



The Church Commissioners for England CCfE

Land to the north of Fiskerton

High Level Drainage & Flood Risk Assessment

December 2016



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Land to the north of Fiskerton – High Level Drainage and Flood Risk Assessment



This report has been prepared for The Church Commissioners for England (CCfE) and any duty of care to any other party is excluded. Any other party using or intending to use this information for any other purpose should seek the prior written consent of WYG.

The conclusions reached are those which can reasonably be determined from the sources of information referred to in the report and from our knowledge of current professional practice and standards. Any limitations resulting from the data are identified where possible but both these and our conclusions may require amendment should additional information become available. The report is only intended for use in the stated context and should not be used otherwise.

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1 Executive Summary

Existing Site	<p>The proposed development site is located to the north of Ferry Road, Fiskerton, to the east of Lincoln City (grid reference 505425mE, 372190mN).</p> <p>The land under consideration occupies an area of 10.4ha and is currently occupied by pasture and agricultural farm land.</p>
Development Proposals	<p>The proposed development comprises the construction of approximately 200 residential dwellings.</p> <p>According to Table 2 of the NPPF, the proposed residential development would be considered as a 'more vulnerable' land use classification in respect to flood risk vulnerability.</p>
Flood Risk Assessment	<p>The site is shown to lie within Flood Risk Zone 1. This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding (<0.1% annual exceedance probability).</p> <p>The principal source of flood risk to the development is considered to be an increase in surface water run-off as a consequence of increasing the impermeable area of the site following development.</p> <p>It is considered that the proposed development is at low risk of flooding from sources including tidal, sewers and groundwater. Although fluvial flooding from watercourses through the site is considered a risk, further liaison is required to determine the level of protection the existing attenuation ponds provide to the site and the village to the south.</p>
Site Drainage	<p>In accordance with the recommendations in the NPPF, the design of the new development will adopt measures to reduce the surface water discharge through the use of sustainable drainage techniques. Surface water run-off will be attenuated within the site drainage system to mitigate off-site flooding and to protect vulnerable areas within the site.</p> <p>The new site drainage system will provide sufficient storage for up to the 1 in 100 year plus 40% climate change storm event.</p>
Flood Risk Management	<p>The site lies in Flood Risk Zone 1 and is considered to be suitable for the proposed development. Through the incorporation of Sustainable Drainage Systems to manage the surface water run-off, the proposed development will not increase the risk of flooding within the site or elsewhere.</p>



Conclusions	It is concluded that the site is appropriate for the proposed development and a practical means of surface water management for the site can be provided.
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2 Introduction

2.1 Background

This report has been commissioned by The Church Commissioners for England (CCfE) to inform the site Masterplan and support the Neighbourhood Plan consultation for a residential development of approximately 200 dwellings.

This Flood Risk Assessment is undertaken in accordance with the National Planning Policy Framework (NPPF, March 2012) and the accompanying Planning Practice Guidance issued by the Department for Communities and Local Government (March 2014). Recommendations and guidance set out within BS 8533: 2011 Assessing and Managing Flood Risk in Development – Code of Practice – Code of Practice has also been considered in the production of this report.

2.2 Site Location

The development site is located to the north of Ferry Road, Fiskerton, to the east of Lincoln City (grid reference 505425mE, 372190mN). The land under consideration occupies an area of 10.4ha and is currently occupied by pasture and agricultural farm land. The Site location and boundary are shown in Figure 1 below.

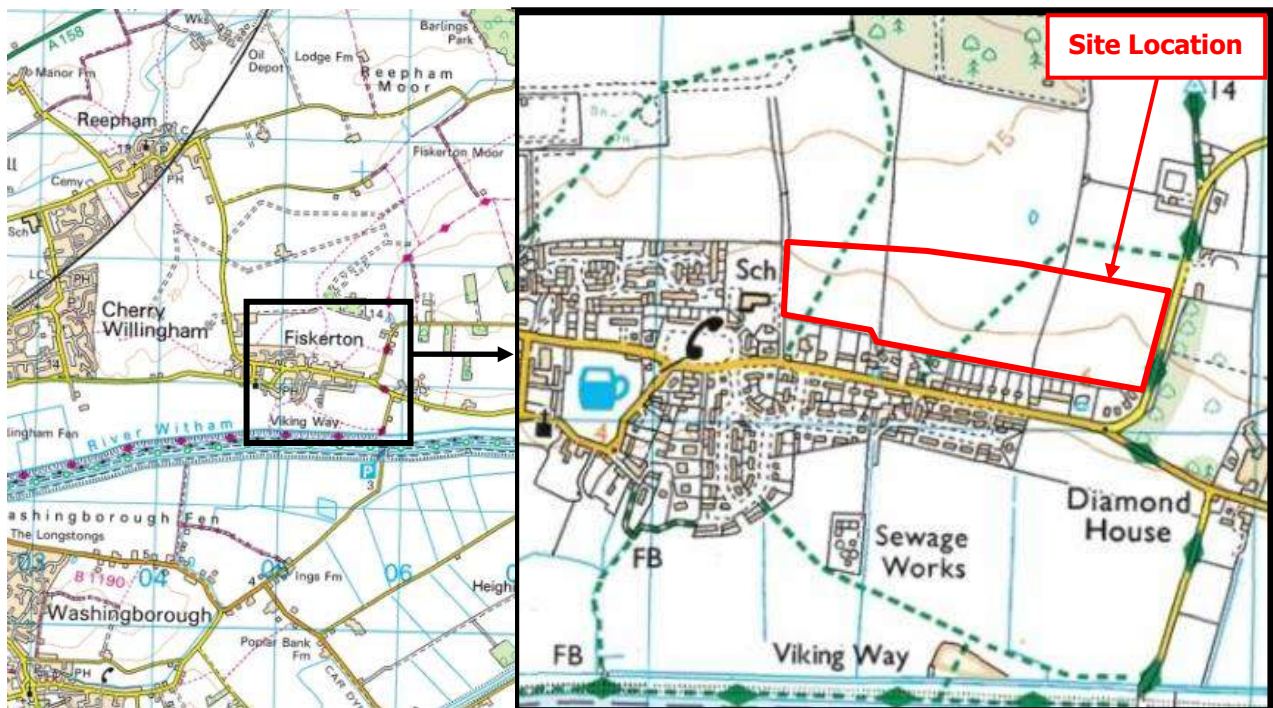


Figure 1: Site Location Plan



The site is bounded by:

- Greenfield land to the north;
- Residential dwellings and Ferry Road to the south;
- Hall Lane to the east; and
- Fiskerton Church of England Primary School to the west.

2.3 Data Collection

This report is based on the following data sources:

- JTP Land Budget Plan;
- Environment Agency (EA) online mapping;
- British Geological Survey (BGS) Mapping (BGS website).
- West Lindsey District Council Strategic Flood Risk Assessment;
- Lincolnshire County Council Preliminary Flood Risk Assessment.

2.4 Proposed Development

The proposed development comprises the construction of approximately 200 residential dwellings. A proposed Indicative Masterplan is included within Appendix A of this report.

According to the National Planning Policy Framework (NPPF) Flood Vulnerability Classification (Table 2, page 6), residential developments and educational establishments are classed as 'more vulnerable' in respect to flood risk. The proposed development is therefore considered appropriate within Flood Risk Zone 1 and does not require an Exception Test.

3 Data

3.1 Environment Agency

The EA's website indicative flood risk map was consulted and the site is shown to lie within Flood Risk Zone 1 (i.e. land assessed as having a less than 0.1% annual probability of river or sea flooding). Therefore, in accordance with Table 3 of the NPPF, the site is considered to be suitable for the proposed development. The EA flood risk map is shown in Figure 2 below.

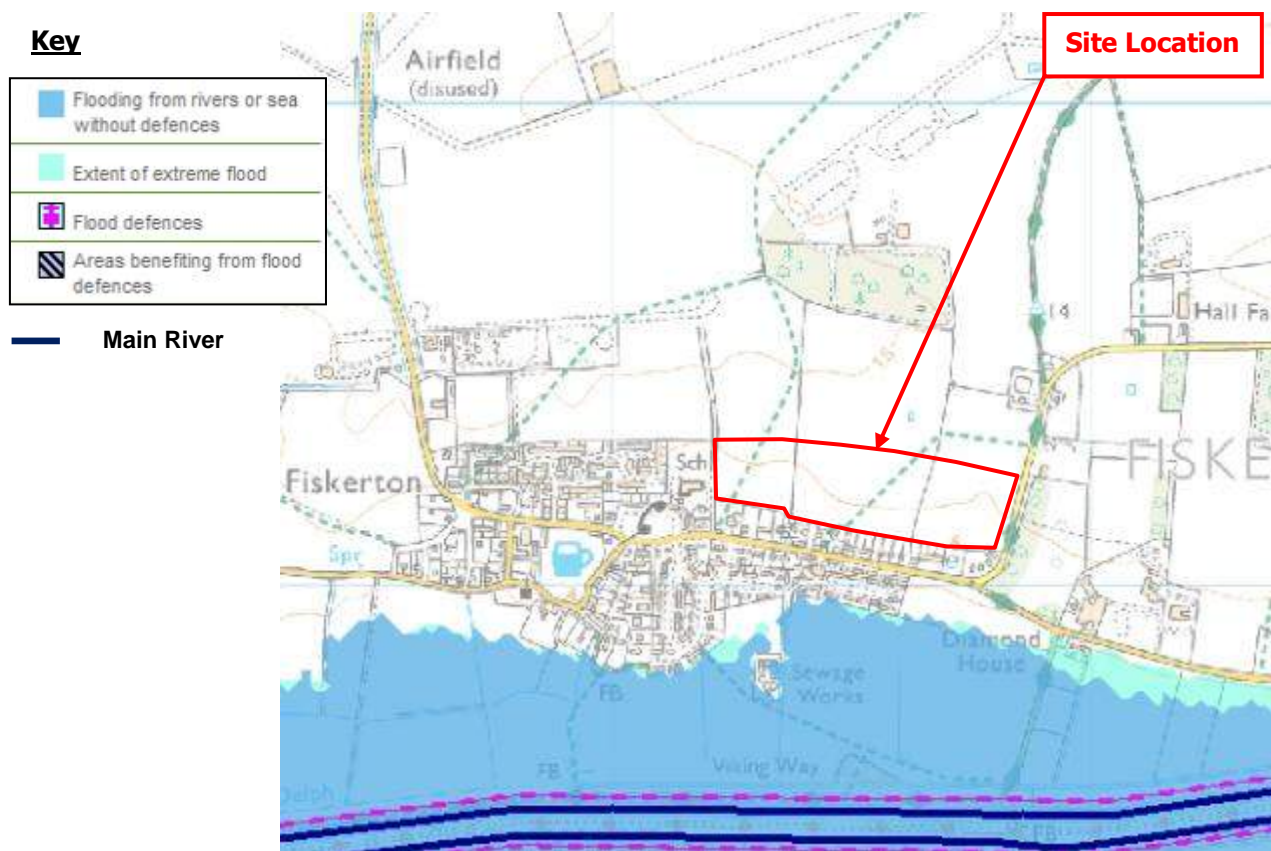


Figure 2: Environment Agency website flood risk map

The nearest main river to the site is the River Witham located approximately 500m to the south of the proposed development.

Further maps that are available on the EA website include groundwater source protection zones, risk of flooding from surface water and risk of flooding from reservoirs and these have been reviewed and discussed within Section 4 of this report.

Since the application site is located within Flood Zone 1, no correspondence has been undertaken with the EA as responsibility for flood risk is now covered by the Lead Local Flood Authority (LLFA) for the area, this being Lincolnshire County Council.

Climate Change Allowance Update

On 19th February 2016 the EA published updated guidance on climate change allowances to apply to all development in England where planning approval is required.

The updated guidance includes advice on peak rainfall intensity allowances, the impact is summarised in the table as follows: -

Applies across all of England	Total potential change anticipated for 2010 to 2039	Total potential change anticipated for 2040 to 2059	Total potential change anticipated for 2060 to 2115
Upper end	10%	20%	40%
Central	5%	10%	20%

Peak rainfall intensity allowance in small and urban catchments (use 1961 to 1990 baseline)

The surface water drainage strategy has been designed based on providing surface water attenuation storage for the 1 in 100 year plus 40% climate event storm event.

3.2 Anglian Water

A Pre-Development Enquiry has been submitted to Anglian Water, at the time of writing this report no response had been received.

3.3 Witham 3rd District Internal Drainage Board

Initial consultation with the Witham 3rd District Internal Drainage Board (IDB) has been undertaken. They stated they are aware of the attenuation ponds currently located on the site but we are awaiting additional details from them relating to these features. In the meantime the Client has provided us with a Licence for the attenuation features and this provides us with an indication of the size and location of the features.

3.4 West Lindsey District Council Strategic Flood Risk Assessment

The West Lindsey District Council Strategic Flood Risk Assessment (SFRA), undertaken by AECOM, dated July 2009 has been reviewed. The report contains detailed flood risk assessments for four large study areas, including Gainsborough, Market Rasen, Saxilby and Bardney. These areas have been identified by the District Council, as they are considered to be at risk of flooding or where development could increase the risk of flooding elsewhere. The Fiskerton area is not located within the four areas identified to be at higher risk of flooding.

The SFRA indicates that there have been historical flooding incidents in Fiskerton. It was reported that four properties within Fiskerton were affected by flooding during the storms of July 2007; the potential source of the flooding is stated as local ditches and run-off from fields. The SFRA also states that in October 1993 the



River Witham flooded from its north bank towards Ferry Road and the village of Fiskerton, however, only a small number of properties were affected.

3.5 Lincolnshire County Council

Lincolnshire County Council (LCC) is the LLFA for the area. LCC keeps a record of all its flooding investigations under Section 19 of the Flood and Water Management Act. A summary of these investigations is made publicly available by LCC on its website in the form of a summary spreadsheet; a copy of which is included within Appendix D. With reference to the section 19 spreadsheet, there are no recorded flooding incidents in the Fiskerton area requiring investigation.

The Preliminary Flood Risk Assessment (PFRA), dated June 2011, produced by LCC has also been consulted. The principal flood risk sources in Lincolnshire are tidal and fluvial flooding and these are not covered within the PFRA. The PFRA concentrates on local flooding which is likely to result from heavy rainfall causing surface water run-off, overflowing ordinary watercourses and sewers resulting in surface water flooding. The PFRA also states that more prolonged flooding may occur from increasing groundwater levels as aquifers fill and surcharge.

3.6 British Geological Society Mapping

The British Geological Society (BGS) mapping (1:50,000 scale) shows that the bedrock geology at the site is comprised of Oxford Clay Formation Mudstone with superficial deposits of Till, Mid Pleistocene Diamecton.



4 Flood Risk Assessment

4.1 Fluvial Flood Risk

The EA flood map for Planning (Rivers and Sea) shows that the site lies within Flood Risk Zone 1, this is indicated on Figure 2 contained within section 3.1 of this report. The River Witham (EA Main River) flows in an easterly direction across land to the south of the site and is located approximately 500m from the site at its nearest point. The EA flood map shows that the extent of Flood Zone 2 and Flood Zone 3 associated with River Witham is approximately 150m to the south of the sites southern boundary. Therefore, the site is not considered at the risk of fluvial flooding from River Witham.

