



FOUL AND SURFACE WATER DRAINAGE STRATEGY

FOR
**PROPOSED DEVELOPMENT
AT HOLBEACH ROAD,
SPALDING**

ON BEHALF OF
**COMMERCIAL DEVELOPMENT
PROJECTS LIMITED**

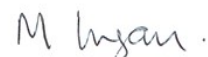


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Foul and Surface Water Drainage Strategy for Proposed Development at Holbeach Road, Spalding 1506-54r2b			
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1.0 INTRODUCTION

- 1.1 Commercial Development Projects Ltd. ('the Client') are proposing a commercial development on a greenfield site to the south-east of the A16/A151 junction in Spalding, Lincolnshire.
- 1.2 The National Planning Policy Framework (NPPF) (Communities and Local Government, February 2025), requires consideration of the proposed means of sustainably managing surface water runoff and foul effluent from the development.
- 1.3 ARP Associates has therefore been appointed to implement appropriate consultations and prepare a foul and Surface Water Drainage Strategy to satisfy the requirements of NPPF, the Local Planning Authority, the Lead Local Flood Authority, and the Internal Drainage Board.
- 1.4 The consultations and site appraisal for this assessment were predominantly carried out between March and May 2024, with updates undertaken in July 2025 and further updates in October 2025. The findings of this report are based on data available at the time of the study and may require review if new data becomes available or relevant policy/guidance is updated prior to development proposals being approved.
- 1.5 The report has been initially prepared for the use and reliance of the Client only. The report shall not be relied upon or transferred to any other parties without the written agreement of ARP Associates. For the avoidance of any doubt, where ARP Associates enters into a letter of reliance for the benefit of a third party, that third party will be permitted to rely on the report. No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party without ARP Associates consent.
- 1.6 Attention is drawn to the requirements of the Construction Design and Management Regulations 2015, and in particular, the duties and obligations of the Client.

2.0 SITE DESCRIPTION

General

- 2.1 The site, which is centred on Ordnance Survey Grid Reference 526675, 323822, is located to the south-east of the A16/A151 junction in Spalding, Lincolnshire. The nearest postcode is PE12 6JP. A site location plan is presented in Appendix A.
- 2.2 The site is a broadly triangular shaped piece of land extending to an area of approximately 1.31 hectares (ha), with approximate major dimensions of 150m (north - south) by 170m (east - west).

Current Status

- 2.3 The site is undeveloped 'greenfield' land, with varying vegetation across its extent. The majority of the site comprises densely vegetated land with numerous trees and shrubs. A small area which extends east from the southern end of the site is less densely vegetated, with rough grass cover. A more formal grassed area surrounds the gravel driveway in the northern tip of the site.

Access

- 2.4 Access to the site is currently from the A151 Holbeach Road to the north, via a small access track. The northern tip of the site is also accessed by a gravel driveway from the A151 Holbeach Road, which also serves the adjacent Woodhouse Farm Lodge and a residential dwelling.

Site Boundaries and Surrounding Land Use

- 2.5 The site is bound on the west by the A16 Low Road, and on the north by the A151 Holbeach Road. The two roads intersect via a large roundabout located adjacent to the north-west of the site. The site is separated from the A16 and the roundabout by a highway drainage swale which was constructed in the last couple of years.

- 2.6 To the north-east of the site is a single residential dwelling and the Woodhouse Farm Lodge hotel. To the east of the site are open agricultural fields. To the south of the site there is a drainage channel with a public footpath beyond.

Topography

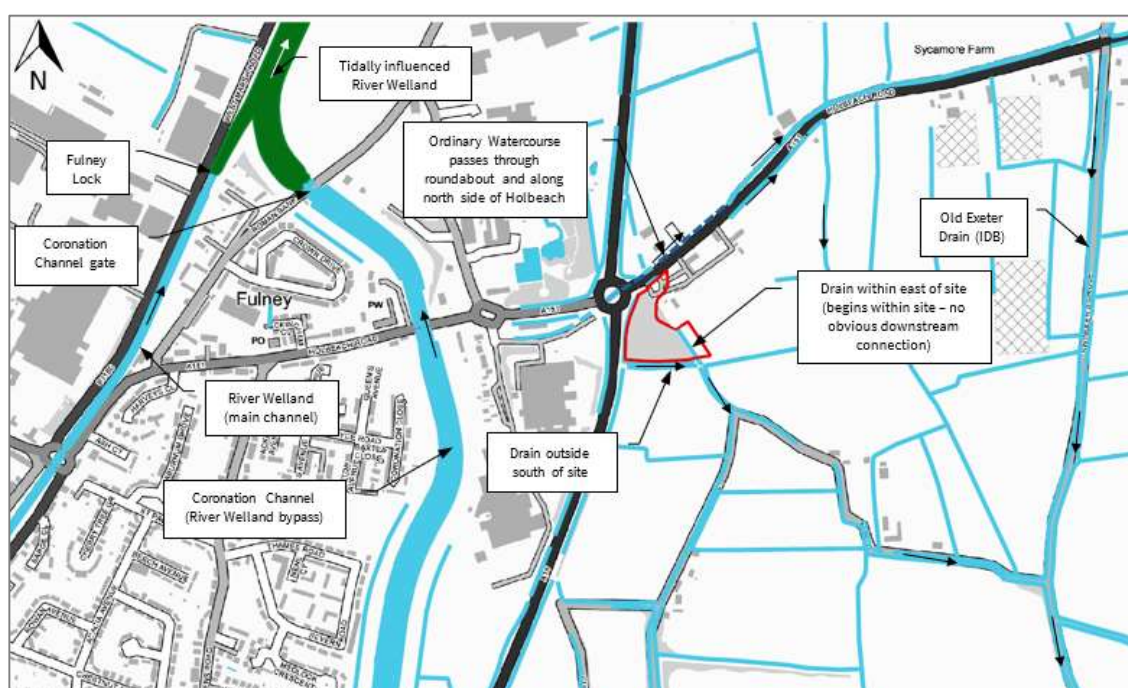
- 2.7 A topographical survey of the site was undertaken in April 2024, and a copy of the survey drawing is included in Appendix B for reference. It can be seen that the site is relatively flat, with a very gradual fall towards the south-east. Levels in the north of the site are of the order of 3.3-3.4m Above Ordnance Datum (AOD), and fall to around 3.0mAOD in the south-west and 2.8mAOD in the south-east.
- 2.8 Beyond the site boundary, levels generally fall towards the south-east. The A16 to the west of the site is elevated slightly above the general level of the site by around 0.7-1.3m. Levels on the A151 to the north are approximately coincident with the adjacent site levels.

