopping of defences, where this would occur, together with breach failure which is assumed could occur at any point along the defences.
5. Functional Floodplain encompasses areas where water is intended to flow or be stored in times of flood.
6. Land outside South Holland District is not considered.
7. This map shows the extents only of the flooding probability bands relevant to the map Title

Map Legend

Peak Depth	
0m - 0.25m	
0.25m - 0.5m	
0.5m - 1m	
1m - 2m	
2m +	
Functional Floodplain	
South Holland District Boundary	

2	Feb 17	Modelling and Mapping Update
1	Dec 16	Modelling and Mapping Update
REV	DATE	REMARKS

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SOUTH HOLLAND DISTRICT COUNCIL
COUNCIL OFFICES
PRIORY ROAD
SPALDING
LINCOLNSHIRE
PE11 2XE

UPDATE OF STRATEGIC
FLOOD RISK ASSESSMENT

Residual Peak Depth
District - Year 2115
1% Fluvial / 0.5% Tidal Event Probability

DATE OF ISSUE: Feb 2017		REV NO: 2
SCALE: 1 : 60,000 @ A1		MAP NO:

Appendix H - SFRA Standing Advice

	A	B	C	D	E	F	G	H
1	Glossary/Key							
2	Please refer to the National Planning Practice Guidance (Table 3) for advice on when the Sequential and Exception Tests are applicable	Environment Agency Environmental Permitting Regime distance - any works within 8m of fluvial Main River, or 16m of tidal defences (including culverting or control of flow of any river or stream)	Danger to ALL (Hazard Rating >2)	Danger to MOST (Hazard Rating 1.25 - 2)	Danger to SOME (Hazard Rating 0.75 - 1.25)	Low Hazard (Hazard Rating 0 - 0.75)	Flood Zone 3	Flood Zone 2
3	Water Compatible (excluding development that includes essential ancillary sleeping or residential accommodation)	Consult EA	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	No Comment	No Comment
4	Major & Non-major* 'Less Vulnerable' uses, e.g. commercial/industrial development	Consult EA	Consult EA	Appropriate Mitigation	Appropriate Mitigation	No Comment	No Comment	No Comment
5	Tidal Risk Scenario advice only. New short-let Camping and Caravan Sites (incl. log cabins & chalets) - subject to flood warning and evacuation plan	Consult EA	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation
6	Fluvial Risk Scenario advice only. New short-let Camping and Caravan Sites (incl. log cabins & chalets) - subject to flood warning and evacuation plan	Consult EA	EA OBJECTS to the principle of development due to risk to life	EA OBJECTS to the principle of development due to risk to life	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation
7	Change of Use - Less Vulnerable to More Vulnerable or within More Vulnerable category, involving increase in risk to people - <i>please see note for other categories & exclusions</i>	Consult EA	Consult EA	Consult EA	Appropriate mitigation	Appropriate mitigation	No Comment	No Comment
8	Non-major* 'More Vulnerable' uses, including residential development & residential holiday accom. (less than 10 dwellings/units or less than 0.5ha in size), <i>except short-let caravan sites - see A5 & A6 above</i>	Consult EA	Consult EA	Appropriate Mitigation	Appropriate Mitigation	Appropriate Mitigation	No Comment	No Comment
9	Major* 'More Vulnerable' uses including residential development & residential holiday accom (not including camping/caravan sites) - greater than 10 dwellings/units or 0.5ha in size	Consult EA	Consult EA	Consult EA	Consult EA	Consult EA	Consult EA	No Comment
10	Essential Infrastructure	Consult EA	Consult EA	Consult EA	Consult EA	Consult EA	Consult EA	No Comment
11	Highly Vulnerable' uses, e.g. caravans, mobile homes and park homes intended for permanent residential use - With the Exception of buildings and infrastructure explicitly for use in emergencies (which should be referred to the EA for bespoke advice)	Consult EA	Object - Contrary to NPPF	Object - Contrary to NPPF	Object - Contrary to NPPF	Object - Contrary to NPPF	Object - Contrary to NPPF	Consult EA
12	<i>* definition taken from T&CP Direction 2009</i>							

Cell: A1
Comment: NPPF - National Planning Policy Framework
NPPG - National Planning Practice Guidance
ST - National Planning Policy Framework Flood Risk Sequential Test
ET - National Planning Policy Framework Flood Risk Exception Test
EA - Environment Agency
SEL - South East Lincolnshire (incorporating Boston Borough Council & South Holland District Council)
SFRA - South East Lincolnshire Strategic Flood Risk Assessment
LPA - Local Planning Authority (Boston Borough Council/South Holland District Council as applicable)
LLFA - Lead Local Flood Authority (Lincolnshire County Council)
PD - Permitted Development
FFL - Finished Floor Level
GF - Ground Floor
ROY Zones - Red, Orange, Yellow Hazard Zones (Danger to All, Most & Some)
< - Less than
> - Greater than
NB: The advice in this matrix relates to flood risk from fluvial and tidal sources only. Applicants will need to discuss flooding from other sources with the relevant flood risk management authority.

The LPA is reminded that the advice contained in this matrix relates to flood resistance/resilience to built development. The LPA will still need to be satisfied with regard to the safety of people (including those with restricted mobility), the ability of such people to reach places of safety including safe refuges within buildings and the ability of the emergency services to access such buildings to rescue and evacuate those people, having regard to the Hazard Zone within which development proposals lie.

Cell: C2
Comment: This category includes potential flood depths of between 0.3m to >2.5m; and potential velocities of 0 to 5m/s.

Cell: D2
Comment: This category includes potential flood depths of between 0.2m to 2.0m; and potential velocities of 0 to 5m/s.

Cell: E2
Comment: This category includes potential flood depths of between 0.05m to 0.5m; and potential velocities of 0 to 5m/s.

Cell: F2
Comment: This category includes potential flood depths of between 0.5m to 0.25m; and potential velocities of 0 to 4m/s.

Cell: G2
Comment: This is the area comprising of land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. This does not consider the presence of defences.

Please note that this column relates to land within FZ3 that does not lie within any hazard zone. If the land lies within a hazard zone, please refer to the advice under the relevant hazard rating column

Cell: H2
Comment: This is the area comprising of land assessed as having between a 1 in 100 and a 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and a 1 in 1000 annual probability of flooding from the sea (0.5% - 0.1%) in any year. This does not consider the presence of defences.

Please note that this column relates to land within FZ2 that does not lie within any hazard zone. If the land lies within a hazard zone, please refer to the advice under the relevant hazard rating column

Cell: B3
Comment: Under the terms of the Environmental Permitting Regulations 2016 any proposed works or structures in, under, over or within 8 metres measured horizontally from the foot of any bank on the landward side, or where there is no bank, within 8 metres measured horizontally from the top edge of the batter enclosing a main river or within 16m of a tidal defence structure may need to obtain a permit from, or register an exemption with, the Environment Agency. The applicant is requested to contact the Environment Agency's Flood and Coastal Risk Management team on 03708 506 506 for further information. Please note that an Environment Agency permit/exemption may be required irrespective of any Town and Country Planning Act approvals/permissions.

The Environment Agency may also request the removal of some Permitted Development rights in this location.

Cell: C3
Comment: The Environment Agency recommends that the LPA checks the proposed development will operate under flood conditions (i.e. essential electrical equipment), and that appropriate mitigation measures/flood resilience techniques have been incorporated into the development. We recommend that essential equipment is set above the 0.1% breach event depth in the climate change (2115) scenario.

Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).

The Environment Agency OBJECTS to proposals, which include ground floor ancillary sleeping accommodation as an adequate standard of safety will not be achievable within the predicted flood depths as shown in the Strategic Flood Risk Assessment/Hazard Mapping.

Marina developments sometimes pose particular issues and we recommend direct consultation with the Environment Agency on such development for bespoke advice.

Cell: D3	
Comment: The Environment Agency recommends that the LPA checks the proposed development will operate under flood conditions (i.e. essential electrical equipment), and that appropriate mitigation measures/flood resilience techniques have been incorporated into the development. We recommend that essential equipment is set above the 0.1% breach event depth in the climate change (2115) scenario.	
	Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).
	The Environment Agency OBJECTS to proposals, which include ground floor ancillary sleeping accommodation as an adequate standard of safety will not be achievable within the predicted flood depths as shown in the Strategic Flood Risk Assessment/Hazard Mapping.
	Marina developments sometimes pose particular issues and we recommend direct consultation with the Environment Agency on such development for bespoke advice.
Cell: E3	
Comment: The Environment Agency recommends that the LPA checks the proposed development will operate under flood conditions i.e. essential electrical equipment, and that appropriate mitigation measures/flood resilience techniques have been incorporated into the development. We recommend that essential equipment is set above the 0.1% breach event depth in the climate change (2115) scenario.	
	Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).
	Marina developments sometimes pose particular issues and we recommend direct consultation with the Environment Agency on such development for bespoke advice.
Cell: F3	
Comment: The Environment Agency recommends that the LPA checks the proposal will operate under flood conditions i.e. essential electrical equipment, and that appropriate mitigation measures/flood resilience techniques have been incorporated into the development.	
	Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).
Cell: B4	
Comment: Under the terms of the Environmental Permitting Regulations 2016 any proposed works or structures in, under, over or within 8 metres measured horizontally from the foot of any bank on the landward side, or where there is no bank, within 8 metres measured horizontally from the top edge of the batter enclosing a main river or within 16m of a tidal defence structure may need to obtain a permit from, or register an exemption with, the Environment Agency. The applicant is requested to contact the Environment Agency's Flood and Coastal Risk Management team on 03708 506 506 for further information. Please note that an Environment Agency permit/exemption may be required irrespective of any Town and Country Planning Act approvals/permissions.	
Cell: C4	
Comment: The proposal must be referred to the Environment Agency with a supporting Flood Risk Assessment, which contains evidence to justify the chosen finished floor level. This should be raised as high as practicable (minimum 300mm above the existing ground level).	
	The Flood Risk Assessment should also include confirmation that appropriate mitigation measures/flood resilience techniques have been incorporated into the development.
	Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).
	Single storey buildings should be built with FFLs above the flood level (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map). If this is not practicable an area of safe refuge will need to be provided or an appropriate flood warning and evacuation plan will need to be submitted to and approved by the LPA.
	It is recommended that proposals are referred to the Environment Agency at the pre-application stage in the process.
Cell: D4	
Comment: The Environment Agency recommends that the following mitigation is incorporated into the development.	
	The finished floor levels should be raised as high as practicable (minimum 300mm above the existing ground level). The Environment Agency recommends that appropriate mitigation measures/flood resilience techniques are incorporated into the development. Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).
	Single storey buildings should be built with FFLs above the predicted flood depth (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map). If this is not practicable an area of safe refuge will need to be provided or an appropriate flood warning and evacuation plan will need to demonstrate how this risk will be managed. It is the responsibility of the Local Planning Authority to determine the adequacy of the plan.
Cell: E4	
Comment: The Environment Agency recommends that the following mitigation is incorporated into the development.	
	The finished floor levels should be raised as high as practicable (minimum 300mm above the existing ground level). The Environment Agency recommends that appropriate mitigation measures/flood resilience techniques are incorporated into the development. Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).

Single storey buildings should be built with FFLs above the predicted flood depth (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map). If this is not practicable an area of safe refuge should be provided or an appropriate flood warning and evacuation plan will need to demonstrate how this risk will be managed. It is the responsibility of the Local Planning Authority to determine the adequacy of the plan.

Cell: B5

Comment: Under the terms of the Environmental Permitting Regulations 2016 any proposed works or structures in, under, over or within 8 metres measured horizontally from the foot of any bank on the landward side, or where there is no bank, within 8 metres measured horizontally from the top edge of the batter enclosing a main river or within 16m of a tidal defence structure may need to obtain a permit from, or register an exemption with, the Environment Agency. The applicant is requested to contact the Environment Agency's Flood and Coastal Risk Management team on 03708 506 506 for further information. Please note that an Environment Agency permit/exemption may be required irrespective of any Town and Country Planning Act approvals/permissions.

Cell: C5

Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level.

The Environment Agency requires the imposition of the following condition:

CONDITION: No caravans/chalets/log cabins on the site shall be occupied between 1 November (or the following Sunday, if half terms extends into November) in any one year and 14 March in the succeeding year.

REASON: To reduce the impact of flooding.

If the application is for occupancy outside of these dates, please refer the application to the Environment Agency, together with the FRA, for site specific assessment of the risks and bespoke advice.

Cell: D5

Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level.

The Environment Agency requires the imposition of the following condition:

CONDITION: No caravans/chalets/log cabins on the site shall be occupied between 1 November (or the following Sunday, if half terms extends into November) in any one year and 14 March in the succeeding year.

REASON: To reduce the impact of flooding.

If the application is for occupancy outside of these dates, please refer the application to the Environment Agency, together with the FRA, for site specific assessment of the risks and bespoke advice.

Cell: E5

Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level.

The Environment Agency requires the imposition of the following condition:

CONDITION: No caravans/chalets/log cabins on the site shall be occupied between 1 November (or the following Sunday, if half terms extends into November) in any one year and 14 March in the succeeding year.

REASON: To reduce the impact of flooding.

If the application is for occupancy outside of these dates, please refer the application to the Environment Agency, together with the FRA, for site specific assessment of the risks and bespoke advice.

Cell: F5

Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level.

Cell: G5
Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level.

Cell: H5
Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level.

Cell: B6
Comment: Under the terms of the Environmental Permitting Regulations 2016 any proposed works or structures in, under, over or within 8 metres measured horizontally from the foot of any bank on the landward side, or where there is no bank, within 8 metres measured horizontally from the top edge of the batter enclosing a main river or within 16m of a tidal defence structure may need to obtain a permit from, or register an exemption with, the Environment Agency. The applicant is requested to contact the Environment Agency's Flood and Coastal Risk Management team on 03708 506 506 for further information. Please note that an Environment Agency permit/exemption may be required irrespective of any Town and Country Planning Act approvals/permissions.

Cell: C6
Comment: The Environment Agency OBJECTS to new short-let camping and caravan sites (incl. log cabins & chalets) in this hazard area as it is not possible to mitigate against the depths and/or velocity of flooding that could be experienced in this hazard category, which present a danger to all.

Cell: D6
Comment: The Environment Agency OBJECTS to new short-let camping and caravan sites (incl. log cabins & chalets) in this hazard area as it is not possible to mitigate against the depths and/or velocity of flooding that could be experienced in this hazard category, which present a danger to most.

Cell: E6
Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level.

Cell: F6
Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level.

Cell: G6
Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level.

Cell: H6
Comment: The NPPG requires that proposals for holiday or short-let caravans and camping sites are accompanied by a flood warning and evacuation plan, undertaken and agreed in consultation with the LPA's Emergency Planning Officer.

It is recommended that static caravans are secured to the ground using an adequate mechanism such as chains and ground anchors and the finished floor level set at a minimum 300mm above ground level..

Cell: A7
Comment: Please note change of use of land to caravan/camping sites are excluded from this category - see cells A5&A6 above for advice.

The EA makes 'no comments' to the following change of use applications (see NPPG Table 2 for Vulnerability Classification):
Water Compatible to Water Compatible;
Less Vulnerable use to Less Vulnerable use;
More Vulnerable use to Less Vulnerable use;
More Vulnerable use to More Vulnerable use - where there is no increase in risk to people (if this is not clear, please refer to the EA for bespoke advice)

All other change of use applications within the 'Danger to All' and 'Danger to Most' categories should be referred to the EA with a site specific FRA to obtain bespoke advice.

Cell: B7	
Comment: Under the terms of the Environmental Permitting Regulations 2016 any proposed works or structures in, under, over or within 8 metres measured horizontally from the foot of any bank on the landward side, or where there is no bank, within 8 metres measured horizontally from the top edge of the batter enclosing a main river or within 16m of a tidal defence structure may need to obtain a permit from, or register an exemption with, the Environment Agency. The applicant is requested to contact the Environment Agency's Flood and Coastal Risk Management team on 03708 506 506 for further information. Please note that an Environment Agency permit/exemption may be required irrespective of any Town and Country Planning Act approvals/permissions.	
	The Environment Agency may also request the removal of some Permitted Development rights in this location.
Cell: C7	
Comment:	The proposal should be referred to the Environment Agency with a supporting Flood Risk Assessment, which demonstrates that the proposal will be safe for its lifetime.
	The Environment Agency is likely to object to proposals including ground floor habitable accommodation.
	The FRA should aim to identify mitigation measures in line with those required for new build development of the same type, as far as this is practicable.
Cell: D7	
Comment: The proposal should be referred to the Environment Agency with a supporting Flood Risk Assessment, which demonstrates that the proposal will be safe for its lifetime.	
	The Environment Agency is likely to object to proposals including ground floor habitable accommodation.
	The FRA should aim to identify mitigation measures in line with those required for new build development of the same type, as far as this is practicable.
Cell: E7	
Comment: The Environment Agency recommends that the proposal is accompanied by a Flood Risk Assessment which confirms that appropriate mitigation measures/flood resilience techniques have been incorporated into the development up to the predicted flood level (see Max Depth Map for 2115 scenarios).	
	Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).
	The FRA should aim to identify mitigation measures in line with those required for new build development of the same type, as far as this is practicable.
	The Environment Agency OBJECTS to proposals which include self contained ground floor residential accommodation as an adequate standard of safety will not be achievable within the predicted flood depths as shown in the Strategic Flood Risk Assessment/Hazard Mapping. You may wish to refer applications that include self-contained ground flood residential accommodation to us for a bespoke response.
Cell: F7	
Comment: The Environment Agency recommends that the proposal is accompanied by a Flood Risk Assessment which confirms that appropriate mitigation measures/flood resilience techniques have been incorporated into the development up to the predicted flood level (see Max Depth Map for 2115 scenarios).	
	Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).
	The FRA should aim to identify mitigation measures in line with those required for new build development of the same type, as far as this is practicable.
Cell: A8	
Comment: Housing proposals will need to pass the flood risk Sequential Test as outlined in the NPPF & NPPG. To do this applicants will need to demonstrate that there is an identified need for the housing, which is not being met by those sites allocated in the Local Plan.	
	It is recommended that applicants discuss this with the relevant Planning Officer to ascertain the likelihood of the proposal passing the ST prior to working up a detailed planning application. In the event that the proposal passes the ST, an accompanying Flood Risk Assessment will also need to demonstrate that the proposal can be made safe for its lifetime, referring to the mitigation advice contained in this matrix.
Cell: B8	
Comment: Under the terms of the Environmental Permitting Regulations 2016 any proposed works or structures in, under, over or within 8 metres measured horizontally from the foot of any bank on the landward side, or where there is no bank, within 8 metres measured horizontally from the top edge of the batter enclosing a main river or within 16m of a tidal defence structure may need to obtain a permit from, or register an exemption with, the Environment Agency. The applicant is requested to contact the Environment Agency's Flood and Coastal Risk Management team on 03708 506 506 for further information. Please note that an Environment Agency permit/exemption may be required irrespective of any Town and Country Planning Act approvals/permissions.	
	The Environment Agency may also request the removal of some Permitted Development rights in this location.
Cell: C8	
Comment: The Environment Agency requires direct consultation on proposals in this hazard zone. The NPPF requires that proposals are accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures/flood resilience techniques have been incorporated into the development.	

The applicant is advised to refer to the following document for information on flood resilience and resistance techniques to be included: ‘Improving Flood Performance of New Buildings - Flood Resilient Construction’ (DCLG 2007).

Finished floor levels (FFL) should be informed by the predicted flood depth maps (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map) and set as required below (single storey proposals must use the 0.1% event, 2115 scenario, for setting FFLs):

depths of >1.6m
It is unlikely that mitigation measures would prevent flood water from entering the building at ground floor level. Therefore, proposals must have a minimum of 2 storeys with no ground floor habitable accommodation. The first floor living accommodation must be above the highest predicted flood depth. *

depths of 1-1.6m
Proposals must have a minimum of 2 storeys, with FFL set a minimum of 1m above existing ground level, flood resilient construction to a height 300mm above the predicted flood depth, and demountable defences to 600mm above FFL.

depths 0.5 - 1m
FFL must be set 1m above ground level, with flood resilient construction to a height of 300mm above the predicted flood depth.

depths of 0.25 - 0.5
FFL must be set 500mm above ground level, with flood resilient construction to a height 300mm above the predicted flood depth.

depths 0 - 0.25
FFL must be set 300mm above ground level.

* Where there is to be no ground floor habitable accommodation, the Environment Agency requires the imposition of the following conditions in order to ensure this space is not subsequently developed:

CONDITION
The ground floor[s] of the [property][properties][plot nos. *] hereby approved shall be used as [garage][WC][utility][bath/shower room] only and as annotated on approved drawings ***, and for no other habitable accommodation.

REASON
In accordance with the details of the application and to ensure that there is no sleeping or vulnerable living accommodation on the ground floor, in order to protect the inhabitants of the property from the risk of flooding in accordance with the NPPF.

CONDITION
Notwithstanding the provision of the Town and Country Planning (General Permitted Development) Order 1995 (or any order revoking and re-enacting that Order with or without modification), no extensions to provide additional habitable/living accommodation shall be erected [other than those expressly authorised by this permission].

REASON
To reduce the risk and impact of flooding.

Cell: D8
Comment: The NPPF requires that proposals are accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures/flood resilience techniques have been incorporated into the development.

Finished floor levels (FFL) should be informed by the predicted flood depth maps (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map) and set as required below (single storey proposals must use the 0.1% event, 2115 scenario, for setting FFLs):

depths of >1.6m
It is unlikely that mitigation measures would prevent flood water from entering the building at ground floor level. Therefore, proposals must have a minimum of 2 storeys with no ground floor habitable accommodation. The first floor living accommodation must be above the highest predicted flood depth. *

depths of 1-1.6m
Proposals must have a minimum of 2 storeys, with FFL set a minimum of 1m above existing ground level, flood resilient construction to a height 300mm above the predicted flood depth, and demountable defences to 600mm above FFL.

depths 0.5 - 1m
FFL must be set 1m above ground level, with flood resilient construction to a height of 300mm above the predicted flood depth.

depths of 0.25 - 0.5
FFL must be set 500mm above ground level, with flood resilient construction to a height 300mm above the predicted flood depth.

depths 0 - 0.25
FFL must be set 300mm above ground level.

* Where there is to be no ground floor habitable accommodation, the Environment Agency requires the imposition of the following conditions in order to ensure this space is not subsequently developed:

CONDITION
The ground floor[s] of the [property][properties][plot nos. *] hereby approved shall be used as [garage][WC][utility][bath/shower room] only and as annotated on approved drawings ***, and for no other habitable accommodation.

REASON
In accordance with the details of the application and to ensure that there is no sleeping or vulnerable living accommodation on the ground floor, in order to protect the inhabitants of the property from the risk of flooding in accordance with the NPPF.

CONDITION
Notwithstanding the provision of the Town and Country Planning (General Permitted Development) Order 1995 (or any order revoking and re-enacting that Order with or without modification), no extensions to provide additional habitable/living accommodation shall be erected

[other than those expressly authorised by this permission].

REASON
To reduce the risk and impact of flooding.

The applicant is advised to refer to the following document for information on flood resilience and resistance techniques to be included: ‘Improving Flood Performance of New Buildings - Flood Resilient Construction’ (DCLG 2007).

Cell: E8
Comment: The NPPF requires that proposals are accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures/flood resilience techniques have been incorporated into the development.

Finished floor levels (FFL) should be informed by the predicted flood depth maps (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map) and set as required below (single storey proposals must use the 0.1% event, 2115 scenario, for setting FFL):

depths of 0.25 - 0.5
FFL must be set 500mm above ground level, with flood resilient construction to a height 300mm above the predicted flood depth.

depths 0 - 0.25
FFL must be set 300mm above ground level.

The applicant is advised to refer to the following document for information on flood resilience and resistance techniques to be included: ‘Improving Flood Performance of New Buildings - Flood Resilient Construction’ (DCLG 2007).

Cell: F8
Comment: The NPPF requires that the proposal is accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures/flood resilience techniques have been incorporated into the development.

Please refer to the following document for information on flood resilience and resistance techniques to be included: ‘Improving Flood Performance of New Buildings - Flood Resilient Construction’ (DCLG 2007).

FFL must be set 300mm above ground level for two storey proposals. Single storey proposals must set FFLs above the 0.1% event breach depth in the 2115 scenario.

Cell: A9
Comment: Housing proposals will need to pass the flood risk Sequential Test as outlined in the NPPF & NPPG. To do this applicants will need to demonstrate that there is an identified need for the housing, which is not being met by those sites allocated in the Local Plan.

It is recommended that applicants discuss this with the relevant Planning Officer to ascertain the likelihood of the proposal passing the ST prior to working up a detailed planning application. In the event that the proposal passes the ST, an accompanying Flood Risk Assessment will also need to demonstrate that the proposal can be made safe for its lifetime, referring to the mitigation advice contained in this matrix.

Cell: B9
Comment: Under the terms of the Environmental Permitting Regulations 2016 any proposed works or structures in, under, over or within 8 metres measured horizontally from the foot of any bank on the landward side, or where there is no bank, within 8 metres measured horizontally from the top edge of the batter enclosing a main river or within 16m of a tidal defence structure may need to obtain a permit from, or register an exemption with, the Environment Agency. The applicant is requested to contact the Environment Agency's Flood and Coastal Risk Management team on 03708 506 506 for further information. Please note that an Environment Agency permit/exemption may be required irrespective of any Town and Country Planning Act approvals/permissions.

The Environment Agency may also request the removal of some Permitted Development rights in this location.

Cell: C9
Comment: The Environment Agency requires direct consultation on proposals in this hazard zone. The NPPF requires that proposals are accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures/flood resilience techniques have been incorporated into the development. The Environment Agency also wishes to be consulted on the Sequential Test evidence. Applicants will need to demonstrate that housing proposals are required to meet an identified local housing need.