Within the SFRA, the Fiskerton area is not considered at the risk of fluvial flooding from the River Witham and as such no overtopping or breach analysis of flood defences has been carried out at the site location.

4.2 Tidal Flood Risk

The site is remote from the coast and, although the River Witham runs close (approximately 500m) to the site southern site boundary, the river is not tidal at this location and as such the site is not considered to be at risk of tidal flooding.

4.3 Groundwater Flooding

Groundwater flooding can occur when heavy rainfall causes aquifers to reach the surface of the ground. The EA website map of groundwater zones shows the site is not located within a groundwater source protection zone but indicates the presence of a secondary aquifer superficial deposits designation.

According to the West Lindsey District Council SFRA; groundwater flooding can be disregarded as a significant flood risk in West Lindsey. The only location where the risk of groundwater flooding is likely to rise is in the chalk bournes along the dip slope of the Wolds. The site is not underlain by chalk and therefore groundwater flooding is not considered to pose a significant risk to the development site.

4.4 Surface Water Flooding

Ordnance Survey mapping and LiDAR data shows that the site slopes generally from north to south. The Greenfield land to the north of the site is likely to contribute overland flows towards the site.

The EA map showing the Risk of Flooding from Surface Water has been reviewed and is shown in Figure 3 on the following page. The map indicates that the majority of the site is at very low risk of surface water flooding (annual probability of flooding of greater than 1 in 1000 years).

There are a number of small areas within the site that are shown to be at low risk from surface water flooding (annual probability of flooding of between 1 in 100 and 1 in 1000 years). These areas are likely to be caused by small depressions within the topography.



Figure 3: Environment Agency website surface water flood risk map

Additional surface water storage will be provided within the new drainage system for the development to allow for the anticipated increase in rainfall intensities over the life of the development due to climate change. The proposed development will not increase surface water run-off from the site and therefore no increase in flood risk to off-site areas is anticipated. As such, surface water flooding is not considered to pose a significant risk to the site.

To mitigate against existing surface water issues that currently affect the village to the south of the site, a surface water mitigation strategy has been installed incorporating two attenuation ponds amongst other features. Details of the mitigation strategy can be found in the Licence contained in Appendix B of this report. Further liaison with the IDB is required to determine the level of flood protection the existing attenuation affords the site.

4.5 Sewer Flooding

Flooding from sewers can occur as a result of sewer blockages, or collapses, or as a result of the sewers not having sufficient capacity to convey high flows, particularly during severe rainfall events.

Anglian Water have been sent a Pre-Development Enquiry but at the time of writing this report no response has been received.



The new surface water drainage network constructed within the site, as part of the development, will be designed to current standards and will not increase the risk of flooding either within the site or the surrounding areas downstream.

4.6 Artificial Sources

Although the probability of a catastrophic dam failure is considered to be extremely low, the consequence of such an event would be severe. The EA online map showing the Risk of Flooding from Reservoirs shows that the site is not located within an area at risk of flooding and therefore the site is not considered to be at risk of flooding from artificial sources.

4.7 Climate Change

In accordance with the NPPF, the effects of future climate change have been considered.

In accordance with BS8533: 2011 a design life of 100 years is assumed for the residential development. Based on this design life a 40% increase in peak rainfall intensity (2085 to 2115) is applicable to the site in accordance with NPPF Table 5.

Surface water run-off could represent a risk for the site when the effects of climate change are considered. An outline surface water drainage strategy produced as part of this study will take into account the potential impact of climate change and the drainage network will be designed to accommodate run-off during all events up to and including 100 year plus 40% to allow for increases in rainfall intensity due to the climate change for the expected lifespan of the development in line with the NPPF. Additional storage will be provided within the new drainage system to allow for anticipated increase in rainfall into intensities over the life of the development due to climate change.

5 Site Drainage

5.1 Existing Site Drainage

As described in Section 3.2, the existing site is currently greenfield land consisting of pasture, agricultural farm land and two attenuation ponds to the south west of the site. The plan contained in the Licence shows two existing attenuation ponds within the site to alleviate flooding to the village to the south of the site.

Surface Water

Based on the topography of the site, it is assumed that surface water run-off currently collects in the drains crossing the site and eventually outfalls to the River Witham to the south of the site.

The greenfield run-off rates from the existing site have been calculated using the ICP SuDS method (for sites less than 50ha, in line with the Institute of Hydrology Report 124) in the software package MicroDrainage. The greenfield run-off rates from the site based on a developable area of 8.92 ha is listed below in Table 1. The output from MicroDrainage is included within Appendix C of this report.

Table 1 – Greenfield Run-off Rates

Return Period	Greenfield Discharge Rate	Greenfield Discharge Rate Per hectare
Q_{bar}	32.7 l/s	3.67 l/s/ha
Q (1 Year Return period)	28.5 l/s	3.20 l/s/ha
Q (30 Year Return Period)	78.6 l/s	8.81 l/s/ha
Q (100 Year Return Period)	116.5 l/s	13.06 l/s/ha

Foul Water

There are currently no foul flows currently discharging from the site. The Anglian Water Sewer Record Plan is yet to be received as part of the Pre-Development enquiry response.

5.2 Proposed New Development Drainage

5.2.1 Surface Water

In accordance with the recommendations in the NPPF, the design of the new development will adopt measures to reduce the impact of surface water run-off through the use of Sustainable Drainage Systems (SuDS).

The EA generally requires the assessment of the use of SuDS using the following hierarchy of techniques.



1. Surface water drainage attenuated through the use of infiltration methods such as soakaways unless ground conditions are proven to be inappropriate due to insufficient porosity or if gross contamination is present.
2. Surface water drainage attenuated through the use of above ground sustainable drainage techniques such as swales, attenuation ponds (both formal and informal as part of the general landscaping design), green detention areas and/or areas of permeable paving (especially within parking and pedestrian areas). All these methods can be designed into site layouts should the ground not be sufficiently permeable or where ground contamination is present and would still meet most of the core principles as set out in the Interim Code of Practice and CIRIA609 (p.29).
3. If the above cannot contain the full attenuation volumes required, then consideration will be given to their use in a combined system with other attenuation storage techniques.

Generally the EA requires that source control techniques such as permeable paving, swales and attenuation ponds are considered for inclusion in the site design.

However, the site geology indicates infiltration to the ground is unlikely to be viable.

Surface Water Discharge Arrangement

The drainage design of the new development should mimic the existing scenario. If surface water run-off cannot be discharged via infiltration then the next option should be discharging into the watercourse. As discussed in Section 4.1 there are drainage channels located at close proximity of the site. It is therefore estimated the surface water from the site will discharge to existing sewers or drains to the south of the site.

To ensure that flood risk within either the site or the surrounding land is not increased, all surface water discharges to the public sewer or drains are to be restricted to 32.7 l/s in accordance with the existing Qbar run-off rate of the site. Following development of the site, the drainage system will mimic the characteristics of the existing site during the more frequent events and would provide a significant betterment during the less frequent storm events.

Surface Water Storage Volumes

The proposed development comprising approximately 200 dwellings, access roads and parking areas will increase the sites impermeable area. Due to the increase in impermeable area, the surface water run-off for the development will be greater than for the existing greenfield site. As such in order to meet the restricted discharge rate attenuation storage will be required. This could be provided in the form permeable pavings, filter drains and detention ponds within the site drainage system. The discharge from the site will be restricted via the use of flow control devices such as a Hydro-brake.

Using FEH rainfall data, a source control analysis was carried out in MicroDrainage Windes to estimate the potential storage volumes for a variety of return period storm events up to the 1 in 100 year return period storm and including an allowance for climate change of 40%.



Surface Water Drainage Arrangement

Drawing 00952-SK-014 JTP – Land Budget Plan within Appendix A shows the areas allocated for surface water attenuation provision within the site. The proposal will be required to be revised following a further review of the master plan, liaison with Anglian Water and the IDB.

At this early stage, the outfall rate will be limited to a maximum of 32.7 l/s across the numerous surface water outfalls from the site. The total attenuation likely to be required to provide adequate surface water storage to mitigate against flooding up to the 1 in 100 year storm event including a 40% allowance for climate change is 4,400m³. This volume of attenuation is currently shown in the form of four attenuation ponds. The size of the ponds will be required to be reviewed as part of the next phase of works.

Water Quality

The EA generally requires at least two forms of treatment for the surface water discharges from the trafficked area. The proposed drainage strategy includes filter drains, permeable paving and an attenuation pond. In addition to providing storage, these arrangements will also provide treatment to surface water run-off before discharging off-site.

5.2.1 Foul Discharge

The proposed development includes the construction of approximately 200 dwellings. An estimated foul discharge from the site, based on 4000l/dwelling/day as recommended in Sewer for Adoption 7th edition, is 10.3 l/s. Anglian Water are yet to confirm a point of outfall or if the existing system has adequate capacity for the additional flows.



6 Flood Risk Management and Mitigation Measures

The NPPF recommends that a risk-based approach and Sequential Test are used in order to determine whether a site is suitable for a particular development. The assessment of risk has been considered in line with the requirements of the NPPF and are summarised as follows;

6.1 Sequential Test

The proposed development site is shown to be located within Flood Risk Zone 1 and is classified as a 'more vulnerable' development. Therefore, in accordance with the NPPF, the site is considered suitable for the proposed development.

6.2 Mitigation of Surface Water Flood Risk

Ground floor levels within the proposed development should be set a minimum of 150 mm above surrounding ground levels in accordance with Building Regulations so the future risk of flooding from surface water run-off will be minimal. External paved areas should be designed to fall away from the new buildings and in particular to channel flows away from entrances into buildings.

6.3 Proposed Site Drainage

In accordance with the recommendations in the NPPF, the design of the new development will adopt measures to reduce the surface water discharge through the use of sustainable drainage techniques. Surface water run-off will be attenuated within the site drainage system to mitigate off-site flooding and to protect vulnerable areas within the site.

Localised attenuation is required to prevent surcharging and flooding of the drainage system following development of the site. An indication of the potential attenuation volumes to limit the flows to meet Anglian Water permitted discharge rate has been provided in Section 5.2.

Attenuation storage could take the form of an above ground attenuation pond at the downstream end of the drainage system together with permeable paving with sub-base storage at the upstream parts of the drainage system providing sufficient volume such that no off site flooding occurs for up to the 1 in 100 year event including a 40% increase in run-off for climate change.

Maintenance arrangements for the SuDS on the site are to be agreed following further discussions with the local authority, water company and IDB.



7 Conclusions

This report has been commissioned by The Church Commissioners for England (CCfE) to inform the site Masterplan and support the Neighbourhood Plan consultation for a residential development of approximately 200 dwellings.

The development site is located within Flood Zone 1 according to the EA Flood Risk Map. In accordance with Table 2 of the NPPF, the land use of the proposed development site is classified as 'more vulnerable', and therefore, in accordance with Table 3 of the NPPF, the site is considered to be suitable for the proposed development.

The principal source of flood risk to the development is considered to be an increase in surface water run-off as a consequence of increasing the impermeable area of the site following development.

To mitigate this risk, the site drainage is proposed to be discharge at a rate of run-off permitted by Anglian Water and the IDB, subject to their agreement it currently proposed to discharge at a similar rate to the existing Greenfield QBAR rate of flow. Excess surface water will be stored within an attenuation pond and possibly permeable paving sub-base storage. Additional storage will be provided within the new drainage system to allow for the anticipated increase in rainfall intensities over the life of the development due to climate change.

The site is considered at low risk of flooding from sewers, overland flow and groundwater. It is noted a flood alleviation scheme has been constructed within the site previously, in order to mitigate against flooding of the village to the south of the site. The level of protection against flooding these features afford the site is to be determined, through further liaison with the IDB.

This report concludes that the site is at low risk of flooding. Through incorporation of appropriate SuDS techniques the development will not increase flood risk elsewhere in the catchment. Furthermore it is concluded that there is a practical means of surface water and foul water management for the site.



Appendix A - Drawings

00952-SK-014 JTP – Land Budget Plan



- Gross site area (10.4 Ha)
 - Developable area (includes roads, open space and buffer planting) (7.82 Ha)
 - Open Space (includes drainage easements) (1.52 Ha)
 - Site access
 - Existing access route as part of flood mitigation scheme
 - Existing Public Right of Way
 - Existing drain
- circa. 195 dwellings @ 25 dph



Appendix B – IDB Licence

IDB Licence

DATED

20 AUGUST

2010

CHURCH COMMISSIONERS FOR ENGLAND (1)

PHILIP MARTIN GOOD (2)

FISKERTON PARISH COUNCIL (3)

LINCOLNSHIRE COUNTY COUNCIL (4)

WEST LINDSEY DISTRICT COUNCIL (5)

LICENCE

relating to
property situate at Fiskerton
Lincoln

FARRER & CO LLP
66 Lincoln's Inn Fields
London WC2A 3LH

THIS AGREEMENT is made the 20th day of August 2010

BETWEEN

- (1) **CHURCH COMMISSIONERS FOR ENGLAND** of Church House Great Smith Street London SW1P 3AZ ("the Commissioners")
- (2) **PHILIP MARTIN GOOD** of Reepham Manor The Green Reepham Lincoln LN3 4DH ("the Tenant")
- (3) **FISKERTON PARISH COUNCIL** c/o Clerk to the Parish Council 15 St Clement's Drive Fiskerton Lincoln LN3 4HN ("the Parish Council")
- (4) **LINCOLNSHIRE COUNTY COUNCIL** c/o Headteacher Fiskerton CE Primary School Ferry Road Fiskerton Lincoln LN3 4HU ("the County Council")
- (5) **WEST LINDSEY DISTRICT COUNCIL** of Guildhall Marshalls Yard Gainsborough Lincolnshire DN21 2NA ("the District Council")

WHEREAS

- (A) The District Council has agreed to carry out the Scheme which has been designed to alleviate general drainage problems relating to surface water disposal within the area of Fiskerton
- (B) The Commissioners the County Council and the Parish Council have agreed to the carrying out of the Scheme
- (C) The Commissioners the County Council and the Parish Council as owners of (inter alia) the Property and the Tenant as tenant of part of the Property have agreed to grant the District Council and the Parish Council a licence to enter the Property in order to (a) carry out the Works and (b) subsequently maintain the Scheme

- (D) On completion of the Scheme and in consideration of the payment of the Sum the Parish Council has agreed to adopt the Scheme and will be responsible for the future maintenance of it

NOW IT IS AGREED as follows:

1. Definitions

1.1 The following words and expressions have the following meanings:

"Access Route"	means the access route shown with a green arrow on the plan at Appendix A to Schedule 2 or such other route as shall be determined from time to time by the Surveyor acting in his absolute discretion
"Fee"	means the sum of Ten Pounds (£10)
"the IDB"	means the Witham Third Internal Drainage Board
"Infrastructure"	means the ditches pipes conduits culverts and other infrastructure associated with the Scheme
"Term"	means the period commencing on 8 August 2010 and ending on the date on which the District Council and Parish Council's rights are determined under Clause 7 or on 7 August 2109 if earlier
"Property"	means the property situate at Fiskerton Lincoln and shown for identification purposes edged red on the attached plan marked "Property"
"Purpose"	means the purpose of entering and using the Property to carry out the Scheme

"Scheme" means a scheme to alleviate general drainage problems relating to surface water disposal within the area of Fiskerton as set out in Schedule One

"Sum" means the commuted sum of Three Thousand Pounds (£3,000)

"Surveyor" means the Commissioners' surveyor for the time being

"Works" means the construction work necessary to give effect to the Scheme as set out in Schedule Two

1.2 Words importing one gender are to be construed as importing any other gender

1.3 Words importing the singular are to be construed as importing the plural and vice versa

1.4 References to persons include bodies corporate and vice versa

1.5 Clause headings do not affect the construction of this Licence

1.6 Save where otherwise stated any reference to a numbered clause or schedule means the clause or schedule in this Licence which is so numbered

1.7 References to the parties shall where the context so admits include reference to successors in title

2. The Grant of the Licence

2.1 In consideration of the obligations to be undertaken by the District Council and the Parish Council pursuant to this Licence and the payment of the Fee to the Commissioners the County Council and the Parish Council in equal shares (the receipt of which is hereby acknowledged) the Commissioners the County Council and the Parish Council HEREBY GRANT and the Tenant acknowledges the grant of licence to the District Council and the Parish Council and their agents contractors

employees and persons authorised by them to enter and use the Property for the Purpose during the Term subject to and upon the following conditions:

- 2.1.1 the District Council and the Parish Council shall occupy or use the Property as licensee only
- 2.1.2 no tenancy shall be created by this arrangement nor shall any such be sought or claimed by the District Council or the Parish Council at any time
- 2.1.3 the District Council shall be entitled to enter onto the Property until the completion of the Works and the Parish Council shall thereafter be entitled to enter onto the Property for the Term so long as they both diligently comply with the material provisions of this Licence (including those in Schedule One and Schedule Two)
- 2.1.4 access to the Property shall be by means of the Access Route only

3. User

- 3.1 The District Council and the Parish Council shall enter onto or use the Property solely for the Purpose
- 3.2 The District Council and the Parish Council shall comply at all times with all statutes and all regulations and instruments made thereunder relating to their use and occupation of the Property
- 3.3 The District Council and the Parish Council agree when carrying out the Works and any subsequent maintenance to the Scheme:
 - 3.3.1 that any works shall be carried out and completed to the satisfaction of the IDB and the Surveyor in a good and workmanlike manner with all reasonable speed causing as little damage to the Commissioners' land as reasonably possible and upon completion of the Works forthwith to make good the Commissioners' land (including replacement of the topsoil and re-seeding where necessary) and restore it to its

former state and condition to the Surveyor's reasonable satisfaction and to pay proper compensation for any damage which cannot be made good

- 3.3.2 if so required by the Surveyor to erect and maintain around the site of the Works for the period of any Works and thereafter to remove a stockproof fence of a design to a specification and in a position approved by the Surveyor
- 3.3.3 not to damage the Commissioners' land and to make good at the District Council and the Parish Council's expense to the satisfaction of the Surveyor all damage caused to the Commissioners' land by the exercise of the rights granted by this Licence including without limitation the restoration of walls fences hedges roads and access ways and roads and the replacement and reseedling of topsoil or to pay proper compensation where such damage cannot be made good and to pay compensation for all crop loss loss of grazing and loss of entitlement to the single farm payment or any other subsidy or quota arising from the Scheme or the Works

4. Maintenance

- 4.1 The Parish Council agrees that in consideration of payment of the Sum paid by the District Council to the Parish Council it will maintain the ditch and outfall as detailed in Schedule One and Schedule Two hereto by carrying out an annual inspection and carrying out such works as are necessary to ensure the free flow through the ditch and outfall
- 4.2 The Parish Council's right to enter onto the Property under clauses 2.1.3 and 2.1.4 above for the purpose of maintaining the Scheme shall be a right of entry over the Access Track with or without vehicles at all reasonable times subject to the Parish Council giving reasonable notice of the intention to enter to the Surveyor and the County Council save in the case of emergency and on the Parish Council or its agents complying with the Surveyor's reasonable requirements as to access and maintenance works on the Commissioners' land

5. **Alienation**

Neither the District Council nor the Parish Council shall assign transfer or dispose of this Licence in any way whatsoever

6. **Indemnity**

The District Council and the Parish Council will indemnify the Commissioners the County Council the Parish Council the Tenant and the IDB against any losses damages costs claims and liability caused or arising directly from:

- 6.1 any breach by the District Council or the Parish Council of the terms of this Licence
- 6.2 any failure by the District Council or the Parish Council to vacate the Property in accordance with the terms of this Licence
- 6.3 the grant of or exercise of all or any of the District Council or the Parish Council's rights granted under this Licence
- 6.4 the District Council undertaking the Works

7. **Termination of Licence**

This Licence shall terminate (without prejudice to any rights in respect of any breach of the terms of this Licence)

- 7.1 immediately on notice given to the District Council or the Parish Council by the Commissioners at any time following any breach by the District Council or the Parish Council of the terms of this Licence which is not remedied within a reasonable period
- 7.2 automatically on 7 August 2109 without any party being required to give notice to another

8. **Notices**

- 8.1 Any demand or notice required to be given or made or served on any party to this Licence shall be duly and validly made given or served if sent by prepaid registered or recorded delivery mail and addressed to the relevant address given at the start of the Licence
- 8.2 Any demand or notice shall be conclusively treated as having been made given or sent if by mail on the second working day after the day of posting

9. **Insurance**

At all times during the Term the District Council shall maintain third party liability insurance to support the indemnity in clause 6 to a minimum value of Five Million Pounds (£5,000,000) for each and every claim (or such higher sum as the Commissioners shall from time to time reasonably require) with an insurance office of repute and on demand to produce to the Commissioners whenever requested a copy of the insurance policy together with evidence of payment of the latest premium and should the District Council fail to arrange or maintain such insurance the Commissioners shall be at liberty to do so in the District Council's stead in which event the costs incurred in doing so shall be due and payable on demand as a debt by the District Council to the Commissioners

10. **Lift and Shift**

- 10.1 If the Commissioners shall wish to develop the Commissioners' land or carry out on the Commissioners' land any works with which the Infrastructure may interfere (as to which the decision of the Surveyor shall be conclusive) then the District Council and the Parish Council shall be obliged on notice given to the District Council and the Parish Council by the Commissioners as soon as reasonably practicable at the Commissioners' cost to alter the route or location of the Infrastructure (or the relevant part thereof as specified in the Commissioners' notice) by removing and repositioning the Infrastructure (or relevant part thereof) in such position in the Commissioners' land and at such depth as the Commissioners shall reasonably stipulate all such works

to be carried out in accordance with the District Council and the Parish Council's covenants and obligations hereunder and the parties shall enter into such deeds or otherwise do or join in any thing as the Commissioners reasonably requires in order to record the new route or location of the Infrastructure

- 10.2 Any dispute arising between the parties under this clause shall be determined by a single arbitrator to be appointed (in the absence of agreement) on the application of either party by the President of the Royal Institution of Chartered Surveyors and the provisions of the Arbitration Act 1996 or any statutory modification or re-enactment thereof shall apply

11. Charities Act 1993

The Property (to the extent that it is owned by the Commissioners) is held by or in trust for the Commissioners which were an exempt charity at the date that the Commissioners proposed to grant this Licence over the Property

SCHEDULE ONE

The Scheme

The Fiskerton Flood Mitigation Scheme – The Scheme

The Scheme comprises certain works more particularly described in the Second Schedule to this Licence, which are designed to intercept overland flow of surface water.

The Scheme includes: new ditches on land in the Commissioners' ownership running along field boundaries to the north of Fiskerton village and to the east and west of the village hall Ferry Road Fiskerton; an attenuation area on land in the Commissioners' ownership immediately to the north of the said village hall; new piped connections on land in the

Commissioners' ownership to the northwest of the attenuation area and to the north of Corn Close Fiskerton; a new piped connection through land in the ownership of the Parish Council and in the grounds of the said village hall through to the outlet located on land in the ownership of the County Council comprising the footpath access to Fiskerton C E Primary School Ferry Road Fiskerton ("the School"); the outlet to the manhole at the rear of 5 Corn Close Fiskerton and redirection of surface water to storage for slow release back into existing culverts, all delineated for information on the plan at Appendix A to this Schedule.

Once construction of the Scheme has been completed in accordance with the terms of this Licence (including but not limited to payment of the Sum by the District Council and certification of the Works by the IDB), future inspection and maintenance of the Scheme shall be the responsibility of the Parish Council, with the exception of the eastern most part of the ditches identified as 'none scheme' in Schedule 2 to this Licence and Appendix A to this Schedule.

A two metre wide field margin shall be left between the wooded field boundary and the attenuation area as marked on the plan at Appendix A to this Schedule for the purpose of facilitating a possible diversion of Public Footpath No 115. This footpath currently passes through the field to the north of the aforementioned village hall and the District Council shall ensure that the footpath is not obstructed at any time.

A post and rail fence shall be erected along the field margin from the village hall boundary for the length of and next to the attenuation area embankment. This fencing shall be maintained as part of the Scheme.

The location of the various elements that comprise the Scheme are together with a key marked (for information only) on the plan at Appendix A to this Schedule.

The extent of the land to which access is required and upon which the Works will be undertaken, including the area needed for soil stripping and redistribution, is outlined in red on the plan at Appendix B to this Schedule.

The Scheme does not include the two existing culverts (marked by green broken lines on the plan at Appendix A to this Schedule) into which water from the Scheme will drain, or the new land drainage ditch that is to be created and will extend from a point two metres east of the public footpath at the field boundary with Corn Close to its outlet at the eastern extremity of that field (marked in light blue and labelled 'none scheme' on the plan at Appendix A to this Schedule).

SCHEDULE TWO

The Works

The Fiskerton Flood Mitigation Scheme – Schedule of Works

Implementation

The Works shall comprise all those works necessary to give effect to the Scheme, as agreed between the District Council and The Witham Third District Internal Drainage Board, J1 the Point, Weaver Road, Lincoln, LN6 3QN

A 1:100 year + 30% climate change protection standard shall be implemented by the District Council, which shall relieve foul and highway drainage systems of surface water infiltration.

Any piped connections to be made at the School must be carried out by 1 September 2010. The District Council shall vacate the County Council's land by 1 September 2010.

Any earthworks must be carried out after the harvest of the Tenant's current crop and before the next crop is sown. The harvest will complete between 7 August and 13 August 2010. The Works must be complete and the Commissioners' agricultural land (currently occupied by the Tenant) vacated by 1 October 2010.

The Works must be executed in full compliance with the following drawings, attached at Appendix B to this Schedule:

- Proposed Flood Mitigation Works 60159423-001-C4

- Standard Details 60159423-002-C2

EXCEPT THAT where it becomes apparent during the course of the Works that the drawings are inadequate to secure effective drainage for any reason (as to which the opinion of the IDB Engineer shall be final) the Works shall be amended, and in particular open ditches shall be dug to a deeper level than shown on the detailed drawing where any land drainage systems have a deeper outlet to the ditches than the level of the ditches shown on the drawing, subject to the District Council (i) securing approval in writing from the IDB's Engineer and (ii) securing any necessary amended planning permission and (iii) undertaking any statutory consultation. Where for any reason (including but not limited to time constraints) the District Council is not able to secure amended planning permission for any changes to the Works undertaken under this exception the District Council shall be responsible for undertaking such alternative works as may be approved by the local planning authority

New ditches shall only be constructed on land owned by the Commissioners and these shall be dug approximately 0.5m away from the boundary with neighbouring agricultural land, and shall be no greater than 3 metres in width, except for that section of the ditch measuring approximately 20 metres in length and marked on the plan at Appendix A hereto.

Access

The District Council shall use its best endeavours to minimise intrusion into Fiskerton village. With the exception of the connections through the village hall grounds and into the School, access to the Property shall be exercised only from the neighbouring airfield (by arrangement) and upon the routes marked in green on the plan at Appendix A to this Schedule (or such other route as the Surveyor shall determine).

The District Council shall at all times use its best endeavours to avoid causing damage to any property including land, crops and metalled surfaces (the term 'metalled surfaces' to include, inter alia, the concrete apron to the airfield). The District Council shall take particular care to avoid causing damage whilst using tracked vehicles.

Public Rights of Way

The District Council shall not interfere with or obstruct in any way any of the public rights of way that cross the Property. The District Council shall plan and implement the Works so as to ensure that the rights of way remain open and useable at all times.

Notwithstanding the requirement not to interfere with or obstruct any of the public rights of way across the Property, it is agreed that the District Council may (at its discretion) seek an order from the appropriate authority to divert Public Footpath No. 115 along the western side of the field north of the village hall, and the western side of the attenuation area. Any diversion in accordance with such permission shall not be considered an interference with or obstruction of Public Footpath No. 115.

Safety

For the duration of the Works, and from completion of the Works until adoption of the Scheme by the Parish Council, the District Council shall be responsible for the safety of any person or persons who may enter the Property and who may suffer any injury or loss as a consequence of the Works or the District Council's presence on the land.

There is an overhead power supply, shown for information purposes on design drawing 60159423-001-C4 at Appendix B to this Schedule. Prior to undertaking any of the Works in the vicinity of the overhead power supply, the District Council shall consult all owners thereof and all relevant statutory undertakers, and shall ensure that all necessary approvals, consents, authorities and permissions are in place.

The District Council shall close off play areas, on land adjoining the village hall, where (acting reasonably) it considers that closure is appropriate in order to protect the health and safety of the users of such play areas.

The District Council shall, prior to the commencement of the Works, submit methods statement(s) and risk assessments to the parties to this Agreement. The parties to this

Agreement may comment upon, and approve or reject such method statements and risk assessments.

The District Council shall install post and rail fencing to the west of the attenuation area, along the entire length of the balancing pond, and shall ensure a minimum of 1.6 metres clearance from the boundary in order to allow for any future diversion of Public Footpath No. 115.

The District Council shall be responsible for compliance with the Construction (Design and Management) Regulations 2007.

Land Drainage

The District Council shall use its best endeavours to avoid any interference with, or disruption to existing land drainage in the fields marked LD on the plan attached at Appendix A to this Schedule. Where interference with such land drainage is unavoidable due to the execution of earthworks, any damage must be made good by the District Council (including, inter alia, reinstatement of ends and connections) as soon as is practically possible. The District Council shall ensure that it does not cause any damage whatsoever to the diversion pipe labelled LD1 on the plan attached at Appendix A to this Schedule.

Soil stripping and redistribution

The District Council shall ensure that all of the earthworks, within the area bounded in brown on the plan attached at Appendix A to this Schedule, shall be executed in strict accordance with the detailed designs for soil stripping, temporary storage and redistribution, set out in design drawings 60159423-001-C4 and 60159423-002-C2 at Appendix B to this Schedule.

The District Council shall remove all surplus soil and other material resulting from the earthworks from the Commissioners', County Council's and Parish Council's land and shall ensure that such soil and other material is properly and lawfully disposed of. The District Council shall redistribute all surplus soil and other material where such surplus soil and other

material arises from earthworks on the Commissioners' agricultural land, currently occupied by the Tenant.

Where the Works are executed on the Commissioners' agricultural land, currently occupied by the Tenant, the District Council shall strip the top soil and set the same aside for even redistribution. Where any sub soil is to be removed, it shall be relocated across the site evenly to a maximum depth of 150mm, prior to redistribution of the top soil evenly across the site. The District Council shall complete the Works and vacate the Property by 1 October 2010.

Should the requirement that ditches and storage areas have a 0.5 metre clearance from boundaries result in conflict with any directions or guidance from statutory undertakers, or any directions or guidance from the owners of the overhead power cables, in either case on the grounds of safety, then the requirements of the said statutory undertakers or owners shall prevail.

The District Council shall ensure that the east and west banks of the attenuation areas will be of a 1:3 batter whilst the base will be graded to 1:8, in accordance with the design drawings at Appendix B to this Schedule, to permit continued use of the land.

Connections & culverts

The District Council shall give a minimum of seven days' notice to the Environment Agency, in writing, of its intention to install each of the piped sections of the Works. The District Council shall install such piped sections in accordance with any applicable consents given by the Environment Agency.

Scheme Area

The extent of the area of the Works in relation to the Scheme shall include, inter alia, land that is needed for soil stripping, temporary storage and redistribution, outlined in brown in the plan at Appendix A to this Schedule.

Non Scheme area

The Works will include construction of a new drainage ditch extending from a point east of the public footpath at the field boundary with Corn Close to its outlet at the eastern extremity of that field and an appropriate connection (as shown on the plan at Appendix A to Schedule 1 of this Agreement). This does not form part of the Scheme to be adopted by the Parish Council, but is part of the Works.

Certification

The Parish Council shall not be required to accept any liability for inspection and maintenance of any part of the Scheme until such time as the District Council has obtained written certification from the IDB that the Works have been completed to the IDB's satisfaction.

Defects Liability

The District Council hereby guarantees the Works for the period from the date of completion of the Works to the date 18 Months thereafter against faulty materials or workmanship. If the Commissioners or the Parish Council shall within such guarantee period or within 25 Working Days thereafter give notice in writing to the District Council of any defect in the Works, or any part thereof, as may have arisen during such guarantee period under proper and normal use, the District Council shall (without prejudice to any other rights and remedies which the Commissioners or the Parish Council may have) promptly remedy such defects (whether by repair or replacement as the body giving notice shall elect) free of charge.

SIGNED for and on behalf of the
CHURCH COMMISSIONERS
FOR ENGLAND

) *Ashraf Sanders*
)

SIGNED by PHILIP MARTIN GOOD

) *P.M. Good*
)

SIGNED for and on behalf of FISKERTON
PARISH COUNCIL

) *M. J. Swinson*
)

SIGNED for and on behalf of
LINCOLNSHIRE COUNTY COUNCIL

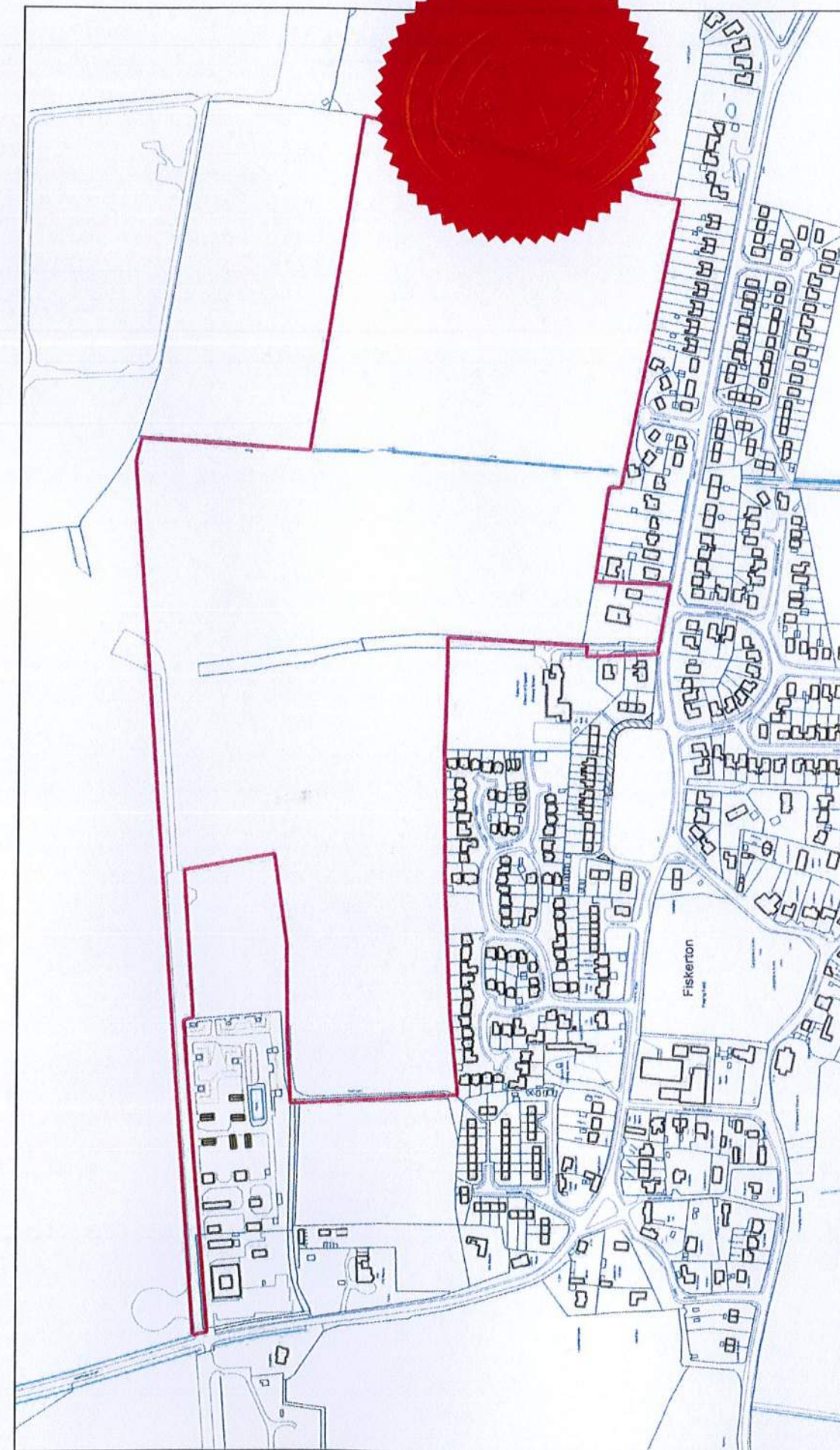
) *Ruth Brown*
)

SIGNED for and on behalf of
WEST LINDSEY DISTRICT COUNCIL

) *Stedals*
)

Property

1:3500



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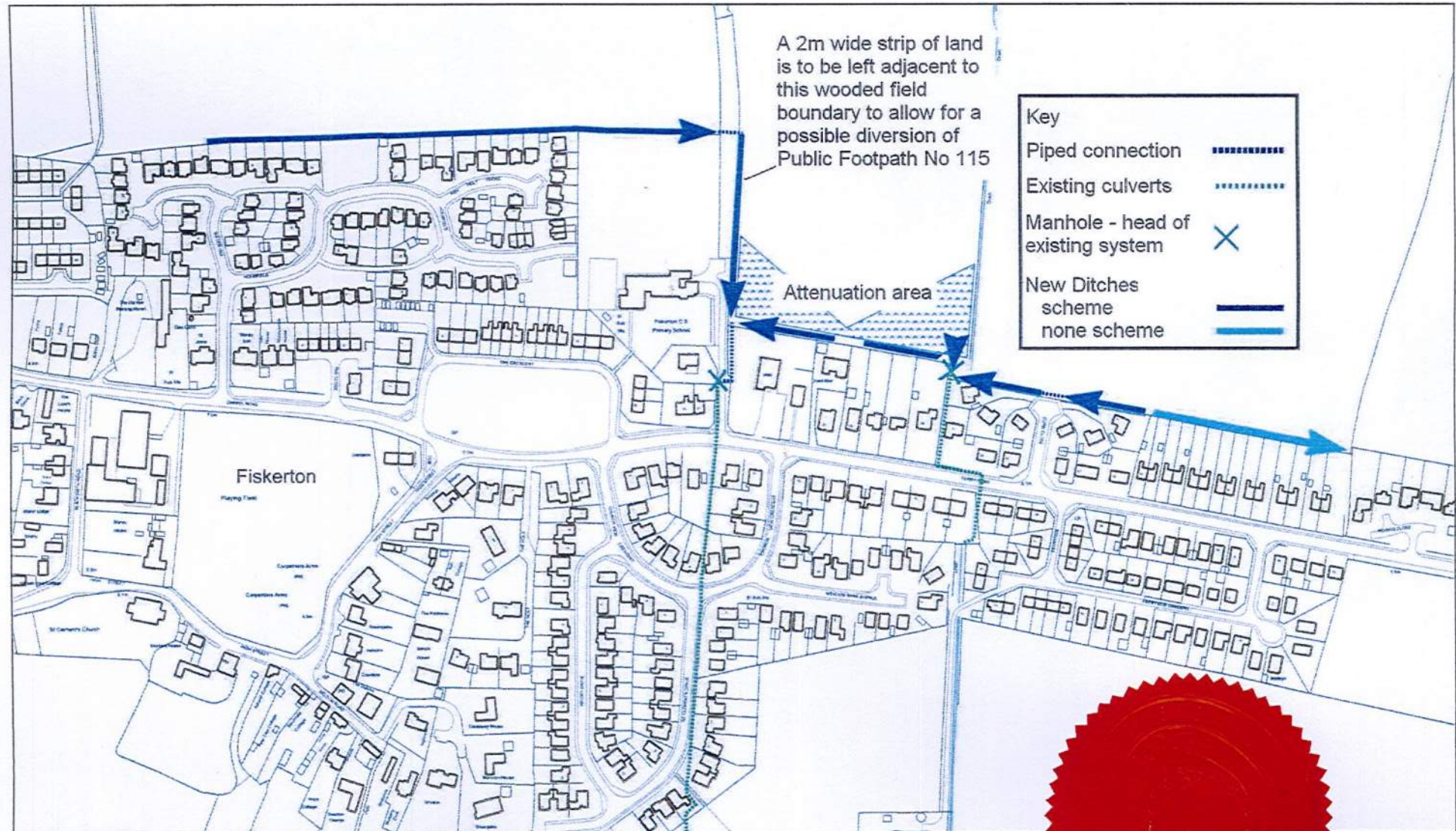
AUTHENTICATING OFFICER

Ashraf Sanders

Fiskerton Flood Mitigation Scheme Schedule 1 - Appendix A



1:2500



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AUTHENTICATING OFFICER

Richard Saunders.

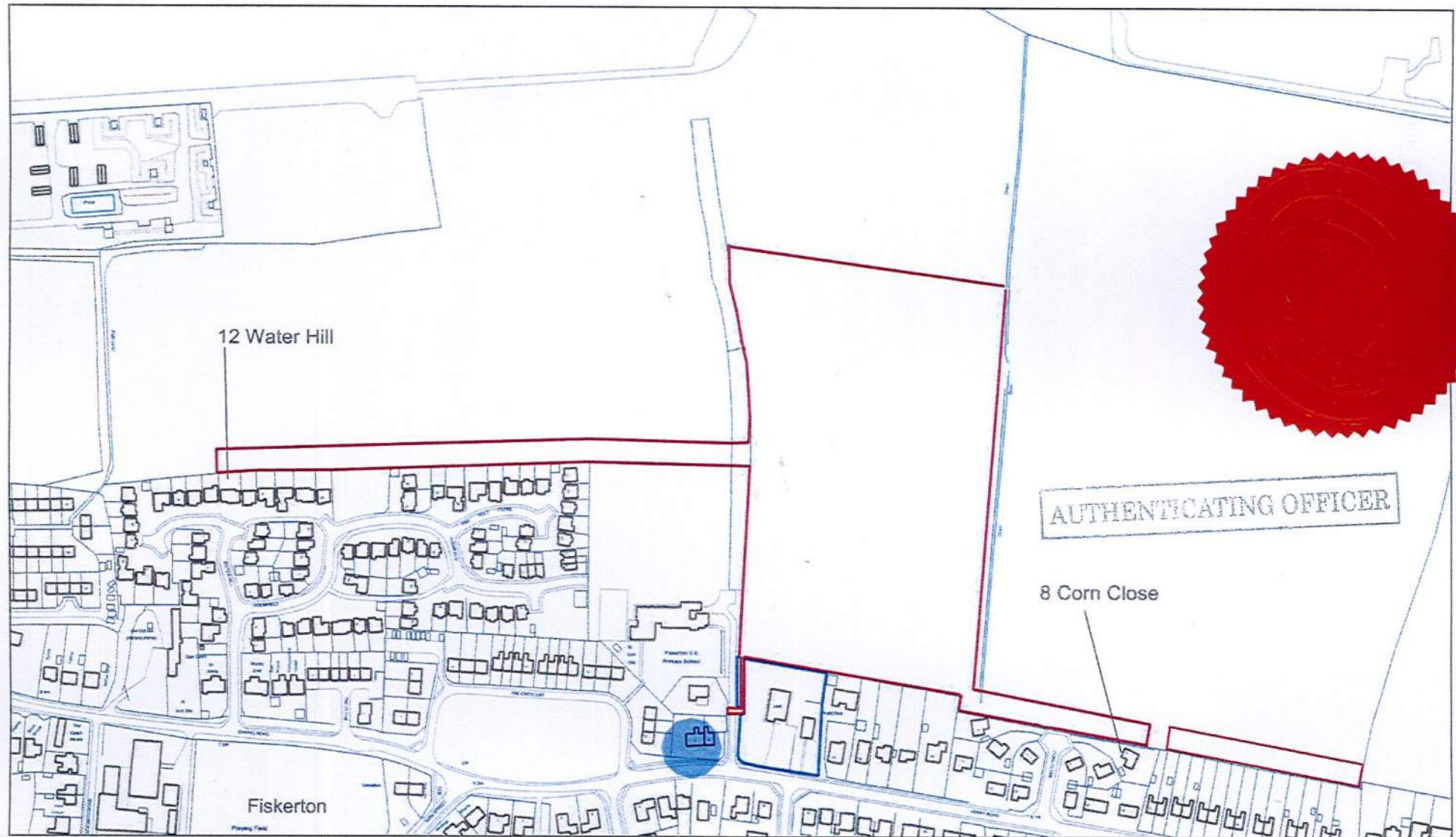


Fiskerton Flood Mitigation Scheme

Schedule 1 - Appendix B



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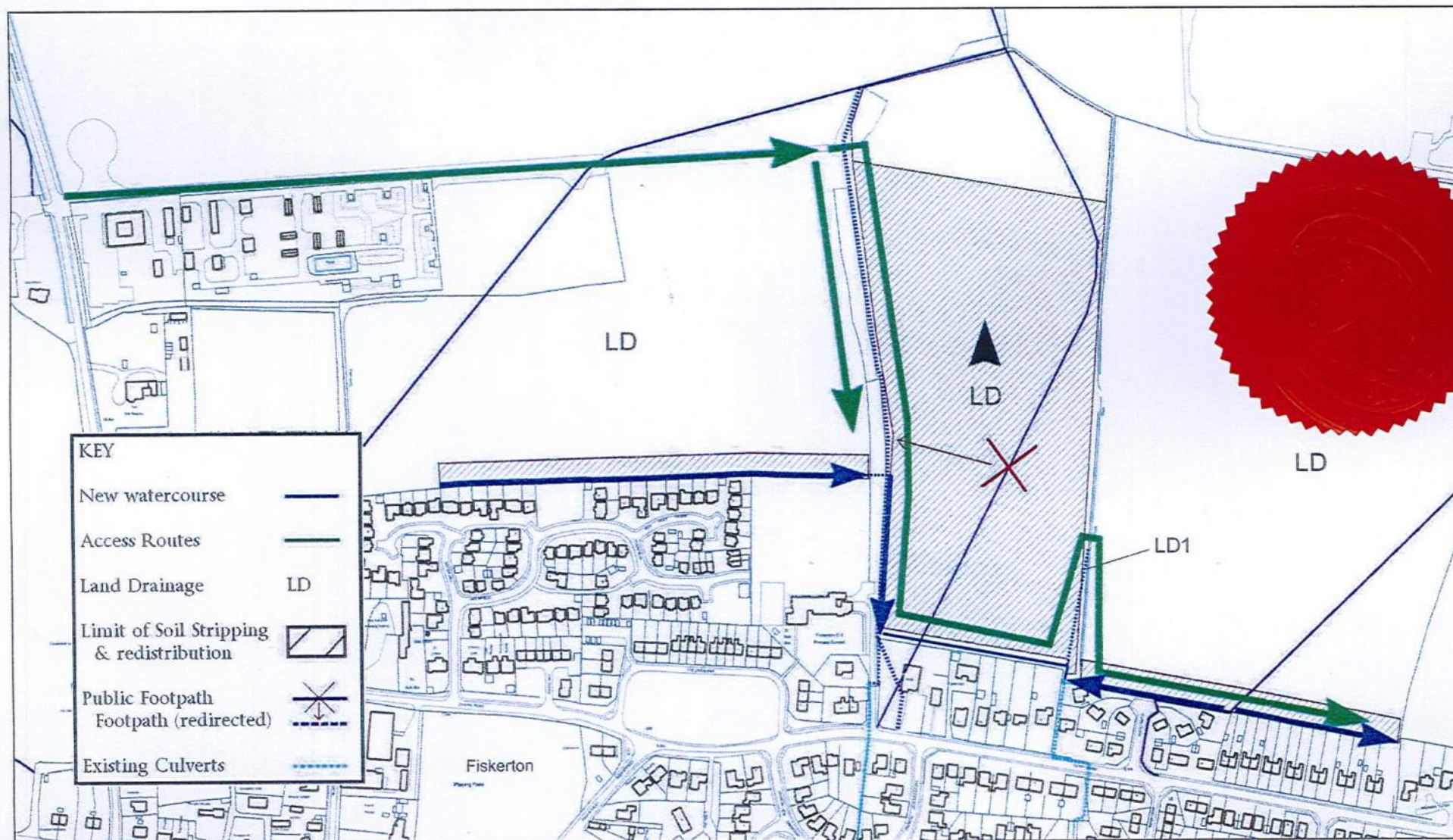


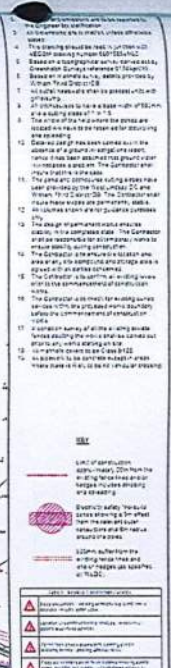
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West Lindsey District Council Licence No. LA 100018701 2010

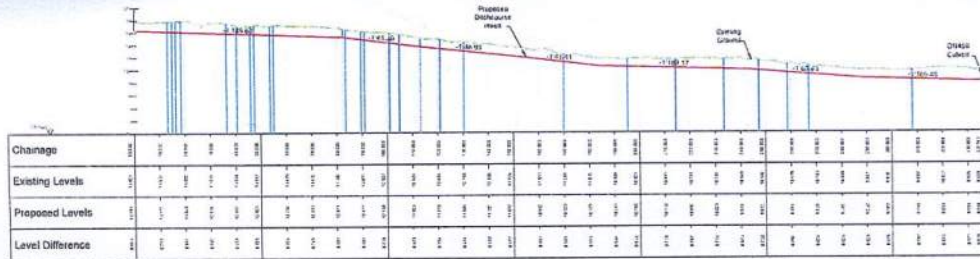
Fiskerton Flood Mitigation Scheme

Schedule 2 - Appendix A

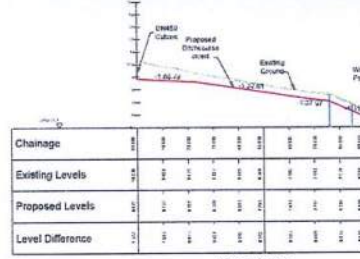
Extent of Works - including temporary storage



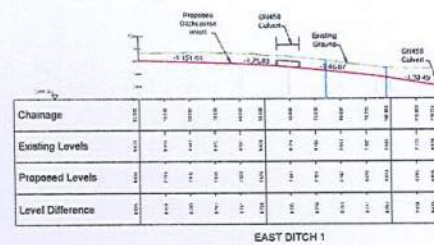
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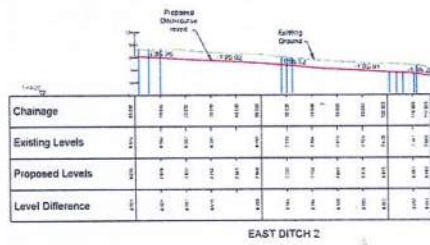
WEST DITCH 1



WEST DITCH 2

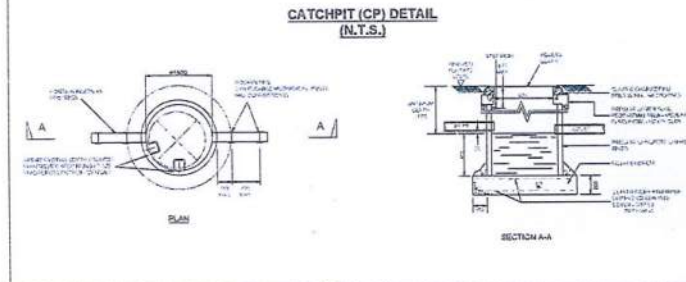


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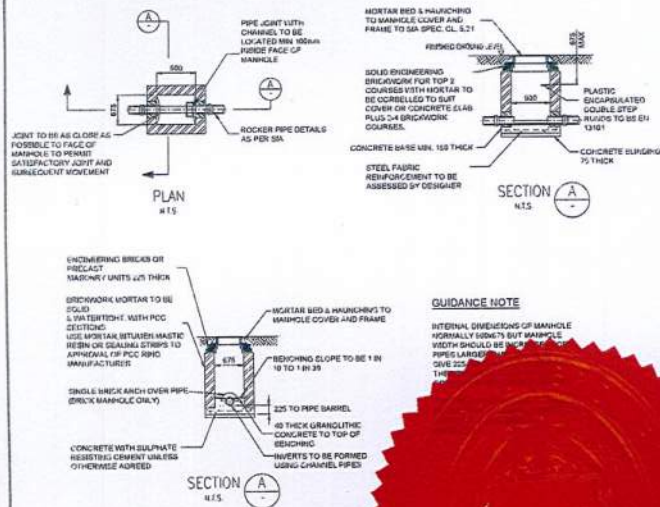


EAST DITCH 2

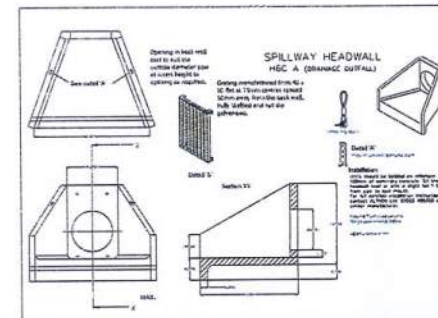
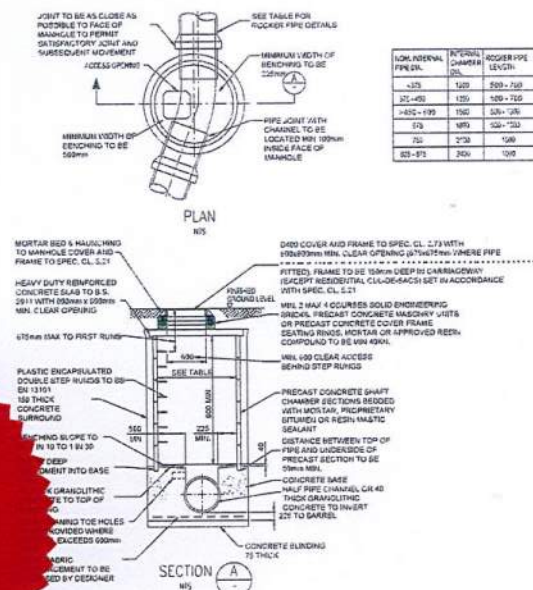
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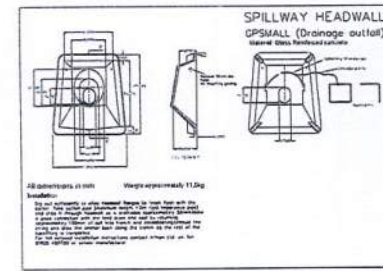
S/A MANHOLE TYPE 'D' DEPTH TO SOFFIT LESS THAN 1.0 METRE (N.T.S.)



S/A MANHOLE TYPE 'B' DEPTH FROM GROUND LEVEL TO SOFFIT LESS THAN 3 METRES (N.T.S.)



WEST POND TYPICAL OUTFALL HEADWALL DETAILS (N.T.S.)



EAST POND TYPICAL OUTFALL HEADWALL DETAILS (N.T.S.)

1. Do not scale from this drawing.
2. All errors and omissions are to be reported to the Engineer for clarification.
3. All dimensions are in metres unless otherwise stated.
4. S/A is Sewers for Adoption 6th Edition.
5. This drawing should be read in conjunction with AECOM drawing number 60015534/01.
6. Building to proposed culverts to be in compliance with Building Regulations Part H or as approved by the local authority and/or the ICB.
7. All manhole covers to be Class B125.
8. All manholes to have screens.


Client	West Lindsey District Council
Project	FISKERTON
Title	THE FISKERTON FLOOD MITIGATION SCHEME
Design	SA
Drawn	SA
Checked	SA
Approved	SA
Date	07/07/19
Scale	AS SHOWN
AECOM	
14 Queen Victoria Road Causton CV1 3PZ	Tel: +44 (0) 24 7625 1000 Fax: +44 (0) 24 7625 1001 www.aecom.co.uk
No. 60159423/002	Rev. C1

Richard Sanders.



Appendix C – MicroDrainage Calculations

QBar – Greenfield Run-off Rate

WYG Group Limited		Page 1
.	Fiskerton	
.	Greenfield runoff rates	
.		
Date 16.11.16	Designed by Tom Spawton	
File ATTENUATION.SRCX	Checked by Peter Sparham	
XP Solutions	Source Control 2014.1	

ICP SUDS Mean Annual Flood

Input

Return Period (years) 100 SAAR (mm) 600 Urban 0.000
Area (ha) 8.920 Soil 0.450 Region Number Region 5

Results 1/s

QBAR Rural 32.7
QBAR Urban 32.7

Q100 years 116.5

Q1 year 28.5
Q30 years 78.6
Q100 years 116.5



Appendix D – LLFA Data

LLFA Flooding Incidents

Duty to Investigate
On-going section 19 Investigations

Lincolnshire County Council Section 19 Investigations									Identified Action/Works			
Date of Incident	Location	Town	Division	Contact Officer	Description of Flooding	No of Properties internally Flooded	Risk Management Authorities with Responsibilities and whether they are exercising functions	Actions and Recommendations	Proposed Action/Works	Promoter	Status	Estimated Timescales
28-Jun-12	East Street and Stanhope Road Area	Horncastle	East	Dean Myhill Area Highways Manager East Division Northern Area	Extreme rainfall (estimated to be a 1 in 50 year event) caused overland and highway surface water flows to collect at the low area of East Street and Stanhope Road. The extreme rainfall overwhelmed the highway drainage system which was also suffering from surcharged outfalls due to high river levels.	2	LCC - Yes	LCC have undertaken a CCTV survey of the highway drainage system in the area which has identified some minor defects and obstructions which will be addressed. LCC have also undertaken initial modelling work to help understand and assess the surface water flood risk in Horncastle. A further meeting with Anglian Water is to be arranged, and a bid for an overall surface water study for Horncastle is being submitted by LCC.	Further consideration as part of the overall Horncastle scheme, Feasibility and Design 2014/15 Works 2015/16/17	LCC / AW	On-going	2014 - 2017
28-Jun-12	West Street	Horncastle	East	Dean Myhill Area Highways Manager East Division Northern Area	Extreme rainfall (estimated to be a 1 in 50 year event) caused significant overland flows from adjacent school field, hillside and Lincoln Road. The surface water collected at the bottom of the hill causing flooding to the Grammar School and adjacent properties in West Street.	3	LCC - Yes Anglian Water - Yes	LCC have undertaken a check of the highway drainage system in West Street and have cleaned out a number of gullies and removed the blockages. LCC have also undertaken initial modelling work to help understand and assess surface water flood risk in Horncastle. A bid for an overall surface water study for Horncastle is being submitted by LCC.	Blockages removed and gas main relocated Further consideration as part of the overall Horncastle scheme, Feasibility and Design 2014/15 Works 2015/16/17	LCC	On-going	2014 - 2017
28-Jun-12	South Street and Bull Ring	Horncastle	East	Dean Myhill Area Highways Manager East Division Northern Area	Extreme rainfall (estimated to be a 1 in 50 year event) caused overland and highway surface water flows to collect at the low area of the Bull Ring and South Street overwhelming the Anglian Water sewer systems, which were also suffering from surcharged outfalls due to high river levels.	3	Anglian Water - Yes LCC - Yes	Whilst the flooding was caused by extreme rainfall and overland flows, LCC have undertaken a CCTV survey of the underground surface water systems. This has revealed a number of condition concerns in relation to a brick culvert system owned by Anglian Water. The report has been passed to Anglian Water in order that they consider future action and repairs. LCC have in addition carried out repairs to gullies and connections in South Street. LCC have also undertaken initial modelling work to help understand and assess surface water flood risk in Horncastle. A bid for an overall surface water study for Horncastle is being submitted by LCC. Anglian Water works to clear blockages have been completed. Planned Environment Agency works regarding outfall issues and river levels may reduce issues.	LCC Gullies and system checked and repaired. Anglian Water checking Surface Water systems Further consideration as part of the overall Horncastle scheme, Feasibility and Design 2014/15 Works 2015/16/17	LCC	On-going	2014 - 2017
28-Jun-12	Langton Hill	Horncastle	East	Dean Myhill Area Highways Manager East Division Northern Area	Extreme rainfall (estimated to be a 1 in 50 year event) caused significant overland flows from the adjacent hillside and agricultural land, which was not contained by the interceptor ditch. Combined overland and highway surface water overwhelmed both the highway and surface water sewer drainage systems on Langton Hill and West Street, and caused flooding at the bottom of the hill.	3	LCC - Yes Anglian Water - Yes Witham 3rd IDB - Yes	A full drainage survey has been carried out and significant blockages have been removed from both the highway drains and Anglian Water's surface water sewers. The survey has identified a number of areas of damage to both systems. LCC has repaired the highway drainage system, and the survey has been forwarded to Anglian Water for assessment of their surface water sewers. The Witham 3rd Internal Drainage Board is ensuring that ditches are cleared by respective riparian land owners.	Highway drainage system repaired and functioning. Anglian Water checking the Surface water system	LCC	Complete	Completed
28-Jun-12	Mark Avenue, Accommodation Road and Prospect Street	Horncastle	East	Dean Myhill Area Highways Manager East Division Northern Area	Extreme rainfall (estimated to be a 1 in 50 year event) caused significant overland flows from the adjacent hillside and agricultural land. This was exacerbated by the interceptor ditch being restricted at its entrance to the culvert system, which caused flooding to properties in Mark Avenue, Accommodation Road and Prospect Street.	14	Anglian Water - Yes Witham 3rd IDB - Yes East Lindsey District Council - Yes	Whilst the flooding was caused by extreme rainfall and flows from adjacent land, investigations revealed an intercepting ditch which flows into a culverted watercourse which is shown on Anglian Waters records. East Lindsey District Council have cleared the culvert and trash screen. LCC have also undertaken initial modelling work to help understand and assess surface water flood risk in Horncastle. Ditches cleaned out and discussions are ongoing between Anglian Water and Witham 3rd Internal Drainage Board regarding ownership. (A bid for an overall surface water study for Horncastle is being submitted by LCC.	Ditches cleaned out. Discussions ongoing between Anglian Water and Witham 3rd IDB regarding ownership Further consideration as part of the overall Horncastle scheme, Feasibility and Design 2014/15 Works 2015/16/17	LCC / AW / Witham 3rd IDB	On-going	2014 - 2017
28-Jun-12	Bowl Alley Lane	Horncastle	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Extreme rainfall (estimated to be a 1 in 50 year event) caused significant overland flows from the adjacent school field and Bowl Alley Lane. The surface water collected at the lowest point causing flooding to the adjacent properties in Bowl Alley Lane.	3	Anglian Water - Yes LCC - Yes	Whilst the flooding was caused by extreme rainfall and overland flows, LCC have undertaken a CCTV survey of the underground surface water systems in the area. This has revealed a number of condition concerns in relation to the system owned by Anglian Water. The report has been passed to Anglian Water and future discussions will be undertaken with them in order that they consider future action and repairs. In addition, LCC is planning to install additional drainage protection features in front of the affected properties, and is in discussion with the school with respect to intercepting flows from the school car park. A bid for an overall surface water study for Horncastle is being submitted by LCC.	Partnership scheme being developed between LCC Highways, Education, AWA Intended delivery 2014 - 2015	LCC / AW	On-going	2014 - 2015
28-Jun-12	Main Road/Station Row	New Bollingbrooke	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Extreme rainfall (estimated to be a 1 in 40 year event) caused highway surface water flows to collect in the low area of Main Road/Station Row overwhelming the highway drainage system in the footway.	7	LCC - Yes	LCC has investigated the drainage and found blockages/damage due to buildings and tree roots. A solution to rectify the damage is being designed and costed.	Dropped kerbs outside post office replaced with full height kerbs. System found to be damaged by buildings/trees and a new outfall is required. Solution being designed and costed.	LCC	Design / Feasibility	2014 - 2016
28-Jun-12	Horncastle Road adjacent old railway line	Roughton Moor	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Metalling works to the Spa Trail has affected the natural overland flow routes. This has caused surface water to be trapped on the south side of the trail, which has caused flooding to one property.	1	LCC - Yes	Temporary relief trench has been cut and boarded. TSP designing a solution as Spa Trail upgrade has affected the natural overland flow path.	Division have carried out remedial works to reduce flood risk to properties by the installation of a cross drain.	LCC	Completed	Complete

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28-Jun-12	Sunningdale Close	Skegness	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Extreme rainfall caused highway surface water flows to bypass kerb gullies and collect in the low area of Sunningdale Close. Overland flows from the rear of the houses also contributed to the flooding.	4	LCC - Yes Anglian Water - Yes East Lindsey District Council - Yes	East Lindsey District Council have installed new gullies and connections which discharge into the Anglian Water surface water system (the capacity of which has been checked and found to be acceptable).	Capacity issues checked and found to be acceptable ELDC installed new gullies	LCC	Completed	Complete
28-Jun-12	Ings Lane	Toynnton St Peter	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Extreme rainfall caused overland flows to surcharge a number of watercourses in the area resulting in flooding to a low lying property in Ings Lane.	1	Witham 4th IDB - Yes LCC - Yes	It is recommended that a new watercourse be cut to the south to divert flows from Toynnton St Peter away from the flooded property. Witham 4th Internal Drainage Board is considering a scheme. However, this is likely to be a low priority due to; the cost, legal issues and minimal benefits.	With Witham 4th IDB. Considering Capital Scheme Submission - Investigation works programmed for 2016/17/18. Possible works 2018/20	Witham 4th IDB	On-going	Investigation 2016/17 Possible works 2018/19
28-Jun-12	Albany Road	Woodhall Spa	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Heavy rainfall caused surcharging of the highway drainage system (which flows into Tattershall Road) causing backflow into Albany Road. This together with the flows collected from Albany Road were unable to enter the watercourse crossing Albany Road and the watercourse to the rear of Witham Road (due to a combination of blocked watercourses and partially blocked culvert crossing Albany Road).	5	Witham 3rd IDB - Yes LCC - Yes	Witham 3rd Internal Drainage Board has instructed a developer to clear the ditches; to the rear of Witham Road, and leading to the culvert crossing Albany Road. LCC has cleared the culvert from its outfall to Albany Road and are investigating the short section of culvert under Albany Road with a view to upsizing (feasibility and design in progress). In addition, LCC plan to install a new section of pipe work and gullies outside the affected properties to drain to the culvert. Residents have also cleared the ditch to the south of Albany Road.	Culvert designed by TSP. Works due to start on site 23rd June 2014 to install a new culvert	LCC	Works planned 2014/15	Completion 2014/15
29-Jun-12	The Esplanade	Chapel St Leonards	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Surcharging from the highway drainage system due to blockages within the system, root ingress and possible concerns over the number of gullies.	2	LCC - Yes	LCC has investigated the highway drainage system and undertaken a CCTV survey which indicates blockages and root infestation. Gullies and connections have been jetted. Further work is planned to clear roots and blockages within the system, and install additional gullies. The improvement scheme is currently being designed and costed.	Scheme being designed and costed	LCC	On-going	Design 2014/15
28-Jun-12	Fairfield Avenue	Chapel St Leonards	East	Dean Myhill Area Highways Manager East Division Northern Area	Surcharging of Anglian Water surface water system due to displaced pipe work, and possible concerns over capacity.	1	Anglian Water - Yes	Surcharging of Anglian Water surface water system due to displaced pipe work and possible concerns over capacity.	All works completed Nov 2013	LCC	Complete	Completed
28-Jun-12	Main Road	Saltfleet	East	Dean Myhill Area Highways Manager East Division Northern Area	Soil and vegetable matter washing into the channel in front of the property causing blockage to the adjacent gully.	1	LCC - Yes	LCC have issued a works order to trim and harden the verge to prevent future siltation and blockages of the channel and gully	Works order raised and all works completed Nov 2013	LCC	Complete	Completed
29-Jun-12	Pump Lane	Saltfleet	East	Dean Myhill Area Highways Manager East Division Northern Area	Overland and highway surface water flows entering low lying property due to collapsed and silted surface water drainage system.	1	East Lindsey District Council - Yes	ELDC have investigated surface water system and will install a new manhole enabling access and will cleanse and repair current system this will include installing new gullies.	All work completed Nov 2013	ELDC	Complete	Completed
28 Jun 12 6 Jul 12	Riverhead Terrace, Louth	Louth	East	Andrew Ratcliffe Area Highways Manager East Division Northern Area	During heavy rainfall (estimated to be a 1 in 60 year event) flooding took place in Riverhead Terrace due to overland flows from adjacent Riverhead development, and flows from the Terrace area being unable to escape.	9	East Lindsey District Council - Yes Anglian Water - Yes	Development has taken place to the east and north of Riverhead Terrace, which is partially complete. The new development is significantly higher than the Terrace, and has severed the natural drainage and flow routes from Riverhead Terrace, such that surface water from the Terrace and land to the north is trapped against the new development. The only means of surface water disposal from Riverhead Terrace is now via a combined gravity system with an assisted foul pumping station. The pumping station was installed, subsequent to development, at the east of Riverhead Terrace. It is unlikely that this foul pumping station will have the capacity to deal with surface water flows from Riverhead Terrace and its catchment area. The new development is to be drained by Anglian Water foul and surface water sewer systems and also involves the culverting of a watercourse which previously drained the land to the north and east of the Terrace. Due to the elevation of the new development the plans included a retaining wall at its junction with Riverhead Terrace. However, this was not constructed at the time of the flooding. In addition a number of planned road gullies at the western end of the development were not installed and others were blocked. This added to the problems in the Terrace by allowing flows from the higher development to cascade down into Riverhead Terrace. Since the summer ELDC have required the developer to complete the retaining wall, install the missing gullies, and clean out the surface water sewer system, which should mitigate the overland flows from the development. However, there remains a significant issue in that the development has severed the natural drainage and flow routes from Riverhead Terrace, such that surface water from the Terrace and land to the north are trapped against the retaining wall and the raised development. East Lindsey District Council has commissioned a study which has commenced. Survey complete and Study undertaken to identify issues and solutions. Anglian Water has undertaken further investigation with potential for a grant aid bid.	ELDC commissioned a hydrological study in April 2013 which is now complete. Report makes a number of recommendations - the most significant being to install a much larger AW pumping station. AW to make scheme submission as part of their Price Review 14 process.	AW / ELDC	On-going	Ongoing
28-Jun-12	Station Road	Wainfleet	East	Andrew Ratcliffe Area Highways Manager East Division Southern Area	Internal flooding to four properties, during intense rainfall, due to inoperative highway drainage system. This was caused by damage from utility companies and the outfall/ditch not being maintained.	4	LCC - Yes	LCC should clean all gullies and restore the highway drainage system and ensure these are running efficiently to the River Steeping. Further monitoring should be carried out.	LCC have cleaned all gullies, restored the highway drainage system and ensured they are running efficiently to the river steeping - monitoring required	LCC	Completed	Complete

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28-Jun-12	Sunningdale Drive	Skegness	East	Andrew Ratcliffe Area Highways Manager East Division Southern Area	Intense rainfall overwhelmed AWA surface water sewer system causing internal flooding to one property.	1	AWA - Yes	Investigations by AWA discovered three blockages/damage to the main surface water sewer on Sunningdale Drive, due to incursions from other utility companies.	Blockage/damages have now been repaired by AWA and private drainage system cleared. AW have applied for funding to CCTV survey the remainder of the system	AWA	Completed	Complete
28-Jun-12	Station Road	Firsby	East	Andrew Ratcliffe Area Highways Manager East Division Southern Area	Following intense rainfall water from the B1195 Station Road passed over a covered Highway gully down the drive of and flooded a residential property	1	LCC - Yes	LCC have uncovered gully, resident advised to consider providing drainage to the front of their property, to increase protection. LCC to consider raising kerbs.	Defective gully uncovered - and an Insurance claim was submitted for non removal of cover post surface dressing	LCC	Completed	Complete
28-Jun-12	Shop Lane	Goulceby	East	Dean Myhill Area Highways Manager East Division Northern Area	Overland flows from the adjacent hillside and agricultural land has been exacerbated by the overgrown/silted interceptor ditch, and the inlet to the culvert system being restricted by debris and silt. The combined flows caused flooding to a property opposite and lower than the restricted culvert/ditch system.	1	Lincolnshire County Council - Yes	During and following the incident the ditch underwent some clearance work by the resident of the flooded property. Witham 3rd IDB to ensure regular effective maintenance to the Riparian ditch to the North of Shop Lane under the extended enforcement powers.	All works completed Nov 2013	Witham 3rd IDB, LCC	Completed	Complete
28-Jun-12	Brick Yard Lane	Hundleby	East	Andrew Ratcliffe Area Highways Manager East Division Southern Area	Overland flows from agricultural Land surcharged culvert under Brick Yard Lane (reported 9th May 2013 by IDB) which is a private road	1	None	Its recommended that the 300mm dia culvert under Brickyard Lane be checked for condition and cleared by the private owner. Consideration may be given to installing a larger culvert - this would require consent from Witham 4 IDB. All unmaintained ditches should be cleared out.	Private ownership	Private	No Further Action	Complete
06-Jul-12	Croft Bank	Croft	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Overland and highway surface water flows entering property access due to low kerb threshold.	1	LCC - Yes	LCC to investigated and undertake reshaping works to divert flows away from the property access.	LCC have investigated and undertaken reshaping works to divert flows away from property access.	LCC	Complete	Completed
06-Jul-12	Mumby Road	Huttoft	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Overland and highway surface water flows entering low lying property due to suspected lack of capacity in the surrounding highway drainage system.	1	LCC - Yes	LCC have investigated the drainage system and placed an order to raise kerbs and install new gullies. LCC is awaiting funding availability prior to carrying out the works.	Order placed for new gullies and raised kerbs	LCC	In Progress	Sep-14
06-Jul-12	High Street	Burgh Le Marsh	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Overland and highway surface water flows entering low lying property due to suspected lack of capacity and defects in the surrounding highway drainage system, despite previous kerbing works aimed to mitigate problem.	1	LCC - Yes	LCC have investigated the surface water system and identified damage caused by utility activity. LCC will enforce repair once utility has been identified.	Works order issued to raise kerbs and regrade footway. New surface water sewer/drain in carriageway with outfall to Catchwater drain budget dependent, initial discussions with LMIDB have been undertaken to investigate routing and outfall locations.	LCC	Partially complete but further investigations required	2014/15
19-Jul-12	Lumley Avenue	Skegness	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Extreme rainfall caused both highway surface water and overland flows to funnel down the unadopted lane and collect in the low area behind the properties of Lumley Avenue.	2	LCC - Yes	LCC have installed two new gullies to cut off the discharge from the highway onto the private road. Owners of the private road will need to consider a drainage system within the unadopted lane.	New gullies installed.	LCC	Completed	Complete
03-Aug-12	Coots Lane	Mumby	East	Dean Myhill Area Highways Manager East Division Northern Area	Following intense rainfall water flowed down Coots Lane entering a property which is situated at the lowest point. A combination of water from carriageway and driveway was believed to be cause.	TBC	LCC - Yes LMIDB - Yes	Drainage survey to be undertaken with a view to upgrading the existing highway surface water drainage system. LMIDB to contact Riparian land owner of the dyke to request it to be cleaned/maintained on a regular basis.	LCC to undertake drainage survey. LMIDB to request cleansing/maintenance of dyke	LCC LMIDB	On-going	Investigation 2014/15
17-Mar-13	Main Street	Bucknall	East	Andy Ratcliffe Area Highways Manager East Division Southern Area	Following intense rainfall. Overland flows from adjacent fields flowed through the rear garden of and entered the property.	1	LCC - Yes LMIDB - Yes	Historic ditch to the rear of the property appears to have been filled/removed. This has now been reinstated to a good standard. LMIDB to check works	Witham 3rd IDB have checked the works have been carried out and it is maintained on a regular basis.	LCC LMIDB Witham 3rd IDB	Complete	Complete
30-Apr-12	St Catherines Grove	Lincoln	North	Jeanne Gibson Area Highways Manager North Division Lincoln City Area	Surface water backed up and surcharged into St Catherines grove due to flap valve sticking open.	2	Lincolnshire County Council - Yes Anglian Water - Yes Environment Agency - Yes	Anglian Water is to inspect the flap value at the outfall to the River Witham, and introduce a maintenance regime to ensure it closes when the river levels are high.	AW to Maintain flap valve Inspection regime to be discussed with AW & LCC Inspections being carried out on a monthly basis last inspection 19 April 2014	AW	Confirmation Complete	Completed
28-Jun-12	Castle Hill	Caistor	North	Steve Wiles Area Highways Manager North Division Northern Area	Due to heavy rainfall the Anglian Water foul sewer system became overwhelmed due to infiltration of surface water and backed up into a property in Castle Hill.	1	Anglian Water - Yes	There is a non-return valve fitted to the property lateral which was ineffective. Anglian Water have repaired it and are to implement an improved maintenance regime.	AW to maintain non-return valve.	AW	Complete	Complete

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28-Jun-12	Maple Avenue, Riby Road and Pelham Crescent	Keelby	North	Steve Wiles Area Highways Manager North Division Northern Area	Flooding was caused by surcharging surface water sewers combined with overland flows.	4	LCC - Yes Anglian Water - Yes	Further detailed study required to the ownership, condition and capacity of the surface water sewer system with a view to providing a new pipe system to intercept flows from the A18 Barton Street to reduce flows entering the village and to upgrade the pipe between Riby Road and Caddle Beck. Further LCC investigation and design required. Scheme bid due to be submitted for feasibility and works.	Surface water drainage scheme under consideration. Further LCC investigation and design required. Feasibility 2014/15/16 Work 2016/17/18	LCC	On-going	Investigation & Feasibility 2015/16 Possible works 2017-18
28-Jun-12	Eastfield Road	Keelby		Steve Wiles Area Highways Manager North Division North Area	Surface water sewer overwhelmed due to its connection to a blocked riparian drain.	3	Anglian Water - Yes North East Lincs IDB - Yes LCC - Yes	North East Lincolnshire Internal Drainage Board to clear riparian drain. Anglian Water to investigate cross contamination of foul and surface water systems. LCC to investigate the provision of a new chamber on the culverted section of watercourse in order to facilitate further investigations. Riparian owners to be advised of their responsibilities.	No further action at this time	AW North East Lincs IDB LCC	No Action at present	No Further Action
28-Jun-12	Brigg Road	Moortown	North	Steve Wiles Area Highways Manager North Division North Area	Extreme rainfall (in the order of a 1 in 200 year event) caused the riparian ditches in front of properties on Brigg Road to overtop causing internal flooding.	1	Ancholme IDB - Yes	Riparian owners have been advised to clear the ditches in front of their properties. Ancholme Internal Drainage Board is to advise residents and promote investigation into the outfall of riparian watercourses into Nettleton Beck. Ancholme Internal Drainage Board requested to assess for enforcement action.	IDB requested to assess for enforcement action.	Ancholme IDB	On-going	Investigation & Enforcement 2014/15
28-Jun-12	Faldingworth Road	Spridlington	North	Steve Wiles Area Highways Manager North Division Northern Area	Extreme rainfall (in the order of a 1 in 200 year event) caused surcharging of the highway drainage system in the village and internal flooding.	1	LCC - Yes	Highway drainage system found to be in good order following the investigation. As the flooded property has a very low threshold Property Level resilience recommended.	No further action at this time	LCC	No Action at present	No Further Action
06-Jul-12	Beevor Street	Lincoln	North	Jeanne Gibson Area Highways Manager North Division Lincoln City Area	Internal flooding to an industrial property caused by blockage to private sewer	1	None	Advised company to investigate the blockage and connection of their private sewer. This has now been carried out and has been cleared through to its connection with the Anglian Water system in Beevor Street.	No further action at this time	Private	Completed	Complete
10-Jul-12	Laing Close	Bardney	North	Alan Brown Area Highways Manager North Division Southern Area	Surcharging from foul and surface water sewers due to blockages within the SWS and possible concerns over operation of foul sewer system due to possible downstream pump failure, excessive surface water connectivity to the foul sewer and the effectiveness of the overflow arrangements at the pumping station.	1	Anglian Water- Yes Witham 3rd IDB - Yes	LCC system checked and functioning effectively. Anglian Water has provided resilience measures at a property on Laing Road. Anglian Water to check and repair their systems and investigate the flow carried by the foul system and validate the capacity of the foul sewer, including the operational effectiveness of the foul pumping station and its emergency overflow arrangements. The installation of a flap valve to the surface water sewer outfall at the rear of Baltholomew Close should be investigated. Witham 3rd Internal Drainage Board to complete its study into the benefits of upgrading its culvert through the garden of a property on Abbey Road.	LCC system checked and ok, problems found with AW SWS and reported to AW taken mitigating action by erecting flood boards at the property.	AW, Witham 3rd IDB	No Action at present	No Further Action
01-Dec-13	High Street	Heighington	North	Alan Brown Area Highways Manager North Division Southern Area	Surface and Ground water flooding (from a private Well) groundwater entered the lowest room in the property (the former dairy) following prolonged wet weather.	1	LCC, Private	The provision of a new overflow for the well will certainly allow for a significant discharge from the area. However it is difficult to confirm whether the arrangements installed will limit the rise in groundwater levels should similar weather conditions recur. The effectiveness of the completed installation be monitored by on-going liaison between LLFA and the owners.	The Property Owners have subsequently obtained consent to lay a new overflow pipe from the well to the beck and have privately funded its construction with all the site works complete.	Private	Complete	Completed
06-Jul-12	Quadring Road	Donington	South	Andy Wharff Area Highways Manager South Division Boston	Following a period of heavy rainfall it is assumed that both footway and carriageway water entered the footway drainage system. The carriageway is significantly higher than the footway and properties on Quadring Road. There is also the possibility that the combined sewer was overwhelmed.	1	LCC - Yes Anglian Water - Yes	LCC investigations have identified that the Highway drainage does not outfall to the Anglian Water combined sewer. The highway drainage system was compromised some distance from the development. This has now been repaired and a new outfall provided to a nearby Highway Drain.	Further investigations identified that the Highway drainage did not outfall to the AW Combined sewer and was compromised some distance from the development. System now repaired and new outfall provided to a neighbouring Highway Drain.	LCC	Complete	Completed
06-Jul-12	High Street	Gosberton	South	Andy Wharff Area Highways Manager South Division Boston	Heavy rainfall caused the piped and open dykes within the village to overflow which caused internal flooding.	1	Welland and Deepings IDB- Yes LCC - Yes	LCC have checked the highway drainage system in the vicinity and found it to be clear. Maintenance to Highway drainage system and riparian ditches and piped drains undertaken.	Maintenance to Highway drainage system and riparian ditches and piped drains undertaken	LCC / IDB	Complete	Complete
01-Apr-12	Church Lane	Brandon	West	Mark Heaton Area Highways Manager West Division Grantham	Overland flow from adjacent land. Saturated ground leading to overland flow which may have been exacerbated due to the lack of maintenance of riparian watercourses. South Kesteven District Council has given advice, and a drainage alleviation showing a proposed filter drain to the side of the property to intercept overland flows and underground surface water, which has not been approved by LCC.	1	Lincolnshire County Council - Yes South Kesteven District Council - Yes Upper Witham IDB - Yes	Property owner to maintain his filter drain. LCC Highways to improve highway drainage to remove standing surface water. Risk Management Authorities to ascertain ownership of all watercourses and advise the owners to clear/maintain them periodically.	LCC to install and improve highway drainage system to reduce the risk of standing surface water. Carriageway works complete, further works in regard to ditch clearing required	LCC, SKDC, UWIDB	On-going	Partially Complete
29-Apr 28-June 6-July	Warterloo Cottages A607	Belton	West	Rowan Smith Area Highways Manager West Division Sleaford	Surface water from public highway and adjacent private land flowing onto properties .	2	Lincolnshire County Council - Yes Upper Witham IDB - Yes Environment Agency - Yes South Kesteven District Council - Yes	Upper Witham Internal Drainage Board has carried out enforcement on riparian owner for watercourse improvements. LCC Highways is designing improvements to the drainage system.	New drainage system/dike renewal (seeking funding) Scheme Designed due to be built summer 2014	LCC	On-going	Works programmed Summer 2014

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28-Jun-12	A607 Main Street	Carlton Scoop	West	Mark Heaton Area Highways Manager West Division Grantham	Surface water run-off from private land running onto highway then running from highway and entering front of cottage	1	LCC - Yes Upper Witham IDB - Yes	IDB undertaking enforcement, further LCC investigation to be carried out.	IDB undertaking enforcement. Further LCC investigation to be carried out. System Jetted requires new Manhole order will not be placed until other issues have been resolved.	LCC Upper Witham IDB	Complete	Completed
28-Jun-12	Bridge End Road	Grantham	West	Mark Heaton Area Highways Manager West Division Grantham	Highway surface water run-off entering front of property and exiting from the rear due to root obstructions in Anglian Water system	1	LCC - Yes Anglian Water - Yes	Anglian water have undertaken root clearance works.	AWA scheme completed	AWA	Completed	Complete
28-Jun-12	High Street North and South, Manor Street, Chapel Street and Chestnut Street	Ruskington	West	Rowan Smith Area Highways Manager West Division Sleaford	Overtopping of Ruskington Beck (main river) and surcharge of foul sewers and overtopping of riparian watercourse.	6	Environment Agency- Yes Anglian Water - Yes Witham 1st IDB (Enforcement) - Yes	The Environment Agency is to remodel Ruskington Beck (hydraulic) and carry out riparian enforcement. Anglian Water is investigating the foul water system and is considering an improvement scheme. A bid for an overall study for Ruskington has been submitted for feasibility, design and works.	Investigation ongoing LCC, AWA, EA meeting held 11/6/14 with all partners' involved to discuss scheme brief. SAB approval required. Feasibility and Design 2014/15 Work 2016/17	LCC / AWA / EA	On-going	Feasibility and Design 2014/15 Possible works 2015-17
28 June 12 6 July 12	The Avenue	Grantham	West	Mark Heaton Area Highways Manager West Division Grantham	Highway surface water run-off entering front of property. Highway SWS backed up due to capacity issues within Anglian Water system	1	LCC - Yes Anglian Water - Yes	Anglian Water scheme completed.	AWA scheme completed	AWA	Completed	Complete
28-Jun-12	Thorald Avenue	Cranwell	West	Rowan Smith Area Highways Manager West Division Sleaford	Surface water surcharge from private parking area and Highway gullies onto private property causing internal flooding of conservatory. Possible contributing factors due to the development of adjacent land which was historically an area of flood plain. Non maintenance of riparian watercourse.	1	Witham 1st IDB - Yes Lincolnshire County Council - Yes North Kesteven District Council Yes	Investigations ongoing between LCC, North Kesteven District Council and Landowners. Small scheme to divert water away from garages being looked at. Landowner has been written to regarding possible cutting of new dyke.	Investigations ongoing LCC, NKDC, Landowners Possible scheme being investigated to divert highway water away from private land	LCC / NKDC / Landowners	On-going	Investigation Autumn 2014
28/06/2012 & 29/06/2012	North Street	Digby	West	Rowan Smith Area Highways Manager West Division Sleaford	Overland flow from field into private properties, also blocked culvert/watercourse on school playing field.	8	LCC - Yes Witham 1st IDB - Yes	LCC, Witham First IDB and the Environment Agency are to undertake local maintenance and improvement works following consultation with the Parish Council. A bid for an overall study for Digby has been submitted for feasibility, design and works.	Local maintenance work carried out by LCC, IDB & Landowner and residents on Green Dykes and North Street. Wider scheme under consideration. Feasibility and Design 2014/15. Possible works 2015/16/17	LCC, IDB, EA Private Landowner	On-going	Feasibility and Design 2014/15 Possible works 2015-17
28/06/2012 & 29/06/2012	Beck Street	Digby	West	Rowan Smith Area Highways Manager West Division Sleaford	Overtopping of Digby Beck (main river) and capacity issues on the foul sewer	2	Environment Agency - Yes Anglian Water - Yes LCC - Yes					
28/06/2012 & 29/06/2012	The Hurn	Digby	West	Rowan Smith Area Highways Manager West Division Sleaford	Overtopping of IDB drain (Digby Beck North Branch) and riparian watercourse. Suspected failure of Anglian Water foul pumping station.	10	Witham 1st IDB - Yes Anglian Water - Yes					
29-Jun-12	Tattershall Road	Billinghay	West	Rowan Smith Area Highways Manager West Division Sleaford	Blockage on a private gully which backed up and water entered a property through an external door.	1	LCC - Yes	System jetted and cleared. No evidence of cause of blockage. Now on 3 x per year cleansing and jetting highway drain to outfall.	No further action at this time	LCC	Completed	Complete
28-Jun-12	Main Street	Scopwick	West	Rowan Smith Area Highways Manager West Division Sleaford	Ditch backing up and overtopping due to volume of surface water in the main surface water pipe system.	1	Witham 1st IDB (Enforcement) - Yes Lincolnshire County Council - Yes	LCC have jetted the system, further investigations into ownership of main piped drain and open ditch are ongoing. Two pipes under the road culvert were sufficient to cope with the expected flows and no alterations will be required. However, it was agreed that a camera survey would be appropriate to ensure flow was unrestricted, this was completed in Nov 2013. The drainage report clearly shows two intrusions of utility apparatus blocking the flow at two separate points by up to 40%. AWS & WPD are being chased in to getting them to repair the breakages and move their services out of the way. Historic information indicates that Blankney Estates have done very little drainage maintenance over many years. Overland water and ground water is being deposited / is flowing into the new development and the drainage on the site is at near capacity. There are concerns that water from this site will end up in the open dyke adjacent to the property that suffered flooding.	Works carried out on replacement of culvert April 2014. Further investigation works to clear other obstructions on going, and liaising with EA in regards to surface water flow.	LCC	On-going	Further investigations Summer 2014
28-Jun-12	Southgate	Sleaford	West	Rowan Smith Area Highways Manager West Division Sleaford	Surface water from public highway and private land flowing into properties through front and rear entrances.	2	Lincolnshire County Council - Yes Anglian Water - Yes	LCC to advise properties on self prevention measures relating to flood resilience. Anglian Water to investigate capacity of combined system.	LCC actions completed but awaiting AWS investigation. LCC liaising with Anglian Water in regards to capacity issues.	LCC	On-going	Investigations 2014
28-Jun-12	Various	Timberland & Thorpe Tilney village	West	Rowan Smith Area Highways Manager West Division Sleaford	Surcharging of open watercourses and assumed restrictions within culverted sections. Surcharge of public surface and foul water systems.	3	Witham 1st IDB - Yes Lincolnshire County Council - Yes Anglian Water - Yes	Improvement works on LCC watercourse undertaken November 2012. Ongoing LCC investigations, further excavations to commence to provide access for CCTV survey, also minor kerbing improvements and works issued. A meeting has been held with the Parish Council/Flood Group/National Flood Forum. A bid for an overall study for Timberland has been submitted for feasibility, design and works.	Local work involving excavations to provide access for CCTV survey on-going. Kerbing work completed. Wider scheme Feasibility and Design 2016/17/18 Possible works 2018/19	LCC	On-going	Feasibility 2017/18 Possible works 2018/19

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28-Jun-12	High Street and The Drift	Walcot	West	Rowan Smith Area Highways Manager West Division Sleaford	Flooding of property caused by volume of water backing up in the surface water system. Further investigations revealed at least 6 properties off the drift which were internally flooded. This flooding was a combination of blockages in the surface water system and intensity of rainfall.	7	Lincolnshire County Council - Yes Anglian Water - Yes	Anglian Water works in progress. LCC improvement scheme ongoing. A meeting with Walcott Parish Council has been held.	AWS works complete. LCC works programmed summer 2014	LCC / AWS	On-going	Completion 2014/15
28-Jun-12	West End / High Street	Swaton	West	Rowan Smith Area Highways Manager West Division Sleaford	Overland surface water flowing through private land. Separate case of overtopping of Swaton Eau flooding carriageway and property basement.	2	Environment Agency - Yes Black Sluice IDB - Yes Lincolnshire County Council - Yes	The Environment Agency has completed their hydraulic modelling works. Black Sluice Internal Drainage Board has previously bid for an improvement scheme. LCC/Environment Agency have been asked to assist with scheme promotion.	EA completed modelling, discussion on-going with LCC regarding possible escape route for residents. Also considering resilience measures for properties	LCC / EA	On-going	EA Feasibility Study 2014/15 Possible works 2016/17
05-Jul-12	Casthorpe Road	Barrowby	West	Mark Heaton Area Highways Manager West Division Grantham	Highway surface water and surface water from private property flowing into garage and residential property.	1	LCC - Yes	Lincolnshire County Council are designing improvements to surface water drainage and advising residents on self protection	LCC are designing improvements to surface water drainage and advising residents on self protection	LCC	On-going	2014
06-Jul-12	South Drove Fen	Helpringham	West	Rowan Smith Area Highways Manager West Division Sleaford	Combination of private and highway surface water which drained to property	1	LCC - Yes	LCC have installed a new gully and outfall to dyke on the opposite side of the road.	Works completed by LCC Highways	LCC	Compete	Complete
06-Jul-12	Boundary Button Hole Cottages	Allington	West	Mark Heaton Area Highways Manager West Division Grantham	Overtopping of Riparian ditches upstream of recently piped section of surface water run-off from fields and highway	2	LCC - Yes Upper Witham IDB - Yes	The Upper Witham IDB have undertaken enforcement and cleared the drain. LCC highways have issued an order to provide a new piped highway drainage system	LCC to provide new highway drainage system. Works to be undertaken in summer 2014	LCC	On-going	2014
06-Jul-12	High Street	Harlaxton	West	Mark Heaton Area Highways Manager West Division Grantham	Current drainage system insufficient capacity and backed up causing flooding to the carriageway and 2 properties	2	LCC - Yes Upper Witham IDB - Yes Anglian Water - Yes	Following detailed investigation a joint scheme between LCC and Upper Witham IDB has been completed. EA to investigate Mow Beck watercourse downstream.	LCC surface water scheme completed	LCC	Completed	Complete
06-Jul-12	Main Road	Long Bennington	West	Mark Heaton Area Highways Manager West Division Grantham	Groundwater flooding through the cellar .	1	LCC - Yes	Resident advised to tank cellar.	Advice provided	LCC	Completed	Complete
06-Jul-12	White Cross Lane / Asgardby Road	Burton Pedwardine	West	Rowan Smith Area Highways Manager West Division Sleaford	Surface water surcharge from private open watercourse to the east.	2	Black Sluice IDB - Yes	Black Sluice IDB to carry out enforcement. Resident met and awaiting proposals which may be subject to a highway contribution. Awaiting Confirmation.	Discussions still ongoing between LLFA, IDB and residents. LCC have found and cleaned 2 pipes under road No further action required	LCC Black Sluice IDB	Completed	Complete
06-Jul-12	Leasingham village	Leasingham	West	Rowan Smith Area Highways Manager West Division Sleaford	Surface water and foul water flooding capacity issue on watercourse running through the village, also capacity/maintenance issue with pumped foul sewer.	2	Environment Agency - Yes Anglian Water - Yes LCC - Yes Witham 1st IDB (Enforcement for LLFA) - Yes	Further investigations to be carried out by LCC, and further discussions to be held with the other listed risk management authorities.	Drainage system investigation currently being carried out. Issues with highway system at upstream end of village which is full of silt and roots. Further investigations on the remainder of the surface water system required. Works programmed winter 2014	LCC / AWA	Ongoing	2014
06-Jul-12	Allington Road	Sedgebrooke	West	Mark Heaton Area Highways Manager West Division Grantham	Following an intense period of rain, highway surface water and watercourses overtopping flooding breaching property thresholds.	2	Environment Agency - Yes Upper Witham IDB - Yes LCC - Yes Anglian Water - Yes	Environment Agency have cleared out the Beck, Upper Witham IDB have cleared the riparian ditch and are negotiating with Parish Council to maintain in future. Lincolnshire County Council to install new kerbing fronting properties affected (order placed). Anglian Water to undertake installation of non return flap valves.	LCC to install new kerbing	LCC EA UWIDB	Completed	Complete
06-Jul-13	Newton Village	Newton near Haceby	West	Rowan Smith Area Highways Manager West Division Sleaford	Overtopping of riparian dykes.	7	Black Sluice IDB - Yes Lincolnshire County Council - Yes	LCC proposing to replace culvert on Church Road, and the Black Sluice Internal Drainage Board/LCC are to explain further riparian duties to residents. Details of additional enforcement requirements to the east of the village have been sent to the Black Sluice Internal Drainage Board.	TSP instigated modelling works for catchment area including the village which will take account of new private protection of properties that have been carried out since enforcement letters were sent in June 2013. Proposed culvert replacement programmed for Design and Build 2014/15/16	LCC / Black Sluice IDB	On-going	Feasibility, Design & Build 2014/15/16

Duty to Investigate
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06-Jul-13	Thorn Cottage	Aswarby	West	Mark Heaton Area Highways Manager West Division Grantham	Water breached the banks of the South Beck and flooded adjacent agricultural land and the garden Thorn Cottage . Flood water surrounded the property and outbuildings Lincolnshire Fire & Rescue evacuated the occupants and pets due to the flow of water demolishing the deck of the access bridge. Flood water entered the property through the lounge floor before breaching the front & rear door thresholds Due to the property being served by Septic tanks, flood water overwhelmed these systems and contaminated the water which again consequently entered the property.	1	Lincolnshire County Council - Yes Black Sluice IDB - Yes Environment Agency - Yes	Flooding at this location can be attributed to the lack of maintenance to South Beck which fronts the property. Environment Agency to undertake major weed control maintenance throughout the length of South Beck west and east of Thorn Cottage to increase capacity for flow. Environment Agency to review their existing maintenance regime of the South Beck to ensure flows can be accommodated through its length to South Forty Foot drain. Black Sluice to undertake enforcement of obstructions and maintenance on the riparian watercourses to the west of Thorn Cottage which is within their board area.	Regular maintenance of Main rivers & Riparian Watercourses	LCC, Black Sluice IDB, EA	Completed	Complete
23-Jul-13	York Road	Stamford	West	Mark Heaton Area Highways Manager West Division Grantham	Blocked gullies on Sussex Road causing water to back up in York Road resulting in internal flooding.	1	Lincolnshire County Council - Yes South Kesteven District Council - Yes	Following the 1 hour emergency response, LCC investigated a potential blockage and emptied gullies. Initial investigation showed that the gully on the south side of York Road (near No 4) was blocked approximately 3m from the gully access. The jetter cleared the initial blockage, however jetting could only be undertaken for approximately 20m to an area under the conservatory at the rear of no. 2 York Road. Emergency road closure to install a new double gully and connect to existing surface water system on Sussex Road (approval sought and received from Anglian water).	Installation of a new double gully on York Road and connect to existing storm water system on Sussex Road.	LCC /AW	Completed	Complete
6th Aug 2012	Gorse Hill Lane	Caythorpe	West	Mark Heaton Area Highways Manager West Division Grantham	Following an intense period of rain, excess surface water did not drain away fast enough from the gully at the boundary with Kings Hill, causing surface water to flow across the carriageway and breach the verge and enter the properties driveway, subsequently overtopping the properties threshold causing internal flooding.	1	LCC - Yes	The profile of the carriageway may cause excess surface water to miss gullies at the boundary of Kings Hill. The installation of a vehicular access built to the correct specification may also prevent further occurrences of flooding by increasing the check between the carriageway and the property.	Further investigations of surface water system required, possibly aided by development plans for Kings Hill. - Level survey and wet weather inspection to be carried out to establish validity of highway drains.	LCC	On-going	Summer 2014
21-Nov-12	Irnham road	Corby glen	West	Kevin Brumfield Area Highways Manager West Division Thurlby	Overland flow from adjacent farm land.	1	LCC - Yes	S19 Report in progress	Further investigations required	LCC	On-going	Summer 2014
26-Nov-12	The Grove	Hanthorpe	West	Kevin Brumfield Area Highways Manager West Division	Surcharge from dike/drains.	1	Lincolnshire County Council - Yes South Kesteven District Council - Yes	LCC continue to discuss issues with residents. LCC arranged a 1hour emergency response team to clear and investigate potential blockages and issue sandbags due to the period of heavy rainfall. The investigation identified there was a culverted driveway using a 600mm concrete pipe which has a foul sewer connection crossing through which is then connected onto two 150mm pipes, this connection is of a poor standard, further restrictions included tree roots which have been removed. There is a planning history with regard to the culverted vehicle crossing, which has not been constructed as the original planning permission. This is currently under investigation by South Kesteven District Council. All remedial work that has been carried out appears to have alleviated the problem to a certain extent. Further works planned include installation of a trash screen on the pond side to stop any large debris entering the watercourse.	trash screen to be installed on the pond side of the culvert. LCC have undertaken highway drainage improvements in winter 2013 and have liaised with residents in regards to culvert improvements.	LCC/SKDC	On-going	Summer 2014
23-Jul-13	Main Street	Long Bennington	West	Mark Heaton Area Highways Manager West Division Grantham	The rainfall event led to surface water from the Manor Drive estate flowing out of the junction to join the flow running along Main Road, which entered the property.	1	Lincolnshire County Council - Yes STW - Yes	LCC jetted all highway surface water drainage in the area to ensure no blockages. Installation of kerbing and an extra highway drainage has been completed. Investigation into the foul drain has been carried out by Severn Trent Water and two blockages/breaks in the system have been repaired.	No further action	LCC STW	Completed	Complete
23-Jul-13	Oster Fen Lane	Claypole	West	Mark Heaton Area Highways Manager West Division Grantham	Due to heavy rainfall that fell on the 23rd/24th July 2013, a property suffered internal flooding. The owner reported that there was inadequate drainage along Oster Fen Lane and Main Street and the drainage that was there was not maintained. The road is covered in silt and the gullies were blocked with straw. The owner stated the road had previously flooded.	1	Lincolnshire County Council - Yes South Kesteven District Council - Yes	LCC instructed a gully tanker to clean and jet the highway drainage system outside the property, the system was reported to be running well. Anglian Water CCTV'd the public sewer several weeks later, it identified tree roots to the extent that the survey had to be terminated. The removal of the tree roots has been undertaken and a further CCTV investigation is due to take place. Property owner is to investigate downpipes and gully at rear of property. SKDC to undertake regular carriageway sweeping in the village to reduce the amount of detritus to build up around the gullies.	Following CCTV of Drain & Sewer, The sewer has had the required maintenance carried out. District Council to ensure carriageways are swept regularly	LCC, AW, Private	Completed	Complete
06-Aug-13	New Cross Roads	Stamford	West	Mark Heaton Area Highways Manager West Division Grantham	Standing water collected at the front of the property and caused internal flooding.	1	Lincolnshire County Council - Yes Anglian Water - Yes	All highway drainage found to be running clear on New Cross Roads, however the kerb off let opposite the property was found to be blocked and required work to be carried out. On a site visit on 7th August a gully located on Sussex Road was also identified as being blocked with leaf matter & debris this was later cleared. Recommendations made include LCC to clear the blocked off let, Anglian Water to maintain their utility surface water drainage system, the property owner to maintain their rainwater outfall, and alterations to be made to the rainwater drainage of the properties here so rainfall is shared more evenly and not concentrated in one location.	No further action	LCC, AW, Private	Completed	Complete
20-Oct-13	Kings School, Brook Street	Grantham	West	Mark Heaton Area Highways Manager West Division Grantham	Surface water flooding on carriageway caused water entered the classroom and cellar.	1	LCC - Yes	LCC have cleaned and jetted out the carriageway gully. Further investigations to be carried out including a CCTV investigation and observations to ensure the drainage system is running adequately in the area.	LCC have cleaned and jetted out the carriageway gully. Further investigations to be carried out including a CCTV investigation and observations to ensure the drainage system is running adequately in the area.	LCC	Completed	Complete

Duty to Investigate
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24th May 2014	High Street	Kexby	North	Steve Wiles Area Highways Manager North Division- Northern Area	History of surface water flooding and Drainage issues in location. Most recent event involved an intense period of persistent rain caused surface water drains to back up and flow into the garden and driveway and then into the property whilst the resident was not at home.	1	LCC	Division have arranged the surface water drainage system to be jetted and cleansed, however there is evidence that there is a broken pipe within the system. It is proposed to install a new section of surface water drain to create a connection to another system which is known to be in good order, providing an alternative outfall and rendering the damaged pipe redundant. WLDC have been advised to sweep the roads to prevent excess silt and debris to block the drain.	System has been cleansed and jetted, WLDC have swept the roads. Order to replace damaged surface water drain is currently in process by area highway team.	LCC	On-going	On-going
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