

## **PART TWO - STRATEGIC ASSESSMENT OF TOWNS AND LARGE VILLAGES**

1.0 This section contains extracts from the Environment Agency Flood Zone maps for each of the inland towns and large villages identified in the Local Plan along with a brief outline of the key features.

1.1 The Environment Agency is continuously updating its information on flood risk areas and whilst these maps indicate their current extent, the latest and more detailed information, including the surface water flood map should be obtained from the Agency's website.

<http://maps.environment-agency.gov.uk/wiyby/wiybyController?topic=floodmap&layerGroups=default&lang=e&ep=map&scale=7&x=531500&y=181500>

1.2 Also shown on the maps is the broad location of historic flooding events. Information on the cause and extent of these events is not included in the SFRA nor, what, if any remedial action/improvements has occurred since. That information may, however be available from the relevant authorities (ie IDB, EA, LLFA).

## ALFORD

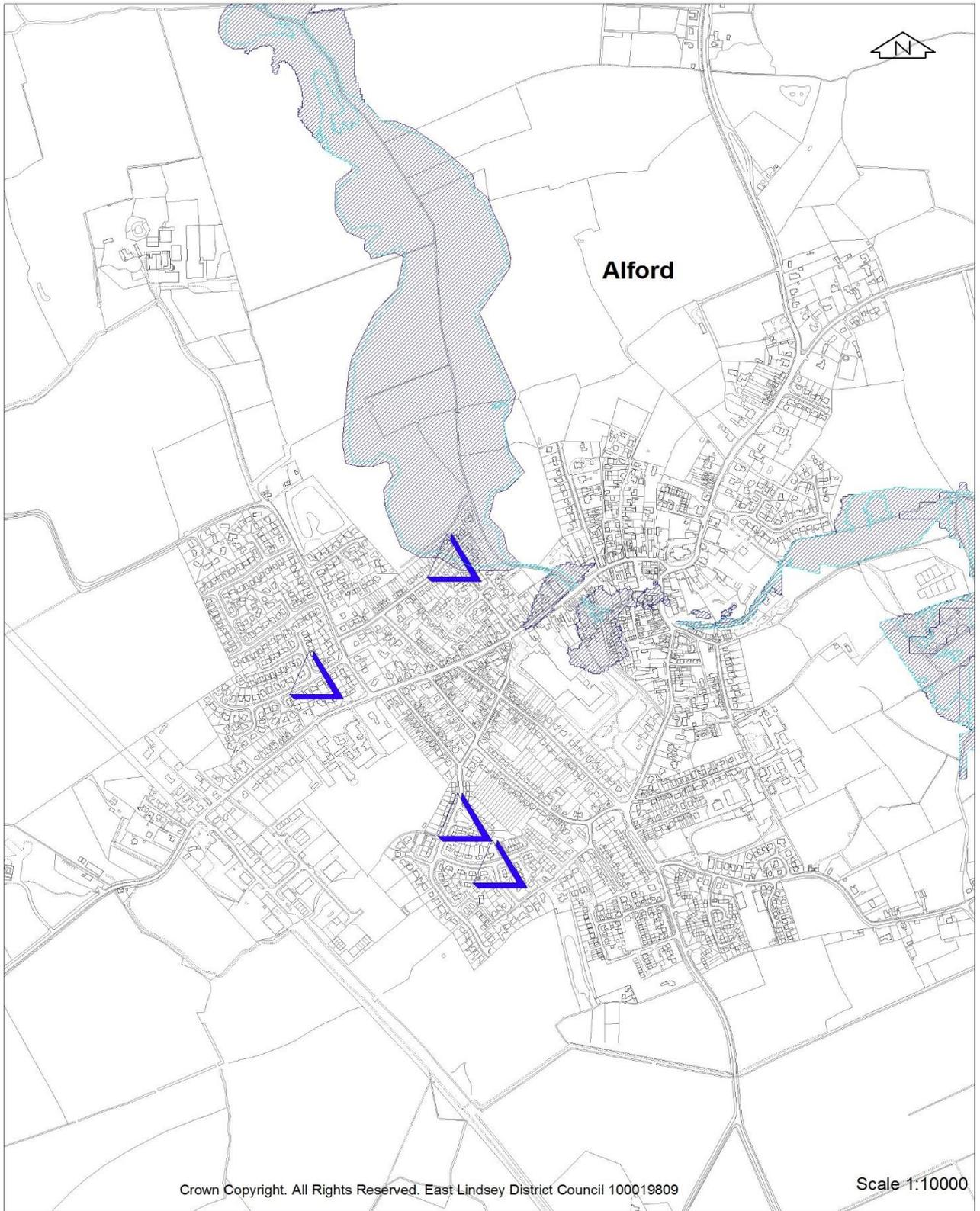
As the Map shows, the main threat of flooding to Alford originates from the Wold Grift Drain that flows south through the centre of the town and then eastwards towards the coast.

The areas identified as being at risk are:-

- Parts of Christopher Close,
- The north side of West Street where the drain is culverted beneath the road.
- The area to the south of West St where the Wold Grift and Mill Rundle drain meet, and;
- Parts of South Market Place.

Fluvial flood risk is therefore likely to have a limited impact on the town and the choice of development sites outside the areas of risk is not unduly compromised.

The map also shows that historically, there has been some flooding from 'other sources' elsewhere in the town. This was a consequence of unusually high rainfall in 2007 and, although there is no evidence to show that there is a continuing problem in those locations it indicates that further investigation using the flood surface mapping is necessary.