The applicant is advised to refer to the following document for information on flood resilience and resistance techniques to be included: ‘Improving Flood Performance of New Buildings - Flood Resilient Construction’ (DCLG 2007).

Finished floor levels (FFL) should be informed by the predicted flood depth maps (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map) and set as required below (single storey proposals must use the 0.1% event, 2115 scenario, for setting FFLs):

depths of >1.6m
It is unlikely that mitigation measures would prevent flood water from entering the building at ground floor level. Therefore, proposals must have a minimum of 2 storeys with no ground floor habitable accommodation. The first floor living accommodation must be above the highest predicted flood depth. *

depths of 1-1.6m
Proposals must have a minimum of 2 storeys, with FFL set a minimum of 1m above existing ground level, flood resilient construction to a height 300mm above the predicted flood depth, and demountable defences to 600mm above FFL.

depths 0.5 - 1m
FFL must be set 1m above ground level, with flood resilient construction to a height of 300mm above the predicted flood depth.

depths of 0.25 - 0.5
FFL must be set 500mm above ground level, with flood resilient construction to a height 300mm above the predicted flood depth.

depths 0 - 0.25
FFL must be set 300mm above ground level.

* Where there is to be no ground floor habitable accommodation, the Environment Agency requires the imposition of the following conditions in order to ensure this space is not subsequently developed:

CONDITION
The ground floor[s] of the [property][properties][plot nos. *] hereby approved shall be used as [garage][WC][utility][bath/shower room] only and as annotated on approved drawings ***, and for no other habitable accommodation.

REASON
In accordance with the details of the application and to ensure that there is no sleeping or vulnerable living accommodation on the ground floor, in order to protect the inhabitants of the property from the risk of flooding in accordance with the NPPF.

CONDITION
Notwithstanding the provision of the Town and Country Planning (General Permitted Development) Order 1995 (or any order revoking and re-enacting that Order with or without modification), no extensions to provide additional habitable/living accommodation shall be erected [other than those expressly authorised by this permission].

REASON
To reduce the risk and impact of flooding.

The Flood Risk Assessment must also include details of surface water drainage arrangements and demonstrate that the proposal will not increase flood risk elsewhere - the LPA should seek the advice of the LLFA with respect to the adequacy of this element of the assessment.

Cell: D9
Comment: The Environment Agency requires direct consultation on proposals in this hazard zone. The NPPF requires that proposals are accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures/flood resilience techniques have been incorporated into the development. The Environment Agency also wish to be consulted on the Sequential Test evidence. Applicants will need to demonstrate that housing proposals are required to meet an identified local housing need.

The applicant is advised to refer to the following document for information on flood resilience and resistance techniques to be included: ‘Improving Flood Performance of New Buildings - Flood Resilient Construction’ (DCLG 2007).
Finished floor levels (FFL) should be informed by the predicted flood depth maps (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map) and set as required below (single storey proposals must use the 0.1% event, 2115 scenario, for setting FFLs):

depths of >1.6m
It is unlikely that mitigation measures would prevent flood water from entering the building at ground floor level. Therefore, proposals must have a minimum of 2 storeys with no ground floor habitable accommodation. The first floor living accommodation must be above the highest predicted flood depth. *

depths of 1-1.6m
Proposals must have a minimum of 2 storeys, with FFL set a minimum of 1m above existing ground level, flood resilient construction to a height 300mm above the predicted flood depth, and demountable defences to 600mm above FFL.

depths 0.5 - 1m
FFL must be set 1m above ground level, with flood resilient construction to a height of 300mm above the predicted flood depth.

depths of 0.25 - 0.5
FFL must be set 500mm above ground level, with flood resilient construction to a height 300mm above the predicted flood depth.

depths 0 - 0.25
FFL must be set 300mm above ground level.

* Where there is to be no ground floor habitable accommodation, the Environment Agency requires the imposition of the following conditions in order to ensure this space is not subsequently developed:

CONDITION
The ground floor[s] of the [property][properties][plot nos. *] hereby approved shall be used as [garage][WC][utility][bath/shower room] only and as annotated on approved drawings ***, and for no other habitable accommodation.

REASON
In accordance with the details of the application and to ensure that there is no sleeping or vulnerable living accommodation on the ground floor, in order to protect the inhabitants of the property from the risk of flooding in accordance with the NPPF.

CONDITION
Notwithstanding the provision of the Town and Country Planning (General Permitted Development) Order 1995 (or any order revoking and re-enacting that Order with or without modification), no extensions to provide additional habitable/living accommodation shall be erected [other than those expressly authorised by this permission].

REASON
To reduce the risk and impact of flooding.

The Flood Risk Assessment must also include details of surface water drainage arrangements and demonstrate that the proposal will not increase flood risk elsewhere - the LPA should seek the advice of the LLFA with respect to the adequacy of this element of the assessment.

Cell: E9
Comment: The Environment Agency requires direct consultation on proposals in this hazard zone. The NPPF requires that proposals are accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures/flood resilience techniques have been incorporated into the development. The Environment Agency also wishes to be consulted on the Sequential Test evidence. Applicants will need to demonstrate that housing proposals are required to meet an identified local housing need.

The applicant is advised to refer to the following document for information on flood resilience and resistance techniques to be included: ‘Improving Flood Performance of New Buildings - Flood Resilient Construction’ (DCLG 2007).

Finished floor levels (FFL) must be informed by the predicted flood depth maps (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map) and set as required below (Single storey proposals must use the 0.1% event, 2115 scenario, for setting FFL):

depths of 0.25 - 0.5

FFL must be set 500mm above ground level with flood resilient construction to a height 300mm above the predicted flood depth.
depths 0 - 0.25 FFL must be set 300mm above ground level.
The Flood Risk Assessment must also include details of surface water drainage arrangements and demonstrate that the proposal will not increase flood risk elsewhere - the LPA should seek the advice of the LLFA with respect to the adequacy of this element of the assessment.
Cell: F9 Comment: The Environment Agency requires direct consultation on proposals in this hazard zone. The NPPF requires that proposals are accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures/flood resilience techniques have been incorporated into the development.
The applicant is advised to refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).
Finished floor levels (FFL) must be informed by the predicted flood depth maps (refer to the relevant 2115 1% fluvial or 0.5% tidal Max Depth Map) and set as required below (single storey proposals must use the 0.1% event, 2115 scenario, for setting FFL).
depths 0 - 0.25 FFL must be set 300mm above ground level.
The Flood Risk Assessment must also include details of surface water drainage arrangements and demonstrate that the proposal will not increase flood risk elsewhere - the LPA should seek the advice of the LLFA with respect to the adequacy of this element of the assessment.
Cell: G9 Comment: The Environment Agency requires direct consultation on proposals in this flood zone. The NPPF requires that proposals are accompanied by a Flood Risk Assessment which contains evidence that appropriate mitigation measures/flood resilience techniques have been incorporated into the development.
The applicant is advised to refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).
Finished floor levels (FFL) should be set 300mm above ground level.
The Flood Risk Assessment must also include details of surface water drainage arrangements and demonstrate that the proposal will not increase flood risk elsewhere - the LPA should seek the advice of the LLFA with respect to the adequacy of this element of the assessment.
Cell: B10 Comment: Under the terms of the Environmental Permitting Regulations 2016 any proposed works or structures in, under, over or within 8 metres measured horizontally from the foot of any bank on the landward side, or where there is no bank, within 8 metres measured horizontally from the top edge of the batter enclosing a main river or within 16m of a tidal defence structure may need to obtain a permit from, or register an exemption with, the Environment Agency. The applicant is requested to contact the Environment Agency's Flood and Coastal Risk Management team on 03708 506 506 for further information. Please note that an Environment Agency permit/exemption may be required irrespective of any Town and Country Planning Act approvals/permissions.
The Environment Agency may also request the removal of some Permitted Development rights in this location.
Cell: C10 Comment: The application must be referred to the Environment Agency together with a supporting Flood Risk Assessment, which demonstrates that the proposal will remain operational during a 0.1% event (2115 scenario) and that appropriate mitigation measures/flood resilient construction techniques have been incorporated into the development.
Cell: D10 Comment: The application must be referred to the Environment Agency together with a supporting Flood Risk Assessment, which demonstrates that the proposal will remain operational during a 0.1% event (2115 scenario) and that appropriate mitigation measures/flood resilient construction techniques have been incorporated into the development.
Cell: E10 Comment: The application must be referred to the Environment Agency together with a supporting Flood Risk Assessment, which demonstrates that the proposal will remain operational during a 0.1% event (2115 scenario) and that appropriate mitigation measures/flood resilient construction techniques have been incorporated into the development.
Cell: F10 Comment: The application must be referred to the Environment Agency together with a supporting Flood Risk Assessment, which demonstrates that the proposal will remain operational during a 0.1% event (2115 scenario) and that appropriate mitigation measures/flood resilient construction techniques have been incorporated into the development.
Cell: G10 Comment: The application must be referred to the Environment Agency together with a supporting Flood Risk Assessment, which demonstrates that the proposal will remain operational during a 0.1% event (2115 scenario) and that appropriate mitigation measures/flood resilient construction techniques have been incorporated into the development.
Cell: B11 Comment: Under the terms of the Environmental Permitting Regulations 2016 any proposed works or structures in, under, over or within 8 metres measured horizontally from the foot of any bank on the landward side, or where there is no bank, within 8 metres measured horizontally from the top edge of the batter enclosing a main river or within 16m of a tidal defence structure may need to obtain a permit from, or register an exemption with, the Environment Agency. The applicant is requested to contact the Environment Agency's Flood and Coastal Risk Management team on 03708 506 506 for further information. Please note that an Environment Agency permit/exemption may be required irrespective of any Town and Country Planning Act approvals/permissions.

The Environment Agency may also request the removal of some Permitted Development rights in this location.

Cell: C11
Comment: In accordance with Table 3 of the NPPG, highly vulnerable uses are not appropriate in Flood Zone 3.
However, due to the extent of the Flood Zone along the coast, exceptions may be made for essential installations such as Police, Ambulance and Fire stations etc. Such proposals should be referred to the Environment Agency for bespoke advice at pre-application stage.

Cell: D11
Comment: In accordance with Table 3 of the NPPG, highly vulnerable uses are not appropriate in Flood Zone 3.
However, due to the extent of the Flood Zone along the coast, exceptions may be made for essential installations such as Police, Ambulance and Fire stations etc. Such proposals should be referred to the Environment Agency for bespoke advice at pre-application stage.

Cell: E11
Comment: In accordance with Table 3 of the NPPG, highly vulnerable uses are not appropriate in Flood Zone 3.
However, due to the extent of the Flood Zone along the coast, exceptions may be made for essential installations such as Police, Ambulance and Fire stations etc. Such proposals should be referred to the Environment Agency for bespoke advice at pre-application stage.

Cell: F11
Comment: In accordance with Table 3 of the NPPG, highly vulnerable uses are not appropriate in Flood Zone 3.
However, due to the extent of the Flood Zone along the coast, exceptions may be made for essential installations such as Police, Ambulance and Fire stations etc. Such proposals should be referred to the Environment Agency for bespoke advice at pre-application stage.

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Comment: In accordance with Table 3 of the NPPG, highly vulnerable uses are not appropriate in Flood Zone 3.
However, due to the extent of the Flood Zone along the coast, exceptions may be made for essential installations such as Police, Ambulance and Fire stations etc. Such proposals should be referred to the Environment Agency for bespoke advice at pre-application stage.

Cell: H11
Comment: The application should be referred to the Environment Agency together with a supporting Flood Risk Assessment, which demonstrates that with appropriate mitigation the proposal will be safe for its lifetime.

Please refer to the following document for information on flood resilience and resistance techniques to be included: 'Improving Flood Performance of New Buildings - Flood Resilient Construction' (DCLG 2007).