Local Hydrology

- 2.9 The River Welland, an Environment Agency designated Main River is located approximately 825m west of the site. The river flow in a north-easterly direction through the area, flowing towards the coast approximately 22km away, and discharging into The Wash at a point approximately 8km south-east of Boston.
- 2.10 Fulney lock, located on the River Welland to the west of the site, is the limit of tidal influence on the river, and provides a moveable barrier between the tidal and fluvial sections of the watercourse.
- 2.11 The Coronation Channel is a bypass channel of the main River Welland, which flows around the east of Spalding. This channel, which is also a designated Main River, lies just 350m west of the site at its nearest point. A moveable gate acts as a tidal barrier and defines the tidal limit of the Coronation Channel.

- 2.12 In closer proximity to the site are a number of drains (classified as Ordinary Watercourses) which form part of the local land drainage catchments. A drain is located outside of the southern boundary of the site and flows from west to east before turning to flows south, away from the site. These drains may flow into the wider land drainage catchment to the south. Although these ditches are well-defined, they are more akin to field boundary drains rather than watercourses, with no flow present on the day of the walkover.
- 2.13 Within the east of the site there is a well-defined drainage ditch which is understood to flow from north to south. Although it is possible the on-site ditch did once have connectivity to the downstream channels, no outfall pipe is visible on site, and no incoming pipe is visible in the downstream channels. Although Ordnance Survey mapping indicates the ditch to begin within the adjacent landholding, the topographical survey and inspection on site have confirmed that the upstream end of the ditch is within the development site.
- 2.14 The site itself, including the above drains, are within the Wisemans catchment of the South Holland Internal Drainage Board (IDB) area, which generally flows towards South Holland Drain approximately 7.8km south of the site, and has an eventual pumped discharge. Land to the north of the A151 is within the separate Lords catchment, which generally flows north towards the Lords Sluice and into the River Welland.
- 2.15 To the north of the site there is an Ordinary watercourse which flows through the centre of the roundabout then alongside the northern side of the A151 Holbeach Road. Parts of the watercourse are understood to run in culvert beneath highways and the service area access road, but a short open section exists opposite the site entrance.
- 2.16 The above hydrological features and connectivity are illustrated by the plan in Figure 1. Plans showing the full extent of the above IDB catchments are included in Appendix E for reference.

Figure 1. Plan Showing Key Local Hydrological Features



Existing Drainage

- 2.15 Anglian Water public sewer records (included in Appendix C for reference) confirm that there are no public sewers within the site or the immediate surrounding area.
- 2.16 The presence of gullies and kerb drains on the A16 and A151 to the west and north of the site confirms that the roads and roundabout are served by an existing highway drainage system. It is understood that the highway drainage discharges to the swale located between the highway and the west / north-west of the site. From here it is most likely to enter a piped drainage system before being discharged into the IDB Lords catchment to the north of the site.
- 2.17 It is understood that the site is not served by an existing positive drainage system (although the presence of some piped land drainage within the site cannot be ruled out). Some overland flows from the site may reach the existing ditch in the east, although this does not appear to have a positive outfall. The majority of overland flow is likely to infiltrate into the ground or be lost via evapotranspiration.

3.0 CONSULTATION AND DATA REVIEW

Water Authority

- 3.1 A copy of the public sewer records was obtained from Anglian Water, which is the Water Authority for this area, and a copy of the plan is presented in Appendix C for reference. The plan shows that the site and surrounding area is not within an area served by any mains sewerage systems. On this basis, no further consultation has been undertaken with Anglian Water at this stage.

Lead Local Flood Authority

- 3.2 Consultation was undertaken with Lincolnshire County Council, which is Lead Local Flood Authority (LLFA) for this area, but at the time of writing a response has not been received.
- 3.3 However, reference has been made to the recommended assessment and design criteria set out in the Lincolnshire County Council Highway and Lead Local Flood Authority 'Lincolnshire Development Roads and Sustainable Drainage Design Approach' guidance document (2021).

Internal Drainage Board

- 3.4 Consultation has been undertaken with South Holland Internal Drainage Board (IDB), which is the Land Drainage Authority for this area. A copy of its response, dated 14th May 2024, is included in Appendix D for reference.
- 3.5 The IDB confirmed that the site lies within the South Holland IDB Drainage District, and specifically within the Wisemans pumped catchment. The separate Lords catchment lies immediately north of the site. On this basis, the Board's Byelaws apply, a copy of which can be accessed on the Board's website.

- 3.6 It was confirmed that the watercourses along the southern site boundary and through the east of the site are riparian (privately owned / maintained) and therefore do not normally receive maintenance from the IDB. The Board note that *“knowledge of the condition and connectivity of the system here is limited and we would recommend investigations are undertaken as part of the drainage design to ensure a suitable flow path away from the site”*. However, it is further noted that *“as both are within the Wisemans catchment the assumption would be that the riparian system drains south / east towards the IDB’s maintained network”*. The Board is aware of connections into the Old Exeter Drain from the riparian network to the west (i.e. from the direction of the site).
- 3.7 To discharge surface water to a watercourse, the proposed development will require land drainage consent in line with the Board’s byelaws (specifically byelaw 3). The Board does not offer agreements in principle for the discharge of surface water prior to a consent application, but recommends that any discharge of surface water is in line with the Defra ‘Non-Statutory technical standards for sustainable drainage systems’, and would therefore request that the proposed rate is restricted to the calculated equivalent greenfield runoff rate or as close to this rate as practicable.
- 3.8 The IDB advises that the water table in this locality is relatively high and that this should be taken into account when incorporating any below ground storage features into the design.