Key

-  Historic Flooding Incidents
-  Flood Zone 2 (2016)
-  Flood Zone 3 (2016)

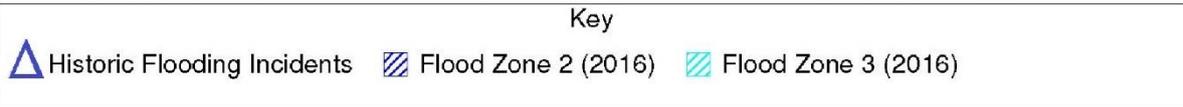
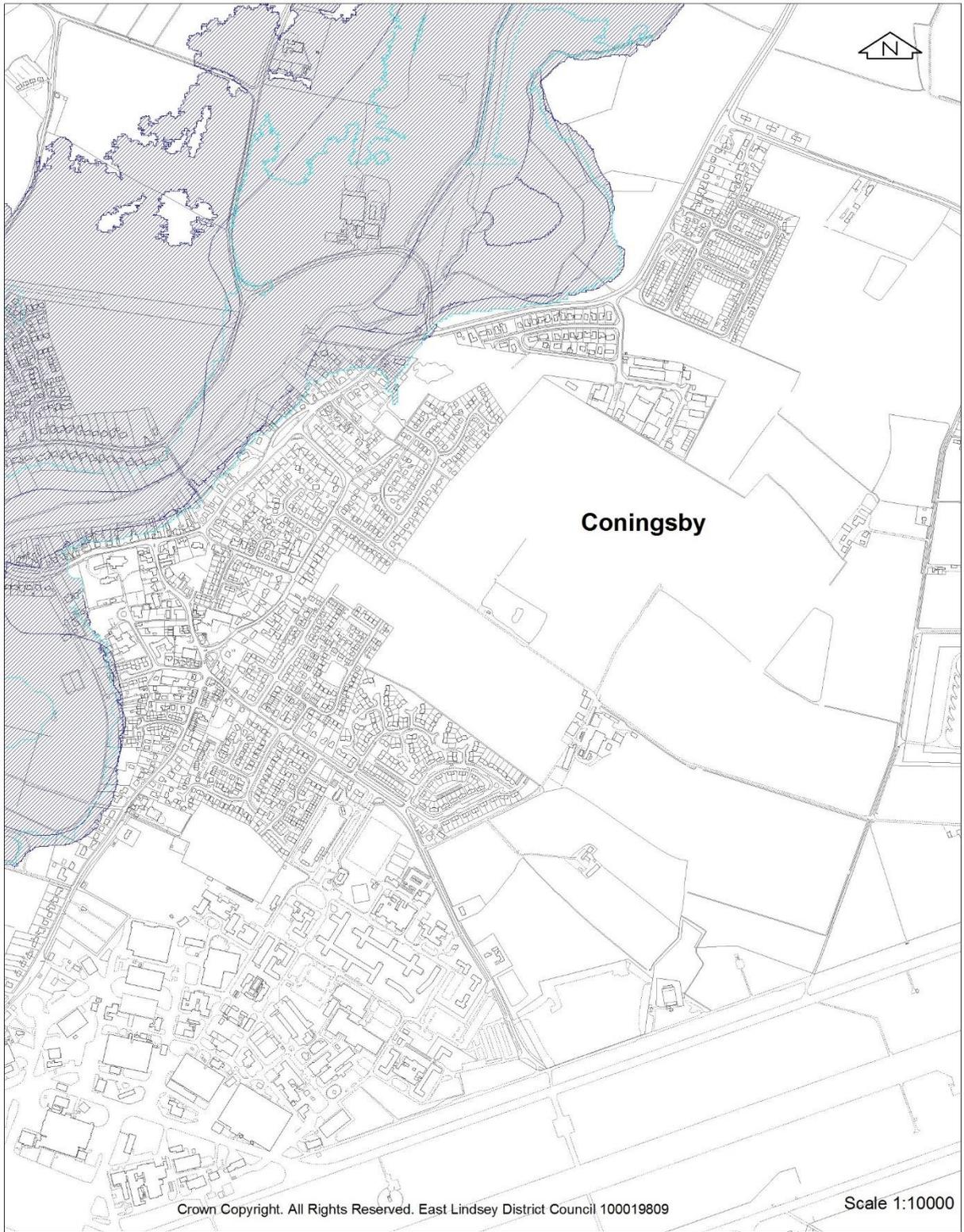
## **CONINGSBY & TATTERSHALL**

The principle threat of flooding in Coningsby and Tattershall emanates from the R. Witham a mile to the east and the River Bain.

The Bain flows west along the northern edge of Coningsby towards Tattershall before joining the Witham and forms a natural constraint for development to the north and west, of Coningsby.

There are no records of historical flooding identified in Coningsby however, the 2005 SFRA identified a potential risk of flooding from a series of drains in the south east of the town. Any development in that area will need to be accompanied by an independent Flood Risk Assessment that addresses these issues taking account of the information in the Environment Agency Surface Water Maps.

Access to Coningsby from the west (Tattershall) is also identified as a potential issue by that assessment, however access along the A153 to Horncastle is unaffected.