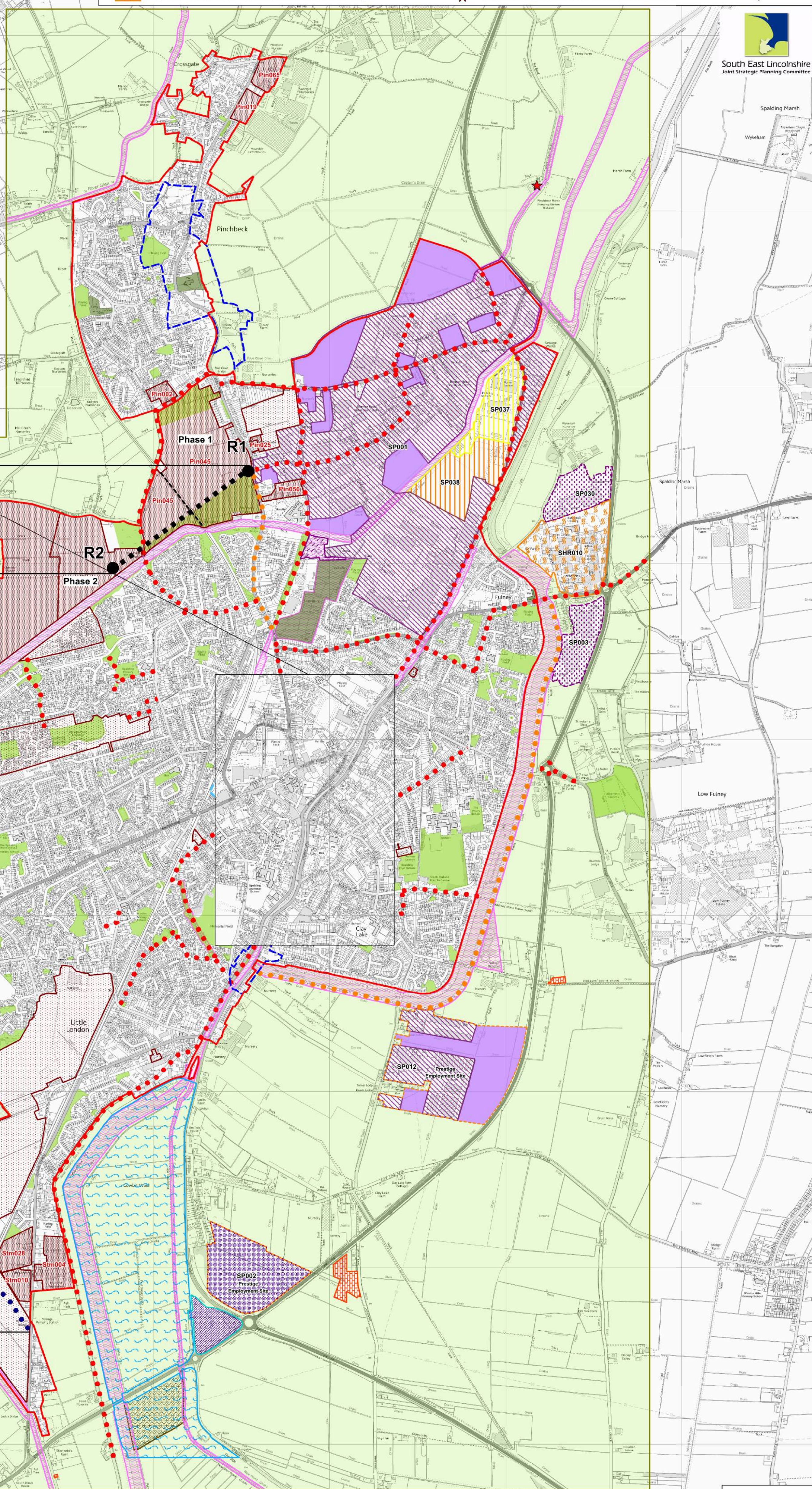
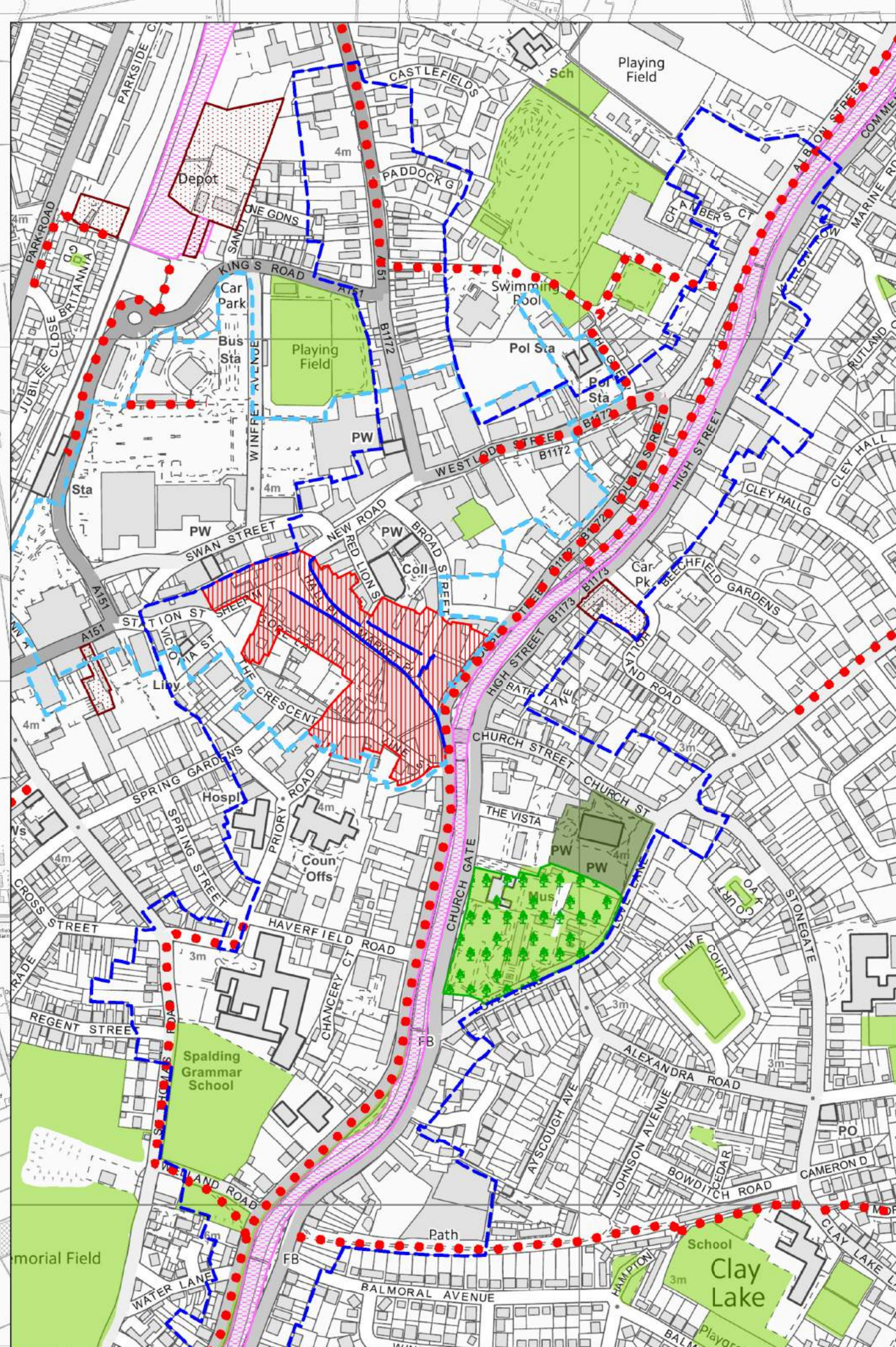
Appendix I – Local Plan Maps

Policies Map Inset Map No 2

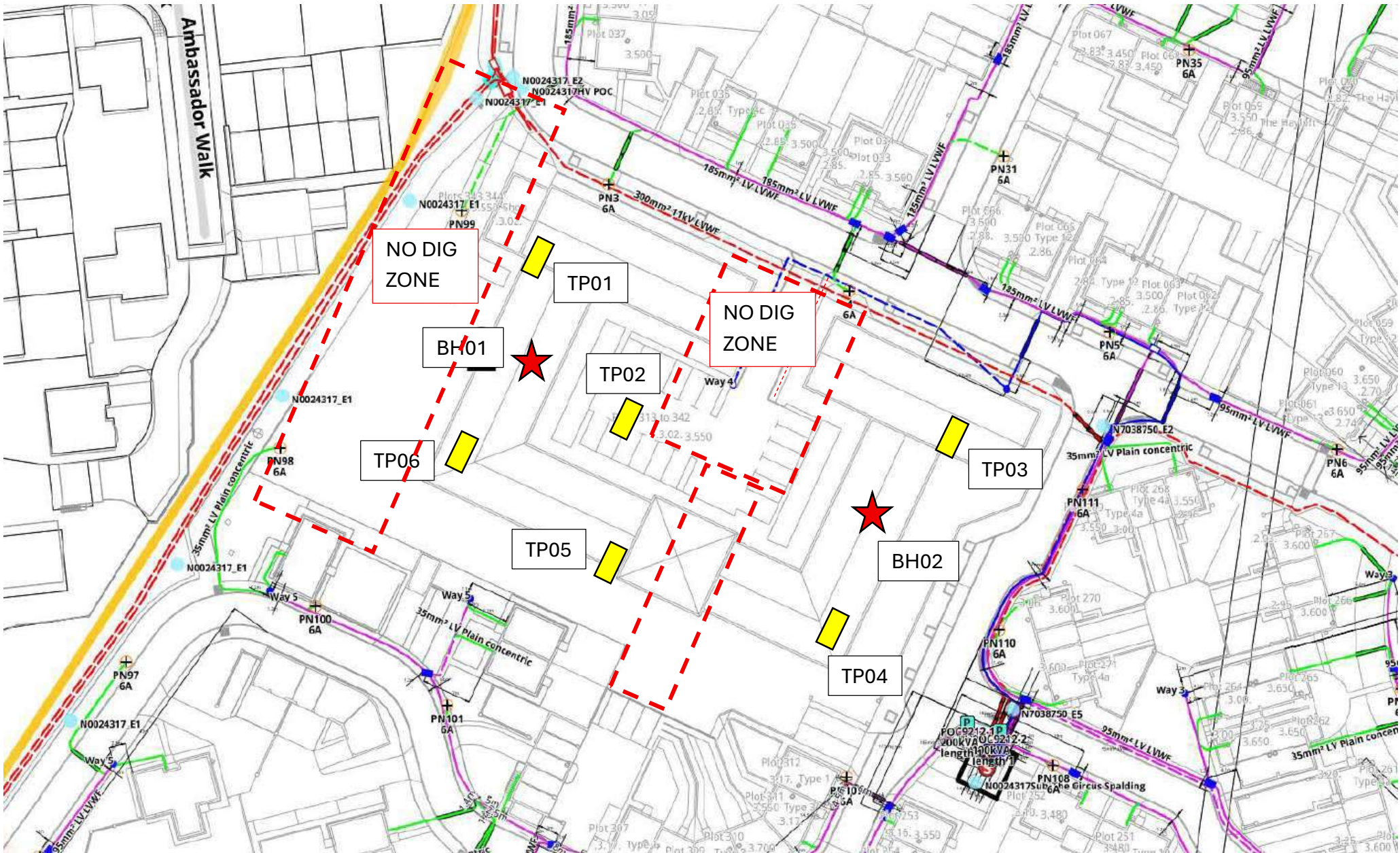
Sub Regional Centre & Main Service Centre

	Inset Map Boundary	
	Countryside.....	Policy 1,9,19,22,23
	Settlement Boundary.....	Policy 1,19,22,23
	Town Centre Boundary.....	Policy 24,25,26,27
	Conservation Area.....	Policy 29
	Housing Commitment.....	Policy 11
	Housing Allocation.....	Policy 11,15
	Existing Residential Gypsy/Traveller Site.....	Policy 20
	Existing Main Employment Area.....	Policy 7
	Proposed Main Employment Area.....	Policy 7
	Established Employment Site.....	Policy 7
	Existing Mixed Use Employment Site.....	Policy 7
	Proposed Mixed Use Employment Site.....	Policy 7
	Existing Restricted Use Site.....	Policy 7
	Proposed Restricted Use Site.....	Policy 7
	Prestige Employment Site.....	Policy 8
	Proposed Education Facilities.....	Policy 5

	Springfields Shopping and Festival Gardens.....	Policy 9.27
	Primary Shopping Area.....	Policy 24.26
	Primary Shopping Frontage	Policy 26
	SSSI.....	Policy 28
	Local Wildlife Site.....	Policy 28
	Local Nature Reserve.....	Policy 28
	Flood Storage Area.....	Policy 4
	Recreational Open Space.....	Policy 32
	Green Infrastructure.....	Policy 32
	Historic Park and Garden.....	Policy 29
	Section 1 (Southern Section) of SWRR : Indicative Road Line.....	Policy 15.33
	Extend SWRR Safeguarding Corridor to the north of Site Mon008.....	Policy 15.33
	Section 5 (Northern Section) of SWRR : Indicative Road Line.....	Policy 15.33
	Roundabout 1.....	Policy 15.33
	Roundabout 2.....	Policy 15.33
	Extent of SWRR Delivery Strategy Sections.....	Policy 15.33
	Cycle Route.....	Policy 33
	Proposed Cycle Route.....	Policy 33
	Ancient Monument.....	Policy 29