4.0 CLIMATE CHANGE

- 4.1 NPPF requires that the projected impacts of climate change are taken into account over the lifetime of a development. Studies have projected that the Global sea level will continue to rise and there will be an increase in river flows and rainfall intensity across the country, with the degree of change depending on greenhouse gas emissions and the sensitivity of the climate system.
- 4.2 Recommended allowances for assessment are set out in Environment Agency publication 'Flood risk assessments: climate change allowances' (published February 2016; last updated May 2022). Within this guidance, a regionalised approach is adopted to climate change impacts based upon the river Management Catchment within which the proposed development site falls, and the intended design life of the development.
- 4.3 The site is situated within the Nene Management Catchment of the Anglian River Basin District. For commercial development, climate change impacts over a design life of at least 60 years should be considered, thus a notional end-of-life date of 2085 has been used in the assessment.
- 4.4 Impact on Rainfall Intensity - In accordance with the current guidance, for a development with a with a lifetime extending to between 2061 and 2100, the impacts of the 'central' climate change scenario (50th percentile of potential scenarios) for the '2070s epoch' should be considered with respect rainfall intensity. Within this Management Catchment, this is predicted to lead to an increase in rainfall intensity of up to 25% in the 1 in 30 year (3.33% annual exceedance probability) rainfall event, and up to 25% in the 1 in 100 year (1% annual exceedance probability) rainfall event.

5.0 DEVELOPMENT PROPOSALS

- 5.1 The development proposals for the site are for the construction of two commercial buildings – a drive-through restaurant/café and a retail unit – with associated access, car parking, and landscaping.
- 5.2 It is proposed the site will be accessed via a new entrance from the A151 to the north.
- 5.3 The development proposals are illustrated in the plan in Appendix E.

6.0 SURFACE WATER DRAINAGE

6.1 It is a requirement of the NPPF to ensure that surface water run-off from any proposed development has negligible consequence on downstream areas, either in terms of impact upon downstream sewer capacity or flood risk impacts due to discharge to a watercourse. The existing and proposed surface water run-off regimes are considered below.

6.2 This section should be read in conjunction with the following drawings, and the hydraulic calculations included within Appendix F:

- 1506/54/SK05.01 Drainage Strategy – Sheet 1 of 2
- 1506/54/SK05.02 Drainage Strategy – Sheet 2 of 2

Existing Surface Water Run-off

6.3 As set out in Section 2, some overland flows from the site may reach the existing ditch in the east, although this does not appear to have a positive outfall. The majority of overland flow is likely to infiltrate into the ground or be lost via evapotranspiration.

6.4 Using the HR Wallingford UKSuDS online tool, and applying the IoH124 methodology (Interim Code of Practice for SuDS method for site area less than 50ha), the 'Qbar' average annual greenfield run-off rate for the development site has been assessed to be 1.4l/s/ha. The calculation is presented in Appendix F.

Proposed Surface Water Runoff Destination

6.5 The proposed means of managing surface water runoff from the proposed development has been considered with respect to the hierarchy set out in Building Regulations Part H (2010) as follows.

6.6 Infiltration - Consideration of the proposed means of surface water drainage should firstly be given to infiltration techniques (to ground). Detailed intrusive investigations have not been undertaken at this stage, but as set out in Section 3, the IDB noted that the water table in this

locality is known to be “relatively high”. This suggests that the discharge of surface water by infiltration to the ground is unlikely to be feasible. This should be confirmed through appropriate intrusive investigation prior to detailed design.

- 6.7 Watercourse – As infiltration is unlikely to be feasible, discharge to a watercourse must be considered as the next option. It was previously proposed that surface water from the development should be discharged to the existing Ordinary Watercourse within the southeast of the site, on the understanding that this provided a positive connection to the downstream Internal Drainage Board network. However, further investigations undertaken following a planning response from South Holland Internal Drainage Board suggest that there is not a viable positive discharge route downstream of the on-site ditch, and therefore this is not considered to be a sustainable approach to discharge.
- 6.8 The Internal Drainage Board suggested that discharge of surface water to the Board’s systems to the north of the site, possibly via an existing Lincolnshire County Council maintained watercourse system to the west of the site, be considered as a potentially more viable solution. There is understood to be an Ordinary watercourse which flows through the centre of the roundabout then alongside the northern side of the A151 Holbeach Road. Parts of the watercourse are understood to run in culvert, but a short open section exists opposite the site entrance. This watercourse eventually flows into the Board’s Lords catchment.
- 6.9 Based on the response of the Internal Drainage Board and inspection on site, it is proposed that the surface water discharge from the site be made to the existing Ordinary watercourse to the north of the site, on the opposite side of the A151 Holbeach Road. It is likely a direct outfall to the watercourse could be made within the public highway boundary, but would need to be secured via a surface water sewer requisition from Anglian Water or a Section 50 (private apparatus in public highway) agreement with the Highway Authority. Alternatively, it may be feasible to discharge surface water to the existing highway drainage system on the southern side of the A151 Holbeach Road, by agreement with the Highway Authority, which would negate the requirement to cross the road with the outfall pipe.

- 6.10 It has been established that a pumped outfall will be required to facilitate the discharge to this system, although the final discharge should be made by gravity pipe.

Proposed Surface Water Drainage

- 6.11 So that the discharge of surface water does not cause a determinantal increase in the flow in the sewer or any downstream watercourse, the surface water discharge shall be restricted to an appropriate maximum rate, based on the equivalent greenfield runoff rate from the developable area of the site. The proposed development layout (Appendix E) has been assessed as having a proposed impermeable area of 1.096ha. On this basis, as the Qbar greenfield runoff rate is 1.4l/s/ha, the theoretical proposed rate of surface water discharge would be 1.5l/s.
- 6.12 However, it is considered unfeasible to attenuate flows to such a low rate, due to the potential risk of blockage which would be brought about by the small diameter of the flow control orifice. This is supported by the DEFRA Non-Statutory Technical Standards for SuDS, which states that discharge should be as close as reasonably practicable to the greenfield equivalent rate, if the greenfield equivalent rate is not appropriate. On this basis, it is proposed that the discharge of surface water shall be restricted to a maximum rate of 2.0l/s.
- 6.13 The proposed surface water drainage system has been designed to accommodate a 1 in 1 year storm event without surcharging, a 1 in 30 year plus 25% climate change allowance event storm event without flooding and, to accommodate the 1 in 100 year plus 25% climate change allowance event without causing flooding of property or third-party land. The proposed drainage layout and hydraulic calculations (Appendix F) have been prepared on this basis.
- 6.14 The climate change allowances set out in Section 4 have been applied to the design. As the proposed development is predominantly impermeable, the likelihood of any significant urban creep occurring in this case is considered to be low. On this basis no urban creep allowance has been included in calculations for this site.
- 6.15 An appropriate volume of surface water storage is to be provided within by means of private attenuation tanks beneath parking and other hardstanding areas, granular sub-base storage

beneath some of the permeable parking areas, and cellular sub-base replacement storage beneath some of the permeable parking areas.