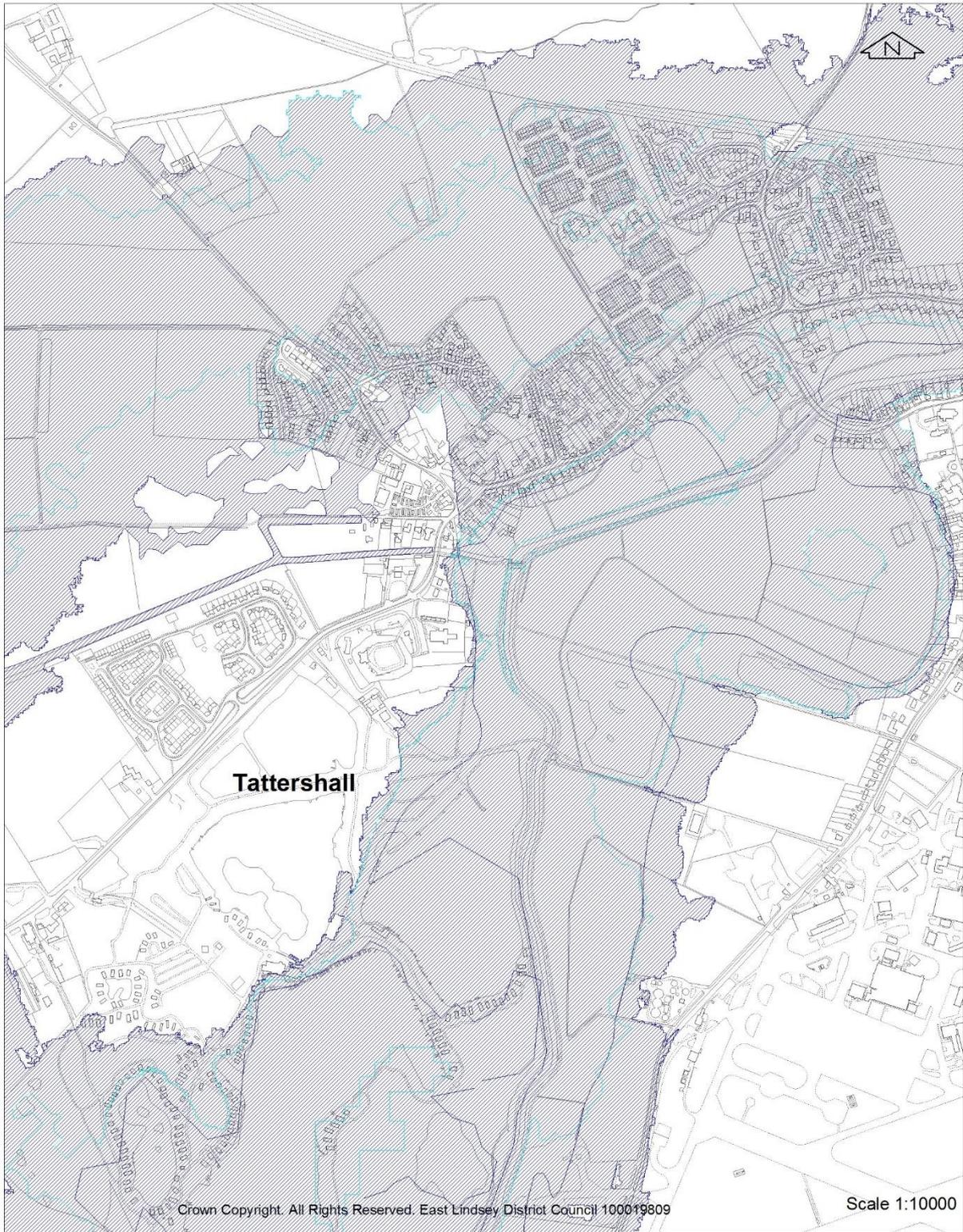
## TATTERSHALL

The majority of development in Tattershall lies to the north of the River Bain and a significant part is located in the area identified as being at risk. That risk is compounded by the potential threat from flooding associated with the River Witham some 2km to the west.

As a consequence the opportunities for further development in the confines of the town are significantly constrained, and any development around the core of the village will require a detailed Flood Risk Assessment including evidence from the Surface Water Flood Maps.

There is no record of flooding from other sources in Tattershall.

The flood zone maps suggest that access through the town may be constrained in the event of severe flooding.



**Key**

-  Historic Flooding Incidents
-  Flood Zone 2 (2016)
-  Flood Zone 3 (2016)

## HORNCASTLE

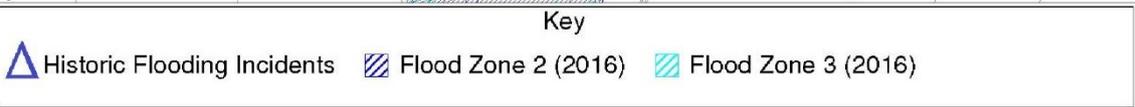
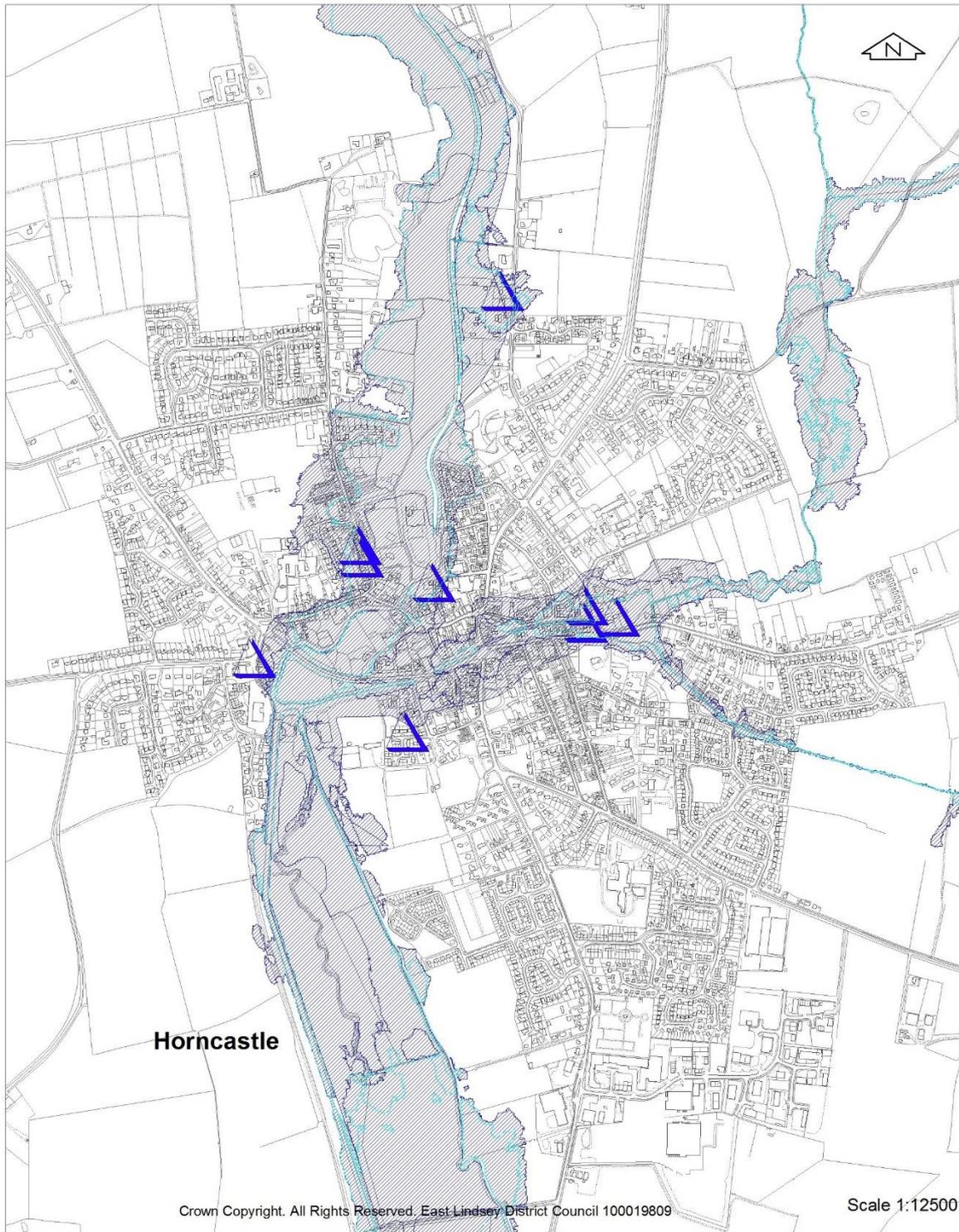
As the map shows, flood risk through the centre of Horncastle follows the line of the River Bain and River Waring rivers. The Bain runs through the town centre following a north – south axis, and joining with the Waring when they feed the canal as well as the old river. The rivers form part of the natural drainage for the area between the Wolds and the River Witham.