Appendix J – SI logs





Falling Head Test

Borehole No. : BH01

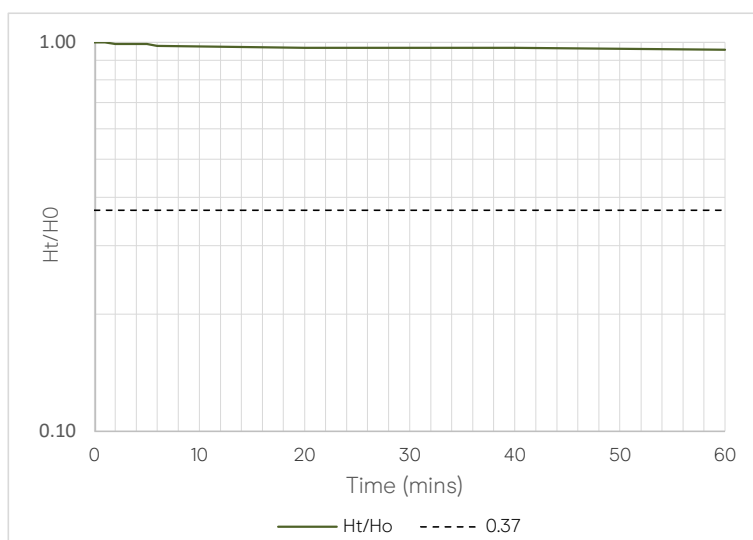
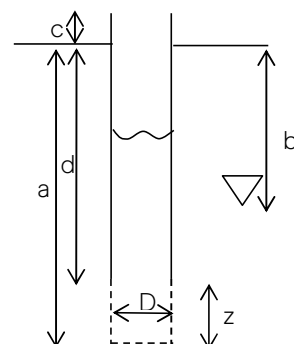
Soil Profile:

Depth (m)		Description
From:	To:	
0.00	0.40	MADE GROUND: Soft brown TOPSOIL
0.40	2.00	Soft orange brown CLAY/SILT
2.00	4.00	Soft greyish brown CLAY/SILT

Full Soil Logs are available within Appendix I.

a	Depth of Borehole during test	4.000 m
b	Depth to Equilibrium water table	1.900 m
c	Depth of casing above ground level	0.000 m
d	Depth of casing below ground level	1.000 m
Z	Length of response zone	0.900 m
D	Diameter of response zone	0.05 m
F	Intake Factor	1.578

(from Condition D of BS5930:1999, Section 4, Figure 6)



Time (minutes)	Head of water (m)	Ht/Ho
0.0	0.900	1.000
1.0	0.900	1.000
2.0	0.890	0.989
3.0	0.890	0.989
4.0	0.890	0.989
5.0	0.890	0.989
6.0	0.880	0.978
20.0	0.870	0.967
40.0	0.870	0.967
60.0	0.860	0.956

PERMEABILITY

After Hvorslev 1951 - Basic Time Lag Approach

$k = A/60FT$ m/sec, where

Cross sectional area	A = 0.0019638	m ²
Intake Factor	F = 1.578	
Time taken to cross Ht/H0	T = 2168*	mins

Permeability $k = 9.6E-09$ m/sec

* T is an estimated extrapolation based on the final change in time and depth between final test results between 20 and 60 minutes

Job No.: 102378
 Site: Holland Park, Spalding
 Client: Country Court Care Group

 **Dice**
 Environmental

Falling Head Test

Borehole No. : BH02

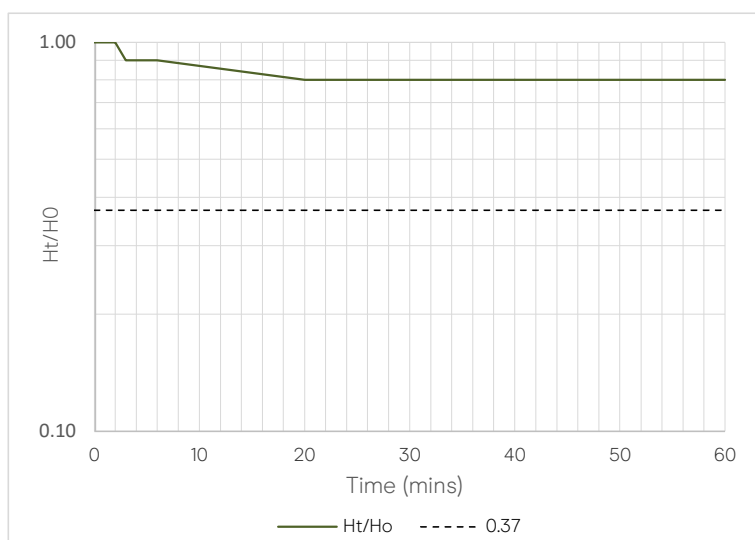
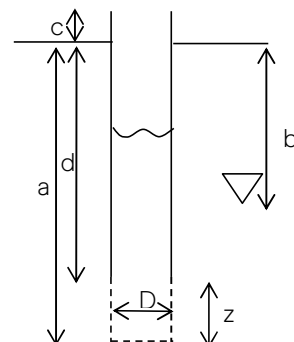
Soil Profile:

Depth (m)		Description
From:	To:	
0.00	0.40	MADE GROUND: Soft brown TOPSOIL
0.40	2.00	Soft orange brown CLAY/SILT
2.00	3.60	Soft greyish brown CLAY/SILT
3.60	4.00	Loose dark brown clayey silty fine SAND

Full Soil Logs are available within Appendix I.

a	Depth of Borehole during test	4.000 m
b	Depth to Equilibrium water table	1.100 m
c	Depth of casing above ground level	0.000 m
d	Depth of casing below ground level	1.000 m
Z	Length of response zone	0.100 m
D	Diameter of response zone	0.05 m
F	Intake Factor	0.435

(from Condition D of BS5930:1999, Section 4, Figure 6)



Time (minutes)	Head of water (m)	Ht/Ho
0.0	0.100	1.000
1.0	0.100	1.000
2.0	0.100	1.000
3.0	0.090	0.900
4.0	0.090	0.900
5.0	0.090	0.900
6.0	0.090	0.900
20.0	0.080	0.800
40.0	0.080	0.800
60.0	0.080	0.800

PERMEABILITY

After Hvorslev 1951 - Basic Time Lag Approach

$k = A/60FT$ m/sec, where

Cross sectional area	A = 0.0019638	m ²
Intake Factor	F = 0.435	
Time taken to cross Ht/Ho	T = 2640*	mins

Permeability $k = 2.8E-08$ m/sec

* T is an estimated extrapolation based on the final change in time and depth between final test results between 10 and 60 minutes

Job No.: 102378
 Site: Holland Park, Spalding
 Client: Country Court Care Group

 **Dice**
 Environmental

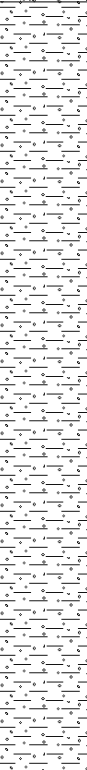
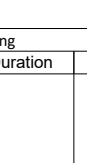
Percussion Drilling Log

Project Name: Holland Park, Spalding		Client: Country Court Care Group		Date: 04/03/2026 - 05/03/2026	
Location: Shakespeare Way, Spalding, PE11 1UZ		Contractor:		Co-ords: E523338.00 N321401.00	
Project No. : 102378		Crew Name: Borehole Solutions		Drilling Equipment: Sonic Fraste ML	
Borehole Number BH01	Hole Type SNC	Level	Logged By MD	Scale 1:50	Page Number Sheet 1 of 3

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10			MADE GROUND: Brown slightly clayey silty slightly gravelly TOPSOIL. Gravel is fine to coarse angular to subangular flint and chalk.	
		0.40			0.40			MADE GROUND: Light brown slightly sandy slightly gravelly SILT. Gravel is fine to coarse angular flint, chalk and brick.	
		1.20	D		1.20			Brown clayey slightly sandy SILT with rare chalk and flint gravels.	1
		1.20	SPT	N=5 (1,1/2,1,1,1)	1.20			Brownish grey clayey SILT.	
		2.00	SPT						
		2.00	SPT	N=5 (1,1/1,1,2,1)					2
		2.50	D						
		3.00	B		3.00			Dark grey slightly sandy SILT.	3
		3.00	D						
		3.00	SPT	N=5 (1,1/2,1,1,1)					
		3.00	SPT						
		4.00	D						
		4.00	SPT						
		4.00	SPT	N=4 (1,1/1,1,1,1)					4
		5.00	D						
		5.00	SPT						
		5.00	SPT	N=1 (1,0/1,0,0,0)					5
		6.00	D						
		6.50	SPT		6.50			Brownish grey silty fine to medium SAND.	
		6.50	SPT	N=2 (1,0/1,0,1,0)					7
		7.50	D						
		8.00	SPT						
		8.00	SPT	N=6 (1,1/2,1,1,2)					8
		9.00	D						
		9.50	SPT						
		9.50	SPT	N=8 (1,2/2,2,1,3)					9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Made ground present to 0.40mbgl. 2. Groundwater identified at 3.00mbgl. 3. Borehole installed with a monitoring well upon completion.										
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		Percussion Drilling Log													
Project Name: Holland Park, Spalding				Client: Country Court Care Group				Date: 04/03/2026 - 05/03/2026							
Location: Shakespeare Way, Spalding, PE11 1UZ				Contractor:				Co-ords: E523338.00 N321401.00							
Project No. : 102378				Crew Name: Borehole Solutions				Drilling Equipment: Sonic Fraste ML							
Borehole Number BH01		Hole Type SNC		Level		Logged By MD		Scale 1:50		Page Number Sheet 2 of 3					
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description							
		Depth (m)	Type	Results											
		10.50	D	N=9 (1,2/2,2,2,3)	12.50		Brownish grey silty fine to medium SAND.		11						
		11.00	SPT												
		11.00	SPT												
		12.00	D												
		12.50	SPT												
		12.50	SPT												
		13.50	B	N=16 (2,3/3,4,4,5)	14.90		Greyish brown slightly silty gravelly to very gravelly SAND. Gravel is fine to coarse angular to subrounded chalk and flint. Sand is fine to medium.	13							
		13.50	D												
		15.00	D												
		15.00	U												
		16.50	D												
		17.00	SPT												
		17.00	SPT	N=43 (6,7/10,10,11,12)		Grey / dark grey slightly gravelly CLAY. Gravel is fine to coarse angular to subangular chalk, flint and occasional flint cobbles.	15								
18.00	D														
18.50	D														
18.50	SPT														
19.50	D														
20.00	SPT														
20.00	SPT	N=44 (7,7/10,11,11,12)	20.00			20									
Hole Diameter		Casing Diameter					Chiselling			Inclination and Orientation					
Depth Base	Diameter	Depth Base					Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks															
1. Made ground present to 0.40mbgl.															
2. Groundwater identified at 3.00mbgl.															
3. Borehole installed with a monitoring well upon completion.															

		Percussion Drilling Log									
Project Name: Holland Park, Spalding				Client: Country Court Care Group				Date: 04/03/2026 - 05/03/2026			
Location: Shakespeare Way, Spalding, PE11 1UZ				Contractor:				Co-ords: E523338.00 N321401.00			
Project No. : 102378				Crew Name: Borehole Solutions				Drilling Equipment: Sonic Fraste ML			
Borehole Number BH01		Hole Type SNC		Level		Logged By MD		Scale 1:50		Page Number Sheet 3 of 3	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		20.00	SPT	N=46 (6,7/11,12,11,12)				End of Borehole at 20.00m			
											21
											22
											23
											24
											25
											26
											27
											28
											29
											30
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Made ground present to 0.40mbgl.											
2. Groundwater identified at 3.00mbgl.											
3. Borehole installed with a monitoring well upon completion.											

Percussion Drilling Log

Project Name: Holland Park, Spalding		Client: Country Court Care Group		Date: 05/03/2026 - 06/03/2026	
Location: Shakespeare Way, Spalding, PE11 1UZ		Contractor:		Co-ords: E523385.00 N321378.00	
Project No. : 102378		Crew Name: Borehole Solutions		Drilling Equipment: Sonic Fraste ML	
Borehole Number BH02	Hole Type SNC	Level	Logged By MD	Scale 1:50	Page Number Sheet 1 of 3

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10			MADE GROUND: Brown slightly clayey silty slightly gravelly TOPSOIL. Gravel is fine to coarse angular to subangular flint and chalk.	
		0.40			0.40			MADE GROUND: Light brown slightly sandy slightly gravelly SILT. Gravel is fine to coarse angular flint, chalk and brick.	
		1.00			1.00			MADE GROUND: Brown slightly clayey slightly sandy SILT. Orangish brown slightly clayey slightly sandy SILT.	1
		1.20	SPT		1.20				
		1.20	SPT	N=3 (1,1/1,0,1,1)	1.20				
		1.80	D		1.80				
		2.00	B		2.00				
		2.00	SPT		2.00				
		2.00	SPT	N=4 (1,2/1,1,1,1)	2.00				
		2.50	D		2.50				
		3.00	SPT		3.00				
		3.00	SPT	N=5 (1,0/1,2,1,1)	3.00				3
		3.50	D		3.50				
		4.00	SPT		4.00				
		4.00	SPT	N=2 (1,0/1,0,1,0)	4.00				4
		4.50	D		4.50				
		5.00	B		5.00				
		5.00	SPT		5.00				5
		5.00	SPT	N=5 (1,2/1,1,2,1)	5.00				
		6.00	D		6.00				6
		6.50	D		6.50				
		6.50	SPT		6.50				
		6.50	SPT	N=5 (1,2/2,1,1,1)	6.50				7
		7.50	D		7.50				
		8.00	SPT		8.00				
		8.00	SPT	N=8 (1,2/2,2,1,3)	8.00				8
		9.00	D		9.00				9
		9.50	SPT		9.50				
		9.50	SPT	N=10 (2,2/1,3,3,3)	9.50				10
		10.00			10.00				

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Made ground present to 0.40mbgl. 2. Groundwater identified at 3.00mbgl. 3. Borehole installed with a monitoring well upon completion.										
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		Percussion Drilling Log									
Project Name: Holland Park, Spalding				Client: Country Court Care Group				Date: 05/03/2026 - 06/03/2026			
Location: Shakespeare Way, Spalding, PE11 1UZ				Contractor:				Co-ords: E523385.00 N321378.00			
Project No. : 102378				Crew Name: Borehole Solutions				Drilling Equipment: Sonic Fraste ML			
Borehole Number BH02		Hole Type SNC		Level		Logged By MD		Scale 1:50		Page Number Sheet 2 of 3	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		10.50	D	N=13 (1,2/2,4,3,4)	11.30		Brownish grey slightly silty SAND with occasional fine chalk gravels.		11		
		11.00 11.00	SPT SPT								
		12.00	D	N=22 (2,4/6,5,5,6)			Brownish grey gravelly SAND. Gravel is fine to medium angular to subangular chalk and flint.		12		
		12.50 12.50	SPT SPT								
		13.50	D	N=22 (3,5/5,5,6,6)					13		
		14.00 14.00	SPT SPT								
		15.00	D	N=37 (5,7/8,9,10,10)	14.80		Grey / dark grey slightly gravelly CLAY. Gravel is fine to coarse angular to subangular chalk, flint and occasional flint cobbles.		15		
		15.50	U								
		16.00	B	N=41 (6,7/9,10,10,12)					16		
		17.00 17.00	SPT SPT								
		18.00	D	N=41 (6,7/9,10,10,12)					17		
		18.50 18.50	SPT SPT								
		19.50	D						18		
		20.00	SPT								
		20.00		20.00							19
		Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation	
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Made ground present to 0.40mbgl.											
2. Groundwater identified at 3.00mbgl.											
3. Borehole installed with a monitoring well upon completion.											

		Percussion Drilling Log									
Project Name: Holland Park, Spalding				Client: Country Court Care Group				Date: 05/03/2026 - 06/03/2026			
Location: Shakespeare Way, Spalding, PE11 1UZ				Contractor:				Co-ords: E523385.00 N321378.00			
Project No. : 102378				Crew Name: Borehole Solutions				Drilling Equipment: Sonic Fraste ML			
Borehole Number BH02		Hole Type SNC		Level		Logged By MD		Scale 1:50		Page Number Sheet 3 of 3	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		20.00	SPT	N=45 (6,8/10,10,12,13)				End of Borehole at 20.00m			
											21
											22
											23
											24
											25
											26
											27
											28
											29
											30
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Made ground present to 0.40mbgl.											
2. Groundwater identified at 3.00mbgl.											
3. Borehole installed with a monitoring well upon completion.											

Trial Pit Log

Project Name: Holland Park, Spalding		Client: Country Court Care Group		Date: 06/03/2026	
Location: Shakespeare Way, Spalding, PE11 1UZ		Contractor:		Co-ords: E523332.00 N321381.00	
Project No. : 102378		Crew Name: Maddock Geotechnical Support		Equipment: 3 Tonne Excavator	
Location Number TP01	Location Type TP	Level	Logged By MD	Scale 1:15	Page Number Sheet 1 of 1

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.10	ES		0.10			MADE GROUND: Dark brown slightly clayey slightly silty sandy TOPSOIL. Occasional gravels of brick, concrete and chalk.	
							MADE GROUND: Brown clayey slightly sandy SILT with occasional gravels of brick, concrete, flint and chalk.	
				0.30			MADE GROUND: Dark brown clayey slightly sandy SILT with occasional gravels of brick, concrete, flint and chalk.	0.5
	0.60	B		0.65			Greyish brown slightly sandy SILT.	
								
								
								1.0
				1.30			Orange slightly sandy SILT.	
				1.40			Brownish grey occasionally orangish grey slightly sandy SILT.	1.5
								
				2.60			End of Borehole at 2.60m	2.5
								3.0

Dimensions		Trench Support and Comment				Pumping Data	
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks 1. Made ground present to 0.65mbgl. 2. Slight groundwater ingress at base. 3. Pit backfilled with arisings upon completion.							
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Trial Pit Log

Project Name: Holland Park, Spalding		Client: Country Court Care Group	Date: 06/03/2026
Location: Shakespeare Way, Spalding, PE11 1UZ		Contractor:	Co-ords: E523344.00 N321415.00
Project No. : 102378		Crew Name: Maddock Geotechnical Support	Equipment: 3 Tonne Excavator
Location Number TP02	Location Type TP	Level	Logged By MD Scale 1:15 Page Number Sheet 1 of 1

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.10			0.10			MADE GROUND: Dark brown clayey slightly silty sandy TOPSOIL.	
	0.30	ES					MADE GROUND: Light brown slightly sandy SILT with occasional gravels of flint, brick, chalk and concrete.	
	0.60	B		0.50			MADE GROUND: Brown slightly sandy slightly gravelly SILT. Gravel is fine to medium angular to subangular concrete, brick, flint and chalk.	0.5
				0.65			Greyish brown slightly sandy SILT.	
				1.00			Greyish orange slightly sandy SILT.	1.0
	1.30	D						1.5
	2.10	D						2.0
				2.40			End of Borehole at 2.40m	2.5
								3.0

Dimensions		Trench Support and Comment				Pumping Data	
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks 1. Made ground present to 0.65mbgl. 2. Slight groundwater ingress at base. 3. Pit backfilled with arisings upon completion.							
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Trial Pit Log

Project Name: Holland Park, Spalding		Client: Country Court Care Group		Date: 06/03/2026	
Location: Shakespeare Way, Spalding, PE11 1UZ		Contractor:		Co-ords: E523359.00 N321397.00	
Project No. : 102378		Crew Name: Maddock Geotechnical Suppor		Equipment: 3 Tonne Excavator	
Location Number TP03	Location Type TP	Level	Logged By MD	Scale 1:15	Page Number Sheet 1 of 1

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	0.20	ES		0.15			MADE GROUND: Dark brown clayey slightly silty sandy TOPSOIL.	
							MADE GROUND: Brown clayey slightly sandy SILT with occasional gravels of flint, brick and concrete.	0.5
	0.55	B		0.60			MADE GROUND: Brown slightly sandy gravelly SILT. Gravel is fine to coarse angular to subangular chalk, concrete, flint and occasional brick.	
				0.90			Greyish brown slightly sandy SILT.	1.0
	1.10	D		1.20			Greyish orange slightly sandy SILT.	
				1.50				1.5
				1.60			Grey occasionally mottled orange clayey SILT.	
				1.70			1.40 – 1.60m: Band of grey silty CLAY with peaty regions.	
							Orangish grey occasionally brownish grey slightly clayey slightly sandy SILT.	2.0
				2.40			End of Borehole at 2.40m	2.5
								3.0

Dimensions		Trench Support and Comment				Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks

Remarks 1. Made ground present to 0.90mbgl. 2. Slight groundwater ingress at base. 3. Pit backfilled with arisings upon completion.								
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Trial Pit Log

Project Name: Holland Park, Spalding		Client: Country Court Care Group		Date: 06/03/2026	
Location: Shakespeare Way, Spalding, PE11 1UZ		Contractor:		Co-ords: E523354.00 N321367.00	
Project No. : 102378		Crew Name: Maddock Geotechnical Support		Equipment: 3 Tonne Excavator	
Location Number TP04	Location Type TP	Level	Logged By MD	Scale 1:15	Page Number Sheet 1 of 1

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
				0.15			MADE GROUND: Dark brown clayey silty slightly sandy TOPSOIL with occasional gravels of brick, concrete and chalk.	
				0.30			MADE GROUND: Brown silty sandy gravelly to very gravelly FILL. Gravel is fine to coarse angular to subangular brick, tile, concrete and flint.	0.5
	0.50	ES		0.60			Greyish brown slightly sandy SILT.	
	0.65	B		1.00			Light brown / orange sandy SILT.	1.0
	1.40	D		1.60			Grey clayey SILT with occasional bands of dark grey / dark brown peat.	1.5
	1.80	D		2.00			Greyish orange slightly sandy SILT.	2.0
				2.40			End of Borehole at 2.40m	2.5
								3.0

Dimensions		Trench Support and Comment				Pumping Data	
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks		Date	Rate

Remarks

- Made ground present to 0.60mbgl.
- Slight groundwater ingress at base.
- Pit backfilled with arisings upon completion.



Dice

Environmental

Trial Pit Log

Project Name: Holland Park, Spalding			Client: Country Court Care Group			Date: 06/03/2026			
Location: Shakespeare Way, Spalding, PE11 1UZ			Contractor:			Co-ords: E523375.00 N321358.00			
Project No. : 102378			Crew Name: Maddock Geotechnical Support			Equipment: 3 Tonne Excavator			
Location Number TP05		Location Type TP		Level		Logged By MD		Scale 1:15	Page Number Sheet 1 of 1

Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
Depth (m)	Type	Results					
0.05	ES		0.15			MADE GROUND: Brown slightly sandy SILT with occasional flint and chalk gravels and rare brick fragments.	0.5
0.65	B						
1.30	D		0.60			Brown slightly sandy SILT with occasional flint and chalk gravels.	1.0
			0.90			Brownish grey sandy SILT.	
			1.10			Grey and orange slightly sandy SILT.	
			2.30			1.45 - 1.60m: Rare pockets of grey peaty CLAY.	1.5
						End of Borehole at 2.30m	2.0
							2.5
							3.0

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

1. Made ground present to 0.60mbgl.
2. No groundwater encountered.
3. Pit backfilled with arisings upon completion.





Dice

Environmental

Trial Pit Log

Project Name: Holland Park, Spalding			Client: Country Court Care Group			Date: 06/03/2026			
Location: Shakespeare Way, Spalding, PE11 1UZ			Contractor:			Co-ords: E523393.00 N321386.00			
Project No. : 102378			Crew Name: Maddock Geotechnical Support			Equipment: 3 Tonne Excavator			
Location Number TP06		Location Type TP		Level		Logged By MD		Scale 1:15	Page Number Sheet 1 of 1

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
▼	0.20	ES		0.10		MADE GROUND: Brown slightly clayey slightly silty sandy TOPSOIL with rare gravels of brick and concrete.		
				0.40		MADE GROUND: Light brown slightly sandy slightly gravelly SILT. Gravel is fine to coarse angular flint, chalk and brick.		
	0.55	B		0.70		MADE GROUND: Brown slightly sandy slightly gravelly SILT. Gravel is fine to coarse angular flint and chalk. Rare brick cobble.	0.5	
				1.10		Brown slightly sandy SILT with occasional gravels of flint and chalk.	1.0	
				1.60		Orange and grey slightly sandy SILT.		
						1.40 – 1.50m: Occasional pockets of clayey gravelly SILT with peaty regions.	1.5	
	1.70	D				Greyish orange slightly clayey slightly sandy SILT.		
						2.00m: Becoming orangish grey.	2.0	
				2.30				
						End of Borehole at 2.50m	2.5	
							3.0	

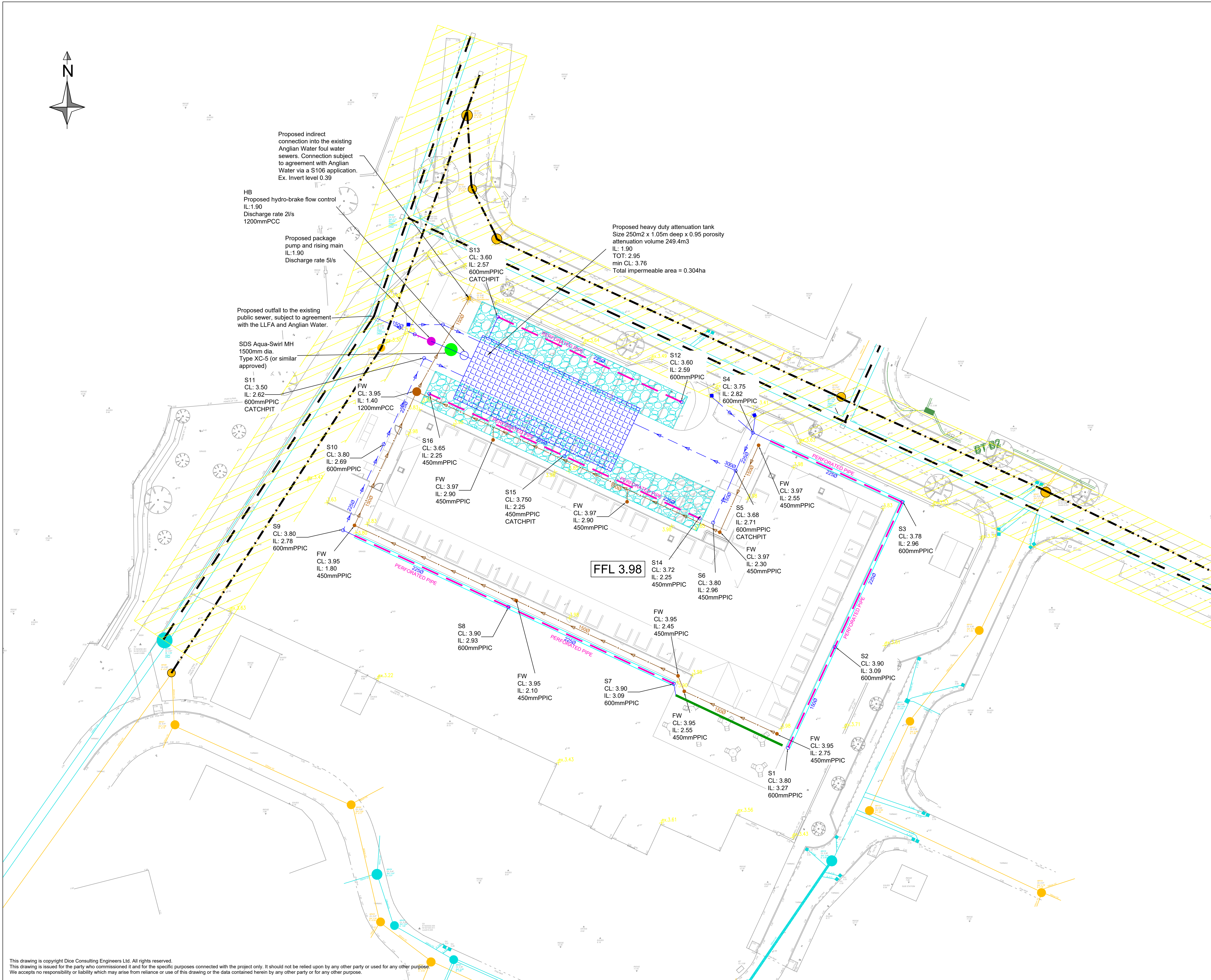
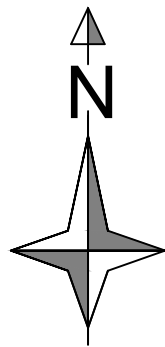
Dimensions			Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks		Date	Rate	Remarks

Remarks

1. Made ground present to 0.70mbgl.
2. Slight groundwater ingress at 2.3mbgl.
3. Pit backfilled with arisings upon completion.



Appendix K – Proposed Drainage Strategy



Notes

- All dimensions are in metres unless stated otherwise.
- All levels are in metres unless stated otherwise.
- This drawing shall not be scaled.
- This drawing shall be read in conjunction with all other relevant Engineer and specialist drawings and specifications.
- All drainage with less than 0.9m cover to soffit in vehicular loaded areas or less than 0.6m in all other areas to be concrete encased / protected.
- All proposed drainage chambers to have cover class D400 when situated in vehicular loaded areas and cover Class B125 where located in pedestrian areas.
- All drainage works to be in accordance with Building Regulations Part H.
- The contractor must allow within their rates for compliance at all times with the 1974 Health and Safety at Work Act and the 2015 CDM Regulations.
- Soakaways deemed unfeasible on site following site investigations by Dice Environmental dated March 2026.
- This information is for strategy purposes only and subject to change following further design development.
- The proposed discharge rate and design parameters subject to agreement with the Local Planning Authority, the Lead Local Flood Authority and Anglian Water.
- The proposed drainage strategy has been designed to accommodate storm events of up to and including 1 in 100 years plus 40% climate change.
- A gravity surface water outfall may be feasible, subject to further design development.
- The proposed discharge of foul water and surface water into the Anglian Water sewers subject to S106 Agreement with Anglian Water.
- This information is for strategy purposes only and subject to change following further design development.
- Design based on Linestyle Studio layout 0481-002 Rev. A
- Design based on underground utilities survey 5102-[30]_P01

Key To Symbols

- Surface water drain
- Surface water inspection chamber/manhole
- 150mm foul water drain
- Foul water inspection chamber/manhole
- Perforated pipe
- Channel drain
- Existing sewer easement
- Filter drain
- Permeable paving
- Road gully
- Attenuation tank
- Existing Anglian Water surface water sewer
- Existing S104 foul water sewer
- Private surface water pump and rising main
- SDS Aquaswirl Treatment Devise

P01	Planning	ID	WN	05/05/2026
Rev:	Description:	Drawn:	Chk/App:	Date:

Sustainability Description

Suitable for Information

Client

Country Court Care

Title

Holland Park, Spalding
Drainage layout

Dice

Third Floor
The Courtyard
35-37 St Mary's Gate
Nottingham
NG1 1PU
0115 362 8752
info@diceconsult.co.uk
diceconsult.co.uk

Dice Project Number	Status	Scale at A1	Subj. Code	Rev
102378	Preliminary	1:250	S2	P01

Drawing Number

102378-DCE-XX-XX-DR-C-5000

Appendix L – Proposed Drainage Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	1	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	1.000
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S1	0.017	5.00	3.900	450	523386.204	321361.144	0.630
S2	0.035	5.00	3.900	450	523392.214	321374.448	0.803
S3	0.026	5.00	3.780	450	523401.914	321395.322	0.818
S4			3.750	450	523380.425	321405.305	0.928
S6	0.020	5.00	3.800	450	523374.703	321392.375	0.840
S5	0.011	5.00	3.680	450	523377.944	321399.842	0.968
S7	0.029	5.00	3.900	450	523369.028	321369.165	0.814
S8	0.019	5.00	3.900	450	523345.028	321380.308	0.969
S9	0.012	5.00	3.800	450	523321.431	321391.266	1.022
S10	0.015	5.00	3.800	450	523327.371	321403.859	1.104
S11			3.500	450	523333.059	321416.037	0.883
dummy			3.565	450	523341.836	321413.607	1.002
S14	0.056	5.00	3.701	450	523372.825	321393.650	0.880
S15	0.009	5.00	3.750	450	523353.577	321402.535	1.129
S12	0.042	5.00	3.600	450	523369.931	321409.831	1.010
S13			3.600	450	523341.803	321422.918	1.030
HB	0.017	5.00	3.500	1200	523338.956	321416.491	0.961
Outfall			3.368	450	523326.624	321421.589	0.918

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S1	S2	14.599	0.600	3.270	3.173	0.097	150.5	150	5.30	32.6
1.001	S2	S3	23.018	0.600	3.097	2.962	0.135	170.5	225	5.68	31.3
1.002	S3	S4	23.695	0.600	2.962	2.822	0.140	169.3	225	6.08	30.1
1.003	S4	S5	6.000	0.600	2.822	2.787	0.035	171.4	225	6.18	29.8
2.000	S6	S5	8.140	0.600	2.960	2.822	0.138	59.0	150	5.10	33.3
1.004	S5	HB	42.394	0.600	2.712	2.539	0.173	245.1	300	6.88	28.1
3.000	S7	S8	26.461	0.600	3.086	2.931	0.155	170.7	225	5.44	32.1

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.817	14.4	2.0	0.480	0.577	0.017	0.0	37	0.570
1.001	0.998	39.7	5.8	0.578	0.593	0.051	0.0	58	0.720
1.002	1.002	39.8	8.4	0.593	0.703	0.077	0.0	70	0.797
1.003	0.995	39.6	8.3	0.703	0.668	0.077	0.0	70	0.792
2.000	1.312	23.2	2.4	0.690	0.708	0.020	0.0	33	0.849
1.004	1.000	70.7	10.9	0.668	0.661	0.108	0.0	79	0.731
3.000	0.998	39.7	3.3	0.589	0.744	0.029	0.0	44	0.606

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
3.001	S8	S9	26.017	0.600	2.931	2.778	0.153	170.0	225	5.88	30.7
3.002	S9	S10	13.924	0.600	2.778	2.696	0.082	169.8	225	6.11	30.0
3.003	S10	S11	13.441	0.600	2.696	2.617	0.079	170.1	225	6.33	29.4
3.004	S11	dummy	9.107	0.600	2.617	2.563	0.054	168.6	225	6.48	29.1
3.005	dummy	HB	4.076	0.600	2.563	2.539	0.024	169.8	225	6.55	28.9
4.000	S14	S15	21.200	0.600	2.821	2.697	0.124	171.0	225	5.35	32.4
4.001	S15	HB	20.212	0.600	2.621	2.539	0.082	246.5	300	5.69	31.3
5.000	S12	S13	31.023	0.600	2.590	2.570	0.020	1551.2	225	6.60	28.8
5.001	S13	HB	7.029	0.600	2.570	2.539	0.031	226.7	225	6.73	28.4
1.005	HB	Outfall	13.344	0.600	2.539	2.450	0.089	149.9	150	7.16	27.5

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
3.001	1.000	39.7	5.2	0.744	0.797	0.047	0.0	55	0.696
3.002	1.000	39.8	6.4	0.797	0.879	0.059	0.0	61	0.739
3.003	0.999	39.7	7.8	0.879	0.658	0.074	0.0	67	0.779
3.004	1.004	39.9	7.7	0.658	0.777	0.074	0.0	67	0.782
3.005	1.000	39.8	7.7	0.777	0.736	0.074	0.0	67	0.779
4.000	0.997	39.6	6.5	0.655	0.828	0.056	0.0	62	0.743
4.001	0.997	70.5	7.3	0.829	0.661	0.065	0.0	65	0.649
5.000	0.323	12.9	4.3	0.785	0.805	0.042	0.0	90	0.292
5.001	0.864	34.4	4.3	0.805	0.736	0.042	0.0	53	0.590
1.005	0.818	14.5	30.2	0.811	0.768	0.304	0.0	150	0.834

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	14.599	150.5	150	Circular	3.900	3.270	0.480	3.900	3.173	0.577
1.001	23.018	170.5	225	Circular	3.900	3.097	0.578	3.780	2.962	0.593
1.002	23.695	169.3	225	Circular	3.780	2.962	0.593	3.750	2.822	0.703
1.003	6.000	171.4	225	Circular	3.750	2.822	0.703	3.680	2.787	0.668
2.000	8.140	59.0	150	Circular	3.800	2.960	0.690	3.680	2.822	0.708
1.004	42.394	245.1	300	Circular	3.680	2.712	0.668	3.500	2.539	0.661
3.000	26.461	170.7	225	Circular	3.900	3.086	0.589	3.900	2.931	0.744
3.001	26.017	170.0	225	Circular	3.900	2.931	0.744	3.800	2.778	0.797
3.002	13.924	169.8	225	Circular	3.800	2.778	0.797	3.800	2.696	0.879
3.003	13.441	170.1	225	Circular	3.800	2.696	0.879	3.500	2.617	0.658

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S1	450	Manhole	Adoptable	S2	450	Manhole	Adoptable
1.001	S2	450	Manhole	Adoptable	S3	450	Manhole	Adoptable
1.002	S3	450	Manhole	Adoptable	S4	450	Manhole	Adoptable
1.003	S4	450	Manhole	Adoptable	S5	450	Manhole	Adoptable
2.000	S6	450	Manhole	Adoptable	S5	450	Manhole	Adoptable
1.004	S5	450	Manhole	Adoptable	HB	1200	Manhole	Adoptable
3.000	S7	450	Manhole	Adoptable	S8	450	Manhole	Adoptable
3.001	S8	450	Manhole	Adoptable	S9	450	Manhole	Adoptable
3.002	S9	450	Manhole	Adoptable	S10	450	Manhole	Adoptable
3.003	S10	450	Manhole	Adoptable	S11	450	Manhole	Adoptable

Pipeline Schedule

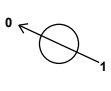
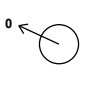
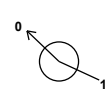
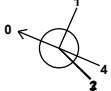
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
3.004	9.107	168.6	225	Circular	3.500	2.617	0.658	3.565	2.563	0.777
3.005	4.076	169.8	225	Circular	3.565	2.563	0.777	3.500	2.539	0.736
4.000	21.200	171.0	225	Circular	3.701	2.821	0.655	3.750	2.697	0.828
4.001	20.212	246.5	300	Circular	3.750	2.621	0.829	3.500	2.539	0.661
5.000	31.023	1551.2	225	Circular	3.600	2.590	0.785	3.600	2.570	0.805
5.001	7.029	226.7	225	Circular	3.600	2.570	0.805	3.500	2.539	0.736
1.005	13.344	149.9	150	Circular	3.500	2.539	0.811	3.368	2.450	0.768

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.004	S11	450	Manhole	Adoptable	dummy	450	Manhole	Adoptable
3.005	dummy	450	Manhole	Adoptable	HB	1200	Manhole	Adoptable
4.000	S14	450	Manhole	Adoptable	S15	450	Manhole	Adoptable
4.001	S15	450	Manhole	Adoptable	HB	1200	Manhole	Adoptable
5.000	S12	450	Manhole	Adoptable	S13	450	Manhole	Adoptable
5.001	S13	450	Manhole	Adoptable	HB	1200	Manhole	Adoptable
1.005	HB	1200	Manhole	Adoptable	Outfall	450	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S1	523386.204	321361.144	3.900	0.630	450				
						0	1.000	3.270	150
S2	523392.214	321374.448	3.900	0.803	450		1	1.000	3.173
						0	1.001	3.097	225
S3	523401.914	321395.322	3.780	0.818	450		1	1.001	2.962
						0	1.002	2.962	225
S4	523380.425	321405.305	3.750	0.928	450		1	1.002	2.822
						0	1.003	2.822	225
S6	523374.703	321392.375	3.800	0.840	450				
						0	2.000	2.960	150
S5	523377.944	321399.842	3.680	0.968	450		1	2.000	2.822
						2	1.003	2.787	225
						0	1.004	2.712	300
S7	523369.028	321369.165	3.900	0.814	450				
						0	3.000	3.086	225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S8	523345.028	321380.308	3.900	0.969	450		1	3.000	2.931	225
							0	3.001	2.931	225
S9	523321.431	321391.266	3.800	1.022	450		1	3.001	2.778	225
							0	3.002	2.778	225
S10	523327.371	321403.859	3.800	1.104	450		1	3.002	2.696	225
							0	3.003	2.696	225
S11	523333.059	321416.037	3.500	0.883	450		1	3.003	2.617	225
							0	3.004	2.617	225
dummy	523341.836	321413.607	3.565	1.002	450		1	3.004	2.563	225
							0	3.005	2.563	225
S14	523372.825	321393.650	3.701	0.880	450		0	4.000	2.821	225
							1	4.000	2.697	225
S15	523353.577	321402.535	3.750	1.129	450		0	4.001	2.621	300
							1	5.000	2.590	225
S12	523369.931	321409.831	3.600	1.010	450		0	5.000	2.570	225
							1	5.001	2.570	225
S13	523341.803	321422.918	3.600	1.030	450		1	5.000	2.570	225
							0	5.001	2.570	225
HB	523338.956	321416.491	3.500	0.961	1200		1	5.001	2.539	225
							2	4.001	2.539	300
							3	3.005	2.539	225
							4	1.004	2.539	300
							0	1.005	2.539	150
Outfall	523326.624	321421.589	3.368	0.918	450		1	1.005	2.450	150

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

Storm Durations											
15	30	60	120	180	240	360	480	600	720	960	1440
Return Period (years)	Climate Change (CC %)		Additional Area (A %)		Additional Flow (Q %)						
2	0		0		0		0				
30	35		0		0		0				
100	40		0		0		0				

Node HB Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	2.539	Product Number	CTL-SHE-0070-2000-0800-2000
Design Depth (m)	0.800	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.0	Min Node Diameter (mm)	1200

Node HB Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	2.539
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	415.0	0.0	0.630	415.0	0.0	0.631	0.0	0.0

Node S15 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	2.621	Slope (1:X)	100.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	270	Depth (m)	0.350
Safety Factor	2.0	Width (m)	4.800	Inf Depth (m)	
Porosity	0.30	Length (m)	40.000		

Node S13 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	2.570	Slope (1:X)	100.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.350
Safety Factor	2.0	Width (m)	4.800	Inf Depth (m)	
Porosity	0.30	Length (m)	32.000		

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.57%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	3.317	0.047	3.0	0.0075	0.0000	OK
15 minute summer	S2	10	3.169	0.072	9.1	0.0115	0.0000	OK
15 minute summer	S3	11	3.055	0.093	13.6	0.0148	0.0000	OK
15 minute summer	S4	11	2.921	0.099	13.5	0.0157	0.0000	OK
15 minute summer	S6	10	3.001	0.041	3.5	0.0065	0.0000	OK
15 minute summer	S5	10	2.840	0.128	18.7	0.0204	0.0000	OK
15 minute summer	S7	10	3.140	0.054	5.1	0.0085	0.0000	OK
15 minute summer	S8	11	3.001	0.070	8.3	0.0111	0.0000	OK
15 minute summer	S9	11	2.860	0.082	10.3	0.0130	0.0000	OK
15 minute summer	S10	11	2.789	0.093	12.8	0.0149	0.0000	OK
15 minute summer	S11	11	2.713	0.096	12.8	0.0153	0.0000	OK
480 minute summer	dummy	344	2.672	0.109	2.6	0.0173	0.0000	OK
15 minute summer	S14	10	2.900	0.079	10.0	0.0125	0.0000	OK
15 minute summer	S15	10	2.714	0.093	11.3	0.5695	0.0000	OK
15 minute summer	S12	10	2.703	0.113	7.5	0.0179	0.0000	OK
480 minute summer	S13	344	2.672	0.102	1.5	0.7725	0.0000	OK
480 minute summer	HB	344	2.672	0.133	10.5	52.5479	0.0000	OK
15 minute summer	Outfall	1	2.450	0.000	1.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	2.9	0.632	0.201	0.0673	
15 minute summer	S2	1.001	S3	9.0	0.682	0.227	0.3039	
15 minute summer	S3	1.002	S4	13.5	0.840	0.339	0.3818	
15 minute summer	S4	1.003	S5	13.5	0.857	0.341	0.0946	
15 minute summer	S6	2.000	S5	3.5	0.918	0.150	0.0308	
15 minute summer	S5	1.004	HB	19.4	1.447	0.275	0.6388	
15 minute summer	S7	3.000	S8	5.0	0.570	0.127	0.2342	
15 minute summer	S8	3.001	S9	8.3	0.703	0.208	0.3065	
15 minute summer	S9	3.002	S10	10.3	0.720	0.259	0.1996	
15 minute summer	S10	3.003	S11	12.8	0.805	0.322	0.2136	
15 minute summer	S11	3.004	dummy	12.8	0.814	0.320	0.1496	
480 minute summer	dummy	3.005	HB	2.6	0.474	0.064	0.0885	
15 minute summer	S14	4.000	S15	9.8	0.816	0.247	0.2550	
15 minute summer	S15	4.001	HB	12.0	1.269	0.170	0.2105	
15 minute summer	S12	5.000	S13	7.3	0.481	0.565	0.4779	
480 minute summer	S13	5.001	HB	1.2	0.362	0.036	0.1471	
480 minute summer	HB	Hydro-Brake®	Outfall	1.9				78.3

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.57%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	11	3.603	0.333	12.2	0.0529	0.0000	FLOOD RISK
15 minute summer	S2	11	3.528	0.431	35.3	0.0686	0.0000	SURCHARGED
15 minute summer	S3	11	3.398	0.436	53.0	0.0693	0.0000	SURCHARGED
15 minute summer	S4	11	3.095	0.273	52.9	0.0434	0.0000	SURCHARGED
15 minute summer	S6	10	3.056	0.096	14.4	0.0152	0.0000	OK
600 minute winter	S5	585	2.996	0.284	6.4	0.0452	0.0000	OK
15 minute summer	S7	12	3.239	0.153	20.8	0.0244	0.0000	OK
15 minute summer	S8	12	3.210	0.279	34.1	0.0444	0.0000	SURCHARGED
15 minute summer	S9	11	3.111	0.333	37.9	0.0529	0.0000	SURCHARGED
15 minute summer	S10	11	3.017	0.321	46.9	0.0510	0.0000	SURCHARGED
600 minute winter	S11	585	2.996	0.379	4.3	0.0603	0.0000	SURCHARGED
600 minute winter	dummy	585	2.996	0.433	4.2	0.0689	0.0000	SURCHARGED
15 minute summer	S14	10	3.022	0.201	40.6	0.0320	0.0000	OK
600 minute winter	S15	585	2.996	0.375	3.8	8.9456	0.0000	SURCHARGED
600 minute winter	S12	585	2.996	0.406	2.5	0.0646	0.0000	SURCHARGED
600 minute winter	S13	585	2.996	0.426	2.4	8.8620	0.0000	SURCHARGED
600 minute winter	HB	585	2.996	0.457	15.5	180.7406	0.0000	SURCHARGED
15 minute summer	Outfall	1	2.450	0.000	2.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	11.7	0.810	0.812	0.2570	
15 minute summer	S2	1.001	S3	35.1	0.883	0.885	0.9155	
15 minute summer	S3	1.002	S4	52.9	1.329	1.327	0.9424	
15 minute summer	S4	1.003	S5	52.8	1.337	1.333	0.2268	
15 minute summer	S6	2.000	S5	14.3	1.082	0.618	0.1175	
600 minute winter	S5	1.004	HB	6.2	0.579	0.088	2.9559	
15 minute summer	S7	3.000	S8	20.6	0.795	0.519	0.9077	
15 minute summer	S8	3.001	S9	30.0	0.897	0.755	1.0347	
15 minute summer	S9	3.002	S10	37.1	0.934	0.933	0.5538	
15 minute summer	S10	3.003	S11	46.9	1.180	1.181	0.5346	
600 minute winter	S11	3.004	dummy	4.2	0.396	0.105	0.3622	
600 minute winter	dummy	3.005	HB	4.1	0.614	0.104	0.1621	
15 minute summer	S14	4.000	S15	39.8	1.147	1.004	0.7327	
600 minute winter	S15	4.001	HB	3.0	0.520	0.043	1.4233	
600 minute winter	S12	5.000	S13	2.4	0.196	0.190	1.2338	
600 minute winter	S13	5.001	HB	1.3	0.465	0.039	0.2796	
600 minute winter	HB	Hydro-Brake®	Outfall	2.0				219.4

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.57%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	3.900	0.630	16.5	0.1002	1.0676	FLOOD
15 minute summer	S2	11	3.874	0.777	43.1	0.1235	0.0000	FLOOD RISK
15 minute summer	S3	11	3.711	0.749	67.0	0.1191	0.0000	FLOOD RISK
720 minute winter	S4	705	3.327	0.505	5.5	0.0803	0.0000	SURCHARGED
720 minute summer	S6	720	3.326	0.366	2.1	0.0583	0.0000	SURCHARGED
720 minute winter	S5	705	3.326	0.614	7.7	0.0977	0.0000	SURCHARGED
15 minute summer	S7	11	3.745	0.659	28.1	0.1048	0.0000	FLOOD RISK
15 minute summer	S8	11	3.670	0.739	42.6	0.1175	0.0000	FLOOD RISK
15 minute summer	S9	12	3.482	0.704	51.9	0.1119	0.0000	SURCHARGED
720 minute winter	S10	705	3.328	0.632	4.9	0.1005	0.0000	SURCHARGED
720 minute winter	S11	705	3.327	0.710	4.8	0.1129	0.0000	FLOOD RISK
720 minute winter	dummy	705	3.329	0.766	4.8	0.1217	0.0000	FLOOD RISK
720 minute winter	S14	705	3.327	0.506	4.0	0.0804	0.0000	SURCHARGED
720 minute winter	S15	705	3.327	0.706	4.6	25.6133	0.0000	SURCHARGED
720 minute winter	S12	705	3.329	0.739	3.0	0.1175	0.0000	FLOOD RISK
720 minute winter	S13	705	3.329	0.759	3.0	8.9148	0.0000	FLOOD RISK
720 minute summer	HB	720	3.327	0.788	26.1	249.4654	0.0000	FLOOD RISK
15 minute summer	Outfall	1	2.450	0.000	2.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	14.4	0.832	0.999	0.2570	
15 minute summer	S2	1.001	S3	41.6	1.047	1.049	0.9155	
15 minute summer	S3	1.002	S4	64.6	1.625	1.622	0.9424	
720 minute winter	S4	1.003	S5	5.5	0.668	0.138	0.2386	
720 minute summer	S6	2.000	S5	2.1	0.752	0.091	0.1433	
720 minute winter	S5	1.004	HB	7.4	0.598	0.104	2.9854	
15 minute summer	S7	3.000	S8	25.1	0.809	0.632	1.0524	
15 minute summer	S8	3.001	S9	40.9	1.028	1.029	1.0347	
15 minute summer	S9	3.002	S10	50.3	1.266	1.266	0.5538	
720 minute winter	S10	3.003	S11	4.8	0.544	0.121	0.5346	
720 minute winter	S11	3.004	dummy	4.8	0.410	0.119	0.3622	
720 minute winter	dummy	3.005	HB	4.7	0.614	0.119	0.1621	
720 minute winter	S14	4.000	S15	4.0	0.583	0.101	0.8431	
720 minute winter	S15	4.001	HB	3.2	0.519	0.045	1.4233	
720 minute winter	S12	5.000	S13	3.0	0.189	0.230	1.2338	
720 minute winter	S13	5.001	HB	2.7	0.463	0.079	0.2796	
720 minute summer	HB	Hydro-Brake®	Outfall	2.0				219.9