Exceedance Flow Routes

- 6.16 For rainfall events in excess of the design standard (i.e. greater than 1 in 100 year plus climate change event), the capacity of the proposed surface water drainage system is likely to be exceeded. As with all drainage systems, there also remains a residual risk of flows leaving the surface water drainage system in the event of a blockage.
- 6.17 So that exceedance flows do not adversely affect properties on or off site, site levels have been designed to direct flows away from building entrances where possible, so that any flooding remains in landscaped areas, car parks, or roads, where the consequences of surface water flooding will be less significant.
- 6.18 Anticipated surface water exceedance flow routes and potential areas of ponding are indicated in drawings 1506-54-SK05.01 and 1506-54-SK05.02. It can be seen that exceedance flows can be managed such that they do not have an adverse impact upon the proposed development or off-site properties, with exceedance flows expected to pond in less vulnerable areas of the site or follow the existing and proposed topography towards the south-east of the site.

Sustainable Drainage Systems (SuDS)

- 6.19 NPPF requires that SuDS are implemented in 'major development', if feasible. It must be recognised that not all types of SuDS are feasible or appropriate for all development sites, with factors such as available space, ground conditions, and site gradient influencing the feasibility of their use.
- 6.20 As discussed above, the use of infiltration drainage systems is not considered likely to be feasible on this site. However, SuDS in the form of permeable paving, attenuation of surface water flows, and the use of below-ground storage are proposed as part of the drainage design.

Surface Water Quality

- 6.21 Appropriate measures will be incorporated in the surface water drainage system to mitigate the risk of contaminated runoff from the site causing adverse impacts on surface water bodies downstream.
- 6.22 The surface water drainage systems will be considered in accordance with the risk-based approach outlined in CIRIA C753 The SuDS Manual. For the purpose of this Drainage Strategy, the 'simple index approach' has been used to make a preliminary assessment of the likely pollution hazard and the likely requirements for mitigation.
- 6.23 Table 26.2 of The SuDS Manual sets out the 'Pollution Hazard Indices' for different proposed land uses. Table 1 summarises the applicable indices for the proposed development.

Table 1. Pollution Hazard Indices for Proposed Development

Proposed Land Use	Pollution Hazard Level	Pollution Hazard Index		
		Total Suspended Solids	Metals	Hydro-carbons
Non-residential roofs	Low	0.3	0.2	0.05
Commercial yard and delivery areas, non-residential car parks with frequent changeover, and all other roads (except trunk roads and motorways)	Medium	0.7	0.6	0.7

- 6.24 To achieve appropriate pollution mitigation, the selected SuDS components should have a total 'Mitigation Index' equal to or greater than the 'Pollution Hazard Index' for each contaminant.
- 6.25 A significant proportion of run-off from the proposed development will be from building roofs and footpaths, which is considered to be 'clean' surface water run-off, and would be expected to have a very low level of potential contamination. On this basis no specific treatment for this run-off is proposed, except for suitable leaf debris traps and silt traps.

- 6.26 Areas subject to vehicular traffic may contain suspended solids, metals and hydrocarbons. Table 26.3 of The SuDS Manual sets out the 'Mitigation Index' for different SuDS components. Table 2 summarises the applicable indices for the proposed SuDS components to be used for the parking areas.

Table 2. Mitigation Indices for Proposed SuDS - Parking Areas

Proposed SuDS Component	Mitigation Index		
	Total Suspended Solids	Metals	Hydro-carbons
Permeable pavement	0.7	0.6	0.7

- 6.27 From comparison of the above tables, it can be seen that the mitigation index for each type of pollutant is equal to or greater than the hazard indices for the relevant component of the parking areas. On this basis the proposed SuDS strategy for the parking areas is considered to be appropriate in providing mitigation for water quality impacts.
- 6.28 Elsewhere on site, roads and service areas will be drained by trapped gullies. An oil separator may be required within the service yard of the food retail building. This will be confirmed at the detailed design stage.

Land Drainage Consents

- 6.29 A Land Drainage Consent (under the Land Drainage Act 1991) will be required from the IDB for any works affecting the Ordinary Watercourse to the north of the site, including the construction of any new surface water outfall.
- 6.30 A detailed design for these works, along with construction method statements and other supporting evidence, will need to be submitted to the LLFA and IDB for approval in due course, following further design development.
- 6.31 It should be noted that the granting of planning permission does not guarantee the granting of Land Drainage Consents.

Construction Stage Surface Water Management

- 6.32 During the construction stage, before the permanent drainage systems are installed, measures will need to be taken to mitigate the potential environmental risks posed by runoff from the development site. A detailed Temporary Surface Water Management Plan will be required to address these risks. Key issues which require consideration will include the potential for silt-laden or contaminated runoff to adversely affect flood risk and water quality, and the potential for uncontrolled runoff to cause flooding on or off site.
- 6.33 A more detailed assessment of the potential construction stage risks will be undertaken before formulating a site-specific Temporary Surface Water Management Plan to manage the risk. The plan may need to be approved by the LLFA and/or IDB prior to implementation.

7.0 FOUL DRAINAGE

7.1 This section sets out the proposed means of managing foul discharge from the proposed development. This section should be read in conjunction with the following preliminary civil engineering design drawings:

- 1506/54/SK05.01 Drainage Strategy – Sheet 1 of 2
- 1506/54/SK05.02 Drainage Strategy – Sheet 2 of 2

7.2 Anglian Water public sewer records (Appendix C) confirm that there are no public sewers within the site or the immediate surrounding area.

7.3 Accordingly, in accordance with the hierarchy of foul drainage options set out in Building Regulations Part H (2010), it is proposed that discharge of foul water will be made by means of a packaged sewage treatment plant with discharge to surface water, or septic tank with discharge to ground via a 'drainage field'.

7.4 It is anticipated that there is insufficient space on site for the construction of a drainage field, therefore it is proposed that a package treatment plant be implemented, with treated effluent discharged via the proposed pumped surface water outfall (downstream of the flow control).