The majority of development in the town occupies higher ground away from the river basins and the main areas at risk are located in the older parts of the town at:-

- East St and Banks Road
- Parts of Cagthorpe
- Bridge St and West St
- Prospect St
- Watermill Road and St Lawrence St

A number of these locations (see map) have been affected by flooding in recent years and a flood alleviation scheme involving a partnership between the EA, the District and County Councils has recently been completed and should help to prevent future events.

The map also shows there are a several locations where fluvial flood risk is not an issue and, where subject to further assessment, including an examination of flooding from other sources, development might be considered.



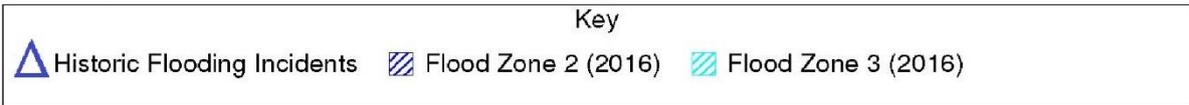
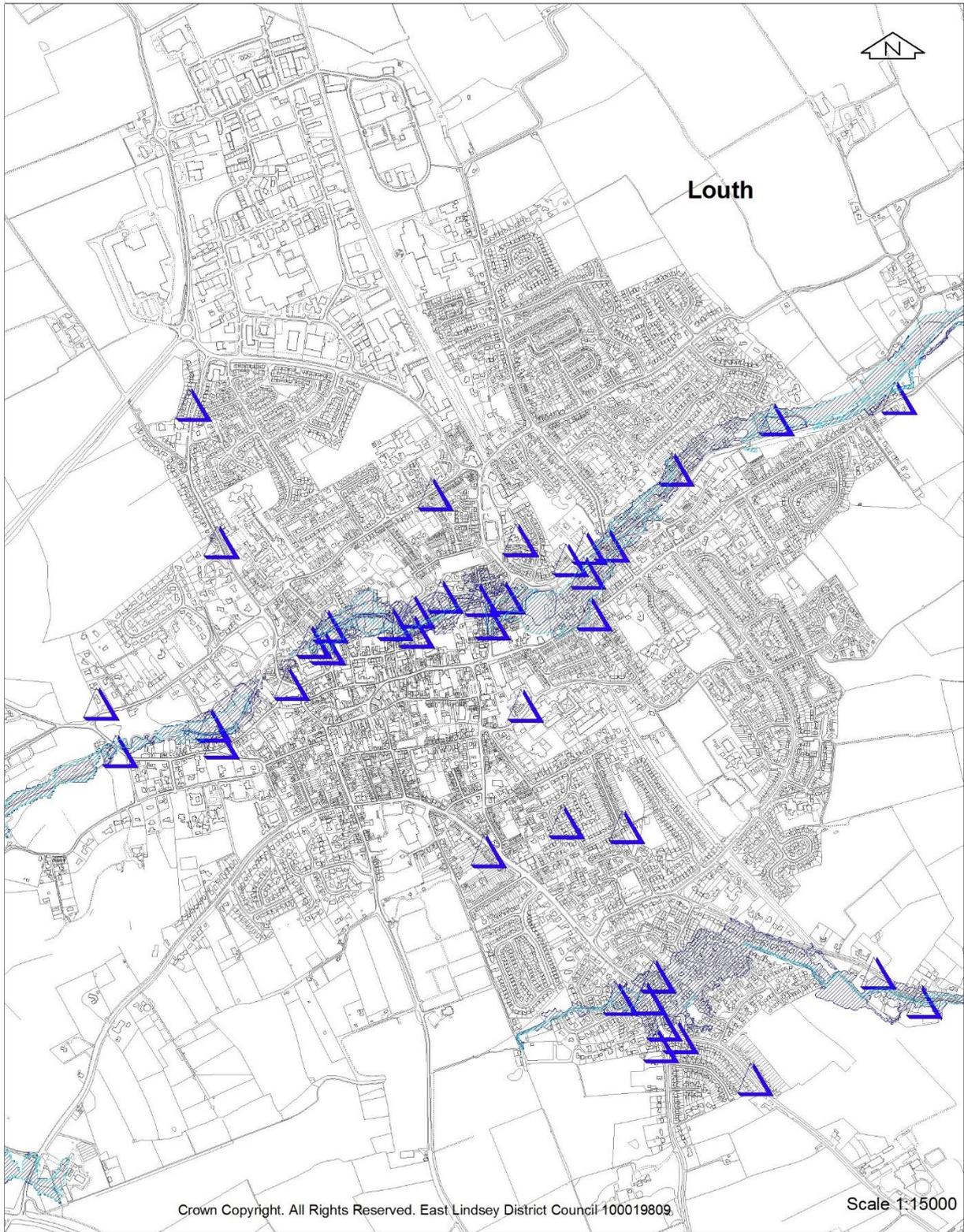
## **LOUTH**

The main risk of flooding in Louth is identified as being fluvial and emanating from the R. Lud. However, as the assessment map shows, in addition to the Lud there is also a problem related to the Stewton Beck to the south east of the town which is linked to surface water run-off in the event of flash flooding and the topography of the area surrounding the beck.

In addition to fluvial events there is also evidence of surface water issues around the town in a number of locations. The extent of development around the Lud means there are limited opportunities for significant new proposals and major new developments are likely to be located in areas of little or no risk as identified by the flood zone maps.

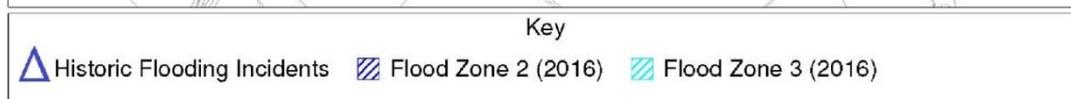
Notwithstanding this, detailed flood risk assessments will be required to address surface water issues in all locations and these should be appropriate to the scale of development and include an assessment of the capacity of existing drainage networks.

The Council, along with the EA, the County and Town Council are working together to bring forward a flood storage scheme which is intended to alleviate problems related to the Lud. Recent works have also been undertaken to improve problems associated with the Stewton Beck including run-off from surrounding fields which should mitigate against localised problems encountered in the past in that area.



## SPILSBY

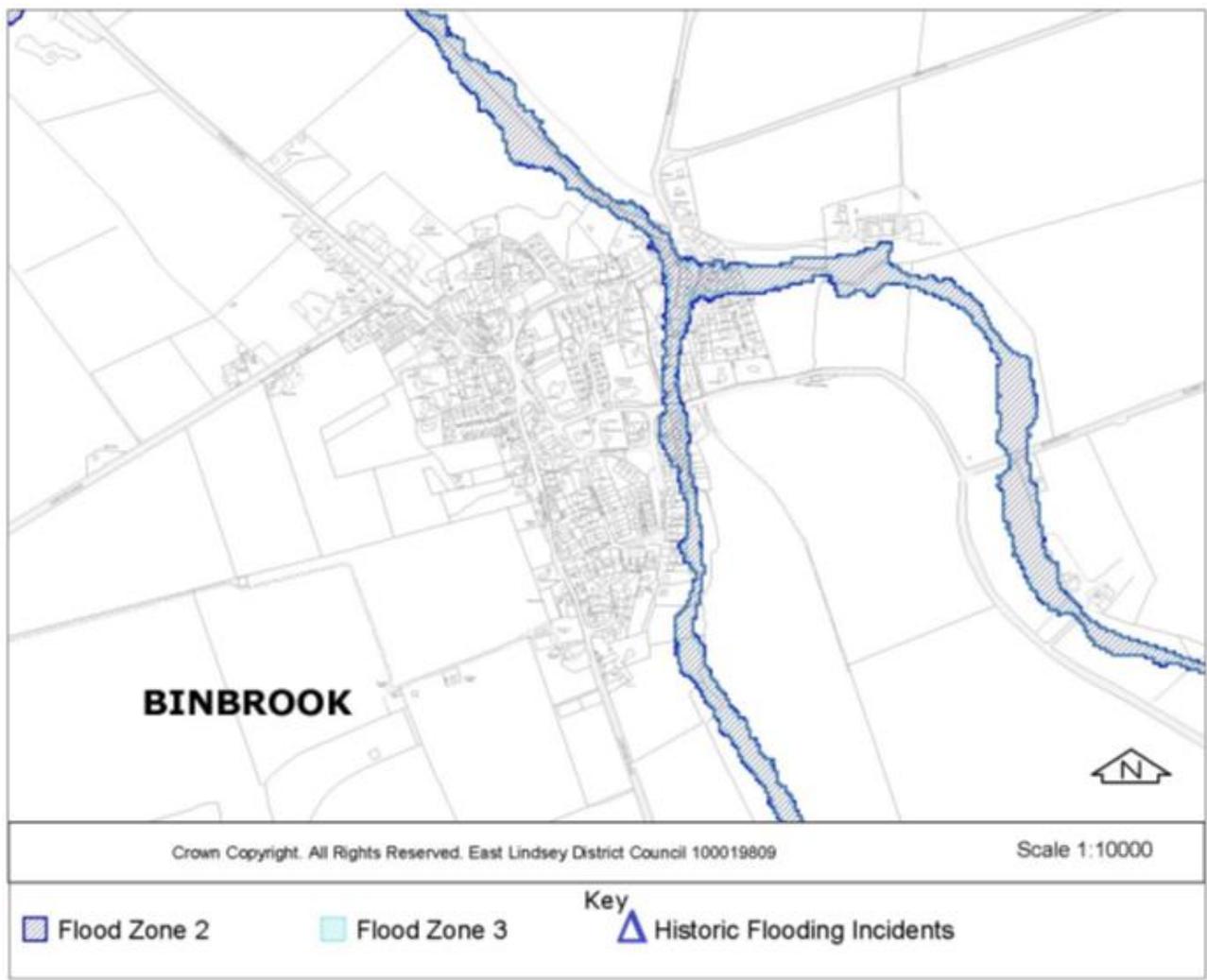
There is little or no flood risk identified at Spilsby and no recent evidence of flooding from other sources.



## LARGE VILLAGES

### BINBROOK

The Flood Zone Maps show that the area at risk of flooding in Binbrook is limited to a small area of the village and there is no record of historical events in the area. The Council's SFRA (2005) indicates that notwithstanding this, detailed FRA will be required to investigate surface water issues. There are no access /egress issues identified for the village.



### Binbrook

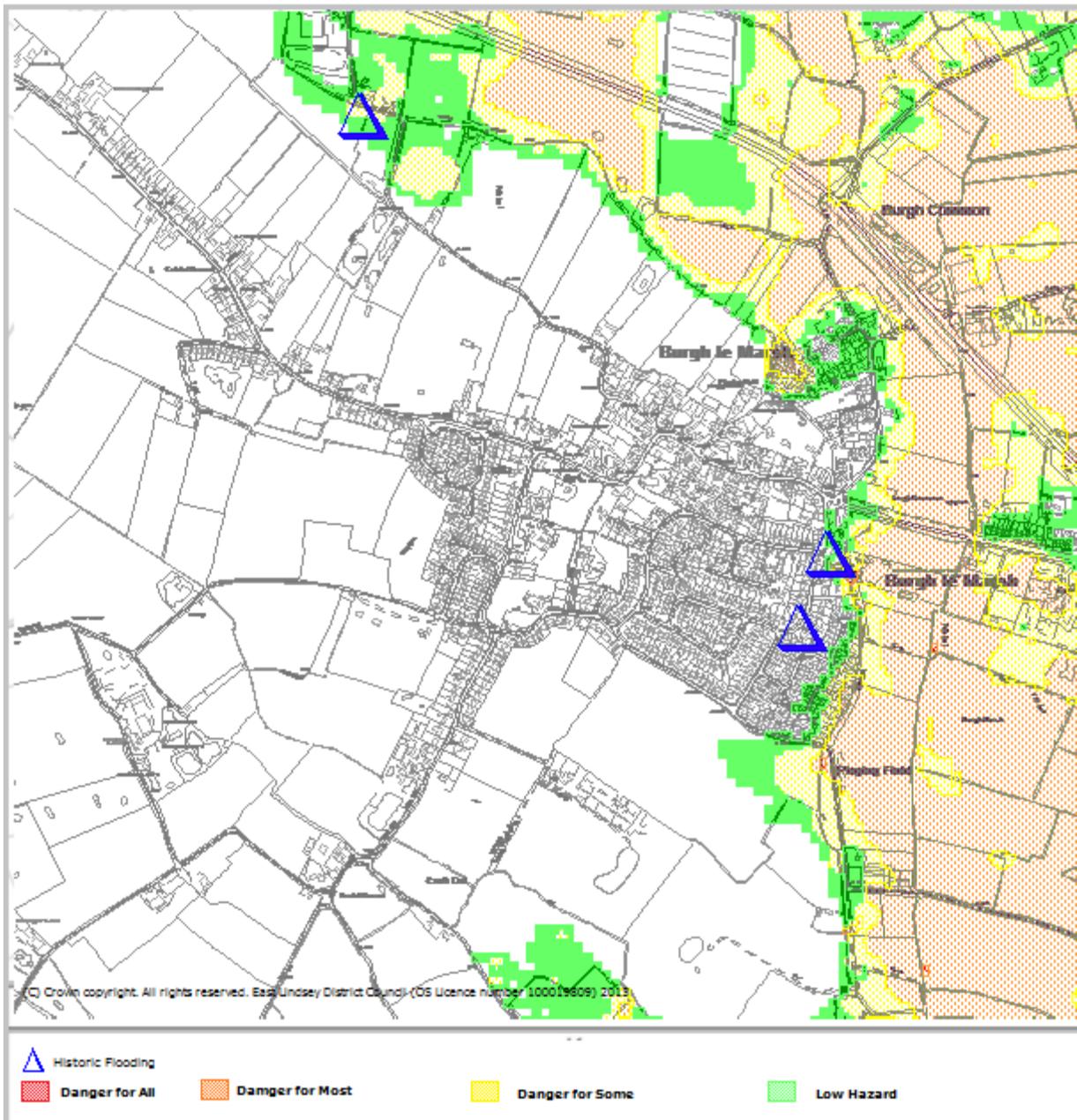
The Flood Zone Maps show that the area at risk of flooding in Binbrook is limited to a small area of the village and there is no record of historical events in the area. The Council's SFRA (2005) indicates that notwithstanding this, detailed FRA will be required to investigate surface water issues. There are no access /egress issues identified for the village.

## BURGH LE MARSH

As the map indicates Burgh le Marsh lies at the limit of the Flood Hazard Areas and properties at the eastern edge of the village are within the areas identified as being of 'Danger for Some' and where there is a 'Low Hazard'.

There is some evidence of localised historic flooding to the east of the village away from any potential growth areas. However, the SFRA (2005) indicate the need to investigate the potential of localised flooding arising from the network of smaller drains, and local issues in the area have also been identified by the Lindsey Marsh IDB. As a consequence, surface water disposal will need to be considered as part of any development proposals.

Access to the village is provided to the west via the old A158.



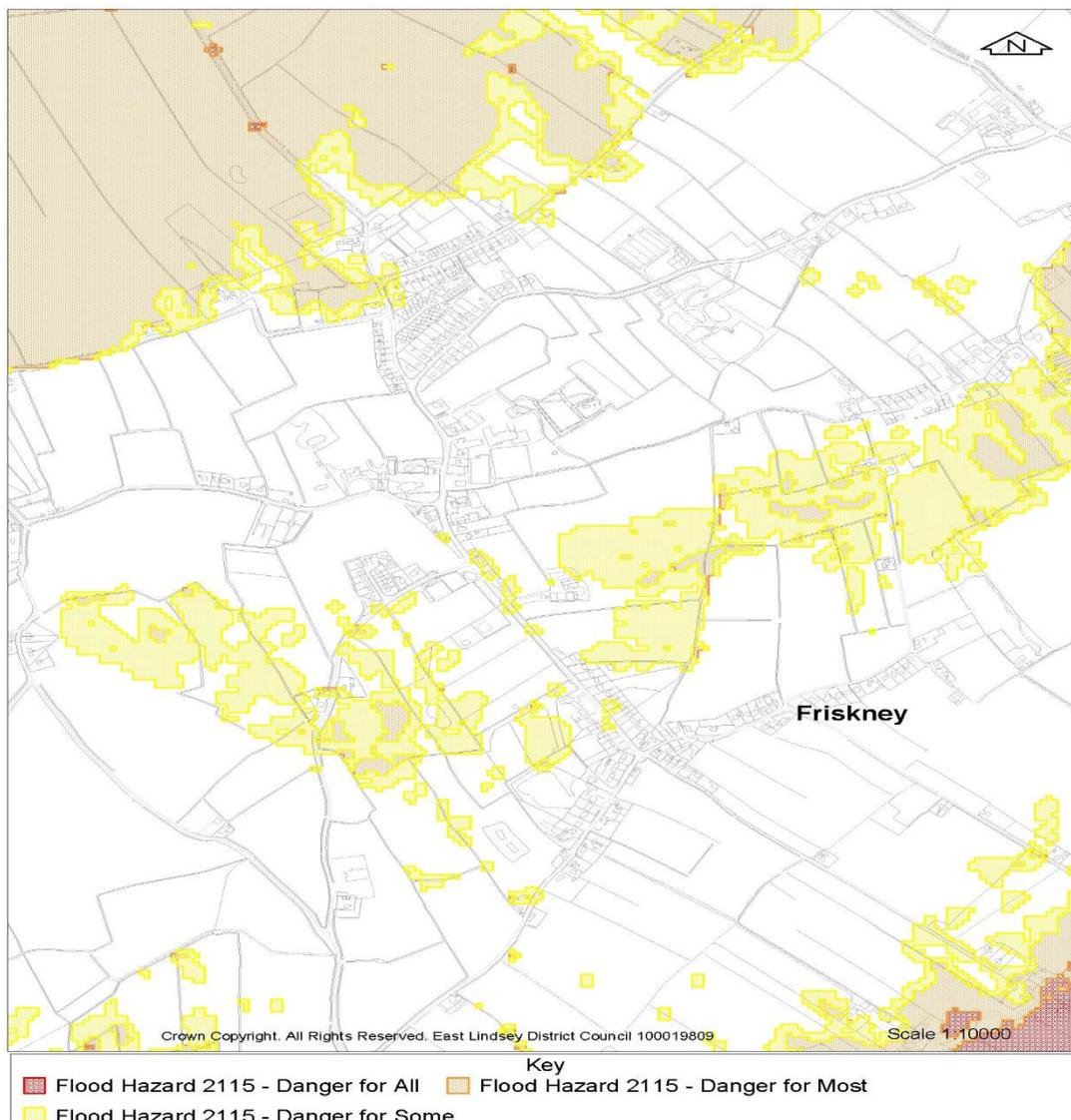
## FRISKNEY

Friskney lies on the edge of, and surrounded by the Flood Hazard zone. The bulk of development in the village is outside the area identified as being at risk in the event of a breach in the sea defences.

The EA's Flood Zone map indicates that parts of the village are within flood zone 2 and is potentially at risk of flooding from a fluvial/ tidal event, but does not specify which the likely source is.

Accordingly, the capacity of Friskney to accommodate further development will require further assessment on a site by site basis which is beyond the scope of this study.

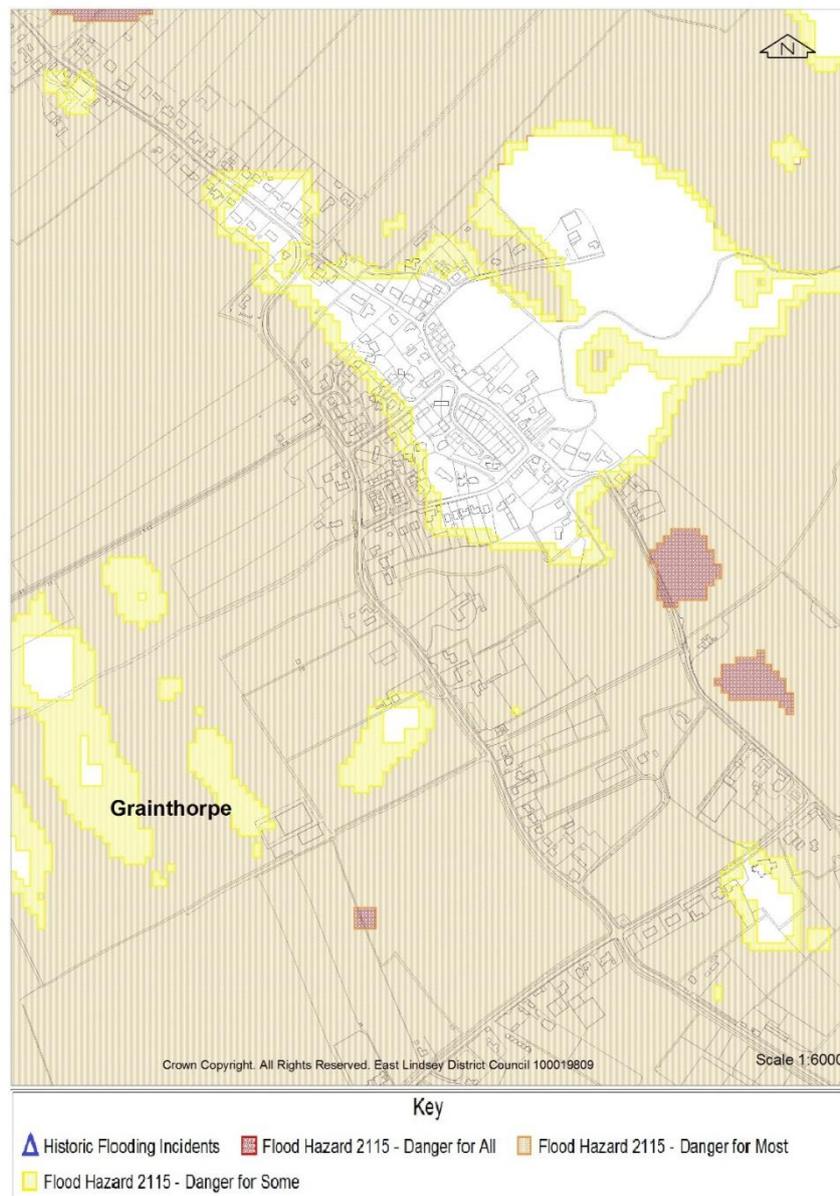
Some properties in Friskney have experienced internal flooding due to surface water run-off following extreme events (Witham 4<sup>th</sup> IDB).