7.5 Details of the package treatment plant will be confirmed at the detailed design stage by a specialist supplier, based on the expected foul flow characteristics from the proposed buildings. The chosen treatment plant must meet the requirements of BS EN 12566.

Environmental Permit

7.6 An Environmental Permit from the Environment Agency may be required from the for the discharge. This should be confirmed with the Agency and considered further at the detailed design stage. It should be noted that granting of the Environmental Permit cannot be guaranteed and the Environment Agency require up to four months to process applications.

8.0 MAINTENANCE

- 8.1 There is a residual risk of flooding from drainage systems in the event of siltation or a blockage occurring. It is therefore essential that all drainage systems are subject to periodic inspection and maintenance, so that the design standard is not compromised, and to reduce the risk of blockage.
- 8.2 The ongoing inspection and maintenance of the surface water drainage system on this development will remain the responsibility of the site owner, although the inspection and maintenance activities may be carried out by a suitable contractor or management company working on behalf of the owner.
- 8.3 A draft Drainage Maintenance Plan has been prepared for agreement with the LLFA, and this is included in Appendix G.

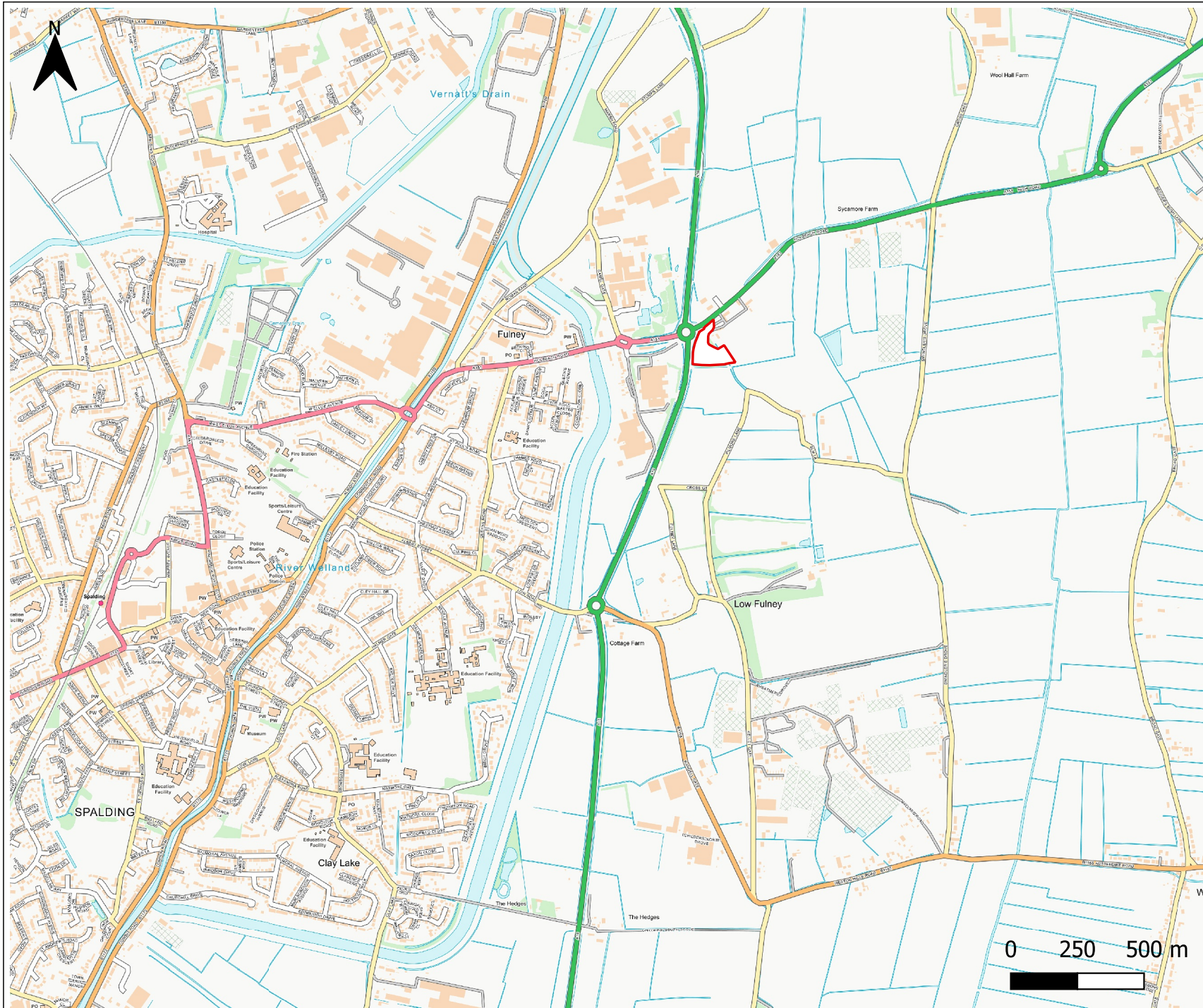
9.0 SUMMARY

- 9.1 The principles of a sustainable surface water management strategy for the proposed development are set out within the report. It has been determined that infiltration techniques are unlikely to be suitable on this particular site, therefore it is proposed that surface water from the development will be discharged to the existing Ordinary Watercourse to the north of the site, on the opposite side of the A151 Holbeach Road, which drains to the wider IDB catchment. The discharge to this system will require a pumped outfall.
- 9.2 So that the development does not cause any downstream detriment, the maximum rate of discharge shall be restricted to as close as reasonably practicable to the equivalent Q_{bar} greenfield runoff rate from the site, this being determined to be 2.0l/s. On this basis the discharge would not be expected to lead to an increase in flood risk downstream of the site.
- 9.3 The proposed surface water system will be designed to accommodate a 1 in 30 year plus climate change allowance storm event without flooding, and the 1 in 100 year plus climate change allowance storm event without causing flooding of property or third-party land. Surface water storage will be provided by means of below-ground storage beneath parking and other hardstanding areas.
- 9.4 As per the requirements of the current national guidance, an additional 25% allowance on the 1 in 30 year design rainfall intensity and an additional 25% allowance on the 1 in 100 year design rainfall intensity will be considered in the design of surface water drainage systems.
- 9.5 As with any drainage system, it is possible that flooding may occur from manholes or gullies in the event that the system becomes blocked or is overwhelmed. This assessment has shown that these flows can be managed such that they do not have an adverse impact upon the proposed development or off-site properties, with exceedance flows expected to pond in less vulnerable areas of the site or follow the existing and proposed topography towards the south-east of the site.

- 9.6 As there are no public sewers close to the site, it is proposed that foul drainage from the new development will be managed by an on-site package treatment plant, with treated foul effluent discharged via the proposed surface water outfall, subject to an Environmental Permit being obtained from the Environment Agency if required.
- 9.7 The proposed strategy is illustrated in the following preliminary civil engineering design drawings:
- 1506/54/SK05.01 Drainage Strategy – Sheet 1 of 2
 - 1506/54/SK05.02 Drainage Strategy – Sheet 2 of 2
- 9.8 Suitable maintenance regimes will be required for proposed drainage infrastructure. A draft Drainage Maintenance Plan has been prepared for agreement with the LLFA, and is appended to this report.
- 9.9 A Land Drainage Consent (under the Land Drainage Act 1991) will be required from the IDB for any works affecting Ordinary Watercourses, including for the construction of any new surface water outfall.
- 9.10 The findings of this report are subject to the approval of the Regulatory Authorities. The detailed design and calculations shall be submitted to the Planning Authority for approval prior to construction on the development site.
- 9.11 Subject to compliance with the above, the proposed development can satisfy the requirements of the National Planning Policy Framework and the Planning Practice Guidance in relation to surface water management and foul drainage.

APPENDIX A

SITE LOCATION PLAN



Key

Development Site Boundary



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Project
**PROPOSED DEVELOPMENT
AT HOLBEACH ROAD,
SPALDING**

Client
**COMMERCIAL DEVELOPMENT
PROJECTS LTD**

Title
LOCATION PLAN

Date
MAY 2024

Drawn MGW	Scale AS SHOWN
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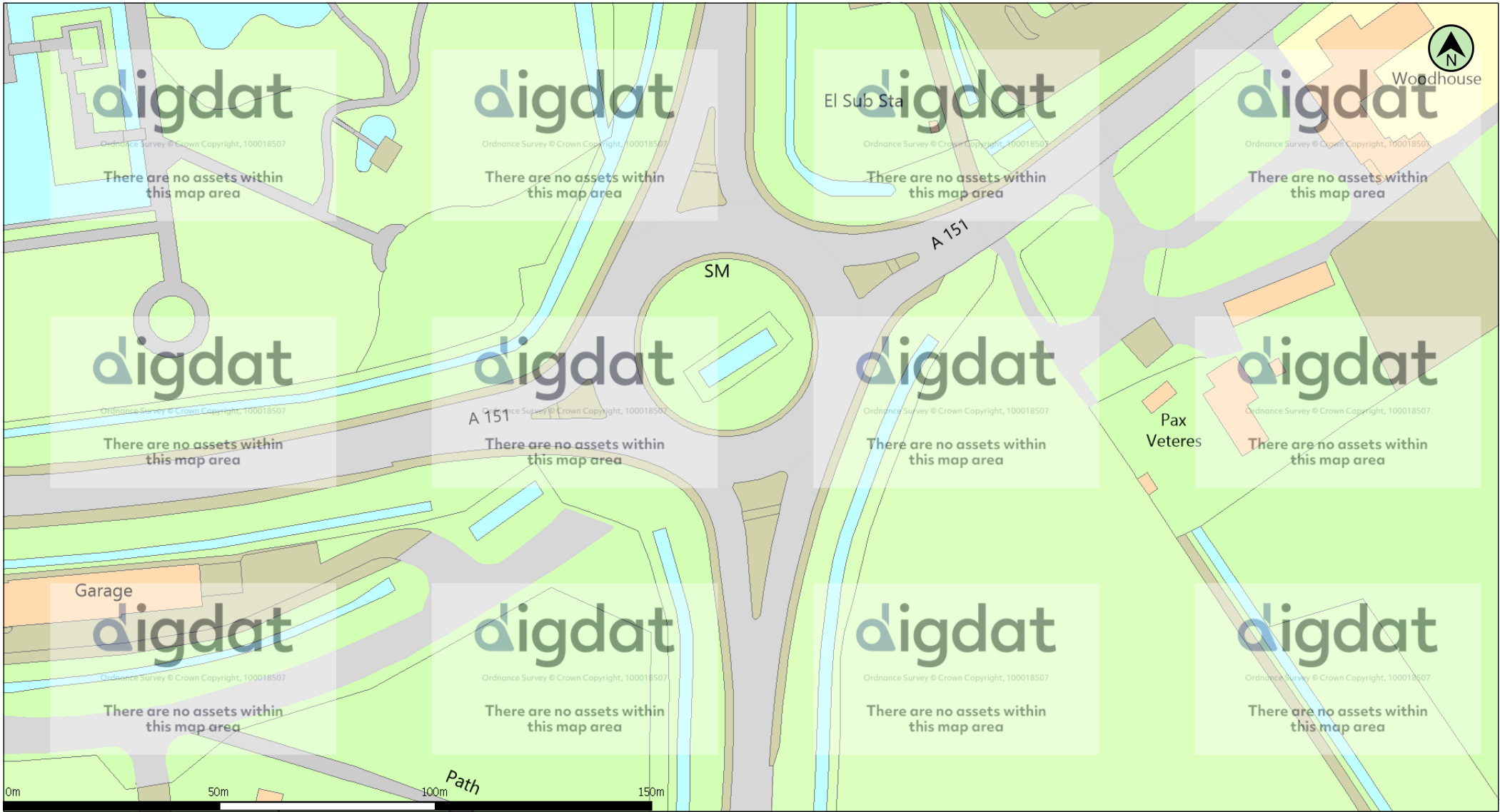
Job No.
1506/54

APPENDIX B

SITE TOPOGRAPHY

APPENDIX C

WATER AUTHORITY INFORMATION



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

*(Colour denotes effluent type)

andyhawkin@arpassociates.co.uk

Spalding

love every drop
anglianwater

APPENDIX D

INTERNAL DRAINAGE BOARD INFORMATION

Matthew Wilson

From: Planning Department <planning@wlma.org.uk>
Sent: Tuesday 14 May, 2024 4:02 pm
To: Matthew Wilson
Subject: RE: 1506-54 Flood risk and surface water management - Site at Spalding, Lincolnshire
Attachments: WMA_LDC_Application_Form-v16.pdf; WMA_LDC_Application_Form-v16.docx; 01_LDC_Guidance-v8.pdf

Our Ref: 24_27256_Q

Good Afternoon Matthew,

I can confirm that this site lies within the Internal Drainage District of the South Holland IDB, specifically within the pumped catchment known as Wisemans (catchment map available here: [CMT193P](#)). Immediately to the north lies a separate catchment known as Lords (catchment map available here: [CMT208P](#)).

Please see responses to your information request in **red** below:

- Any available modelled flood data outputs relevant to the site.

Please see below modelled water levels (for the 1 in 2, 1 in 30 and 1 in 100 + climate change allowance year events) for the closest IDB arterial (maintained) watercourses to the site, known as B25 Old Exeter Drain (Drain ID DRN193P2503) and R07 Lords (Drain ID DRN208P0704), which lie to the east and north of the site, respectively (refer to the catchment maps in the links above for details on the location of these two watercourses). **Please note the climate change scenario used in the Board's modelling may not meet current standards.**

Wisemans Pumped Catchment (B)

Drain Name	Drain ID	Chainage	Easting	Northing	Water Levels (Metres AOD)		
					2yr	30yr	100yr+CC
B25 Old Exeter Drain	DRN193P2503	2400	527493	324308	1.33	1.75	2.34
		1894	527448	323782	1.33	1.75	2.32
		1862	527447	323746	1.32	1.74	2.27

Model was undertaken in October 2010

For B25 Old Exeter Drain, I have compiled levels at three separate points (please use the Easting and Northings provided to see the locations). This IDB drain is to the east of the site, and we are aware of connections into this system from the riparian network from the west, as shown at chainage 1894 and 1862 in the table.

Lords Pumped Catchment (R)

Drain Name	Drain ID	Chainage	Easting	Northing	Water Levels (Metres AOD)		
					2yr	30yr	100yr+CC
R07 Lords	DRN208P0704	9305	526788	324031	1.44	2.07	2.48

Model was undertaken in October 2014

The data we hold for R07 Lords finishes at the point at which the open watercourse is then culverted within the verge parallel to the north of the A151 (at the approximate location X 526788, Y 324031). This is where the level is taken as shown in the table above.

- Any available flood defence breach/pumping station failure modelling outputs relevant to the site.

I have liaised with the Board's Area Manager, and we have no records of any flood defence breaches or pumping station failures in proximity to the site.

- Information on any known/historical flooding within or near to the site.

We are not aware of any known / historical flooding within or near to the site. I would recommend contacting the Lincolnshire County Council as they would investigate certain flooding events under their responsibilities as the Lead Local Flood Authority for the area. Further information, including links to completed and ongoing flood investigations, can be found on the LCC website: <https://www.lincolnshire.gov.uk/flood-risk-management/flood-investigations>.

The site lies adjacent to three Ordinary Watercourses: A watercourse on the southern boundary and a watercourse which passes through the east of the site are not board maintained, but are understood to be tributaries of the 'Wisemans' catchment of the South Holland Internal Drainage Board area, which has an eventual pumped discharge into the South Holland Main Drain. There is a further watercourse on the east of the site, adjacent to the A16/A151, which is considered likely to discharge to the same IDB catchment, but may be a Highway Drainage Asset. We would be grateful if you could confirm any knowledge of the connectivity between the various sections of open watercourse local to the site, including connectivity to any highway drainage and other sources of inflow.

As you have identified, the watercourses along the southern site boundary and through the east of the site are riparian (privately owned / maintained). Unfortunately, this means our knowledge of the condition and connectivity of the system here is limited and we would recommend investigations are undertaken as part of the drainage design to ensure a suitable flow path away from the site. As both are within the Wisemans catchment the assumption would be that the riparian system drains south / east towards the IDB's maintained network. As per the above, we are aware of connections to the Board's watercourse known as B25 Old Exeter Drain to the east at the approximate locations X 527448, Y 323782 and X 527447, Y 323746.

The LCC Highways department may be able to offer further information into the connectivity of the watercourse further to the east of the site alongside the A16 / A151 and the system serving the Highways infrastructure. Any connections beneath the A151 / north of the site would direct water towards the Lords catchment.

With respect to surface water management, the discharge of surface water by infiltration will be investigated as part of a forthcoming ground investigation, but we expect that this will not be feasible. We therefore envisage that there will be a requirement to discharge surface water to one of the watercourses local to the site. We propose the discharge will limited to as close as reasonably practicable to the equivalent greenfield rate. Based on a Qbar rate of 1.4l/s/ha and the proposed impermeable area of the development (circa 1.0ha) the theoretical discharge limit would be circa 1.4l/s. However, it is unlikely to be practicable to restrict flow to such a low rate without an unacceptable risk of orifice blockage, therefore we would suggest a discharge limit of 2.5l/s to 5.0l/s would be more practicable. We would appreciate if you could confirm agreement in principle to the above strategy, the maximum acceptable discharge rate, and confirmation of any specific requirements which have not been addressed.

A proposed discharge of surface water to a watercourse within the Board's district will require Land Drainage Consent in line with the Board's Byelaw 3. We do not offer any agreements in principle prior to a formal application for consent, however we recommend that any discharge of surface water is in line with the Non-Statutory technical standards for sustainable drainage systems (SuDS) and would therefore request that the rate is restricted to the calculated greenfield runoff rate or as close to this rate as practicably possible. For additional information, please note that the water table in this locality is relatively high and we would advise taking this into account when incorporating any below ground storage features into the design.

We will review the details of the proposal further upon receipt of a consent application. Any consent to discharge surface water will likely be conditional on the one off payment of a Surface Water Development Contribution, calculated in line with our Charges and Fees Policy.

I have attached a copy of the application form (as both a PDF and Word Doc for your preference), along with a guidance document. An application can be made by completing the form and emailing planning@wlma.org.uk or by posting a copy to Water Management Alliance, 28 Horsley's Fields, King's Lynn, Norfolk, PE30 5DD. There is an application fee of £100 for a Byelaw 3 application which can be paid using one of the options given in Section 10 of the form.

As can be seen from the attached plan, the proposed building is coincident with an existing drainage channel. It is proposed that the drain will be diverted around the new building. We would value your advice on the acceptability of this proposal and any further comments on this aspect of the scheme.

The proposed drain diversion will also require prior Land Drainage Consent from the Board. This application would be under Section 23, Land Drainage Act 1991 and the Board's Byelaw 4 for the alteration of a watercourse. An application for consent can be made within the same form as detailed above. The fee for watercourse alteration applications is £50. The Board's officers will review applications in accordance with the policies set out within our [Planning and Byelaw Strategy](#) (see Policy 3 on page 14 for watercourse alterations). We would ask for supporting documents, including any environmental surveys, to be provided alongside an application.

Further information on the Board's regulation of development can be found on our website here: <https://www.wlma.org.uk/south-holland-idb/development/>

If you have any questions on any of the above, please let me know.

Kind Regards,



Will Chandler BSc (Hons), MCIWEM

Sustainable Development Officer

Water Management Alliance

m: 07826 940760 | dd: 01553 819630 | william.chandler@wlma.org.uk

Registered office: Pierpoint House, 28 Horsley's Fields, Kings Lynn, Norfolk, [PE30 5DD](#)

t: 01553 819600 | e: info@wlma.org.uk | www.wlma.org.uk

What3Words: [caring.employ.visit](#)

WMA members: [Broads Drainage Board](#), [East Suffolk Water Management Board](#), [King's Lynn Drainage Board](#), [Norfolk Rivers Drainage Board](#), [Pevensey and Cuckmere Water Level Management Board](#), [South Holland Drainage Board](#) and [Waveney, Lower Yare and Louthland Drainage Board](#)

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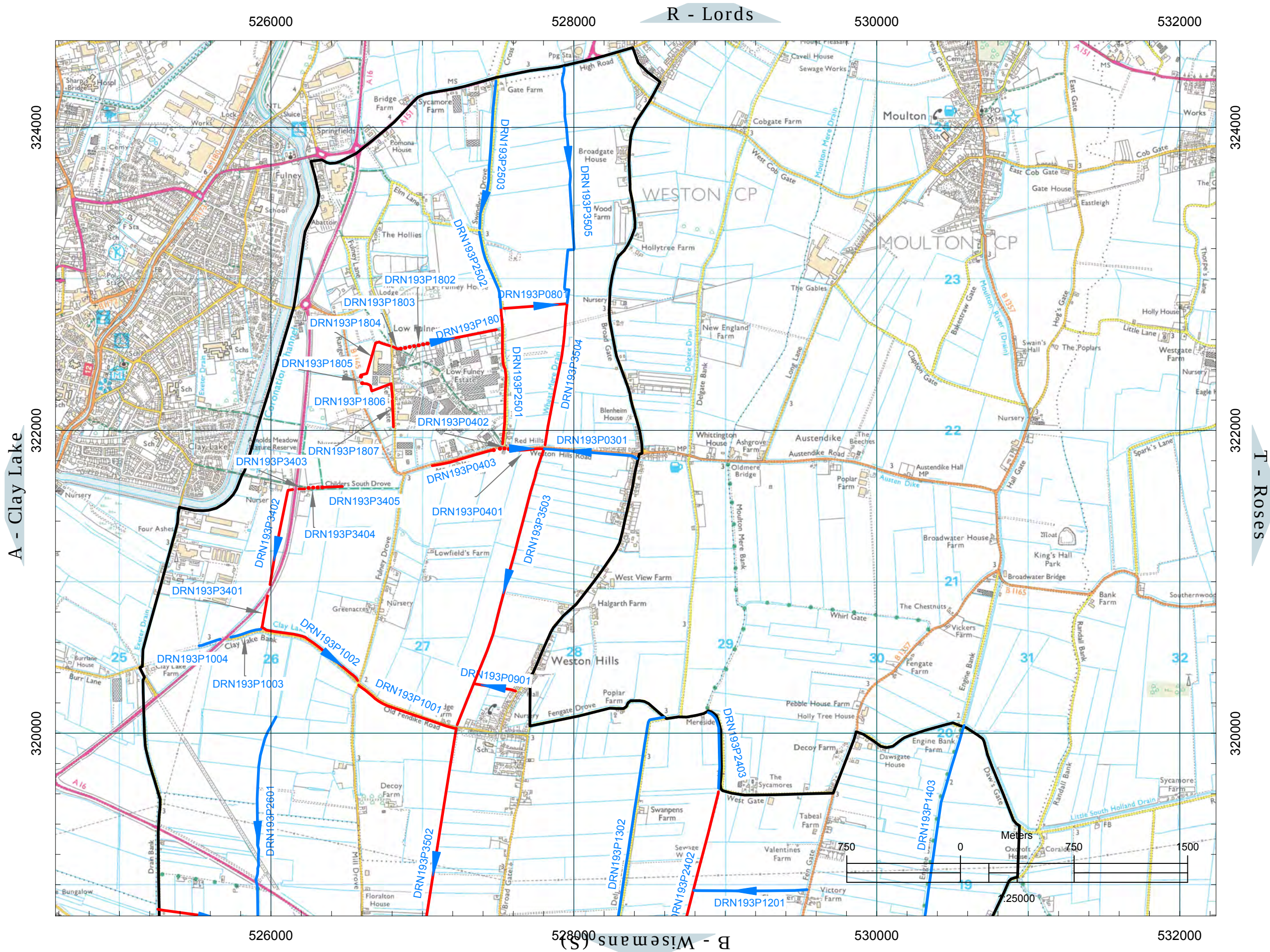
Defenders of the Lowland Environment

From: Planning Department

Sent: Tuesday, May 7, 2024 4:37 PM

To: Matthew Wilson <MatthewWilson@arpnorthwest.co.uk>

Subject: RE: 1506-54 Flood risk and surface water management - Site at Spalding, Lincolnshire



Wisemans (N)

South Holland Drainage Board

LEGEND

- Catchment Boundary
- High Priority Watercourse
- IDB Ordinary Watercourse
- High Priority Pipeline
- Ordinary Pipeline
- Water Control Structure
- Pumping Station
- Inland Sluice
- Tidal Sluice

KEY MAP

SCALE	SHEET NUMBER
Best fit	© Crown Copyright and database rights [2012]. All rights reserved OS licence number 100029527.
PLOT DATE	CMT193P
05/01/2016	
FILE NAME	
SHIDB_webmap2013.dwg	