## GRAINTHORPE

As can be seen the threat of flooding (from the coast) is severe at Grainthorpe and will severely impact on the capacity of the village to accommodate additional development without endangering life or property. In addition to the risk of flooding it is clear that a severe event would also compromise access to and from the village.

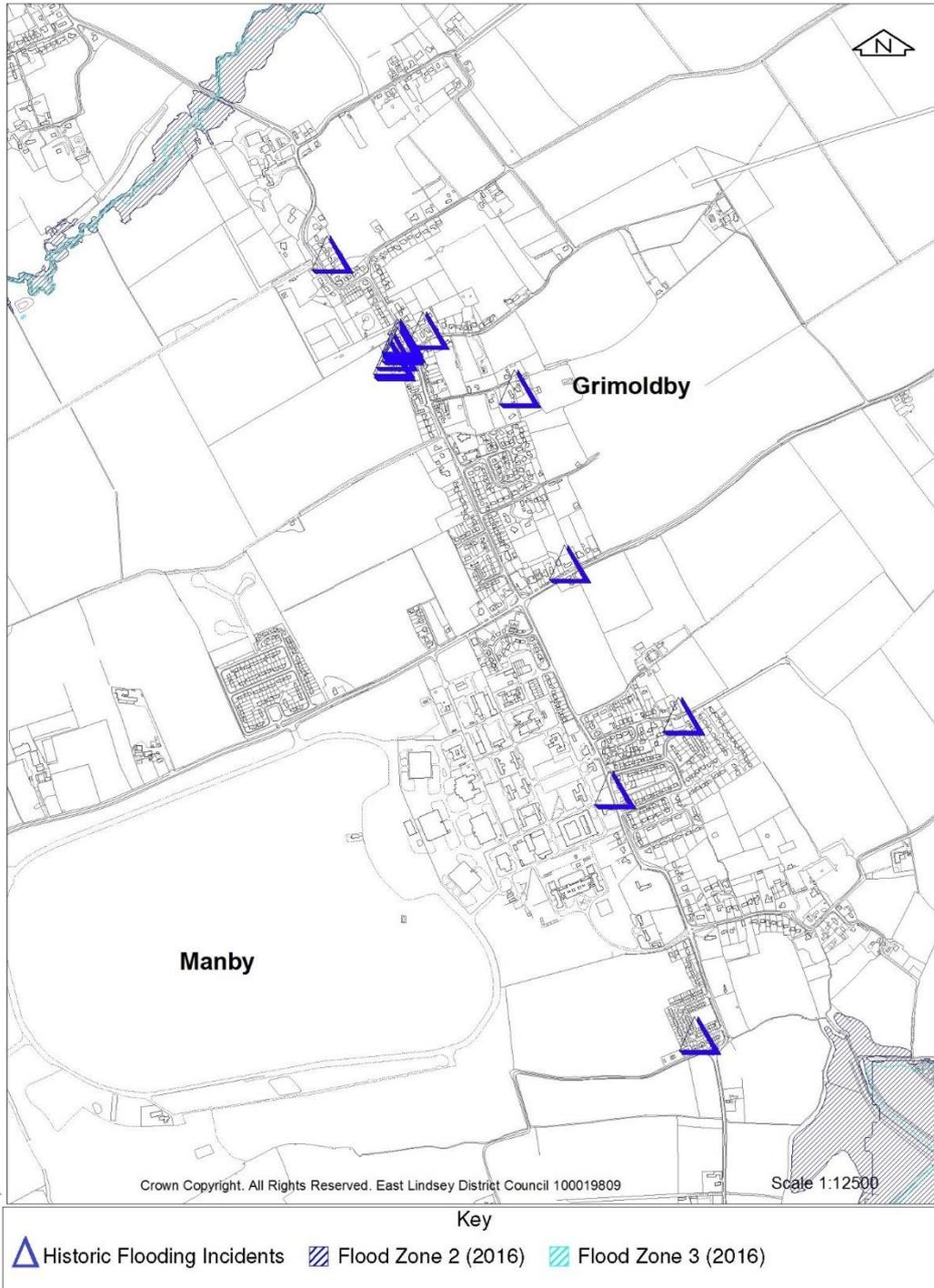
In 2013 the Lindsey Marsh Drainage Board undertook a Flood Alleviation Scheme in response to the flooding which occurred to properties in 2007. The scheme involved channel widening to accommodate increased flows. This reduced the likelihood of flooding for twenty properties and for nine properties has reduced the risk of flooding from a 1 in 20 year event to a 1 in 200 year event, therefore also providing a general improvement in flood protection for the village.



## GRIMOLDBY & MANBY

There is no identified risk of fluvial or tidal flooding in the defined areas of Grimoldby and Manby.

However as the map shows there is historical evidence of flooding from other sources associated with the floods of 2007 and the Lindsey Marsh IDB has identified drainage issues locally. Accordingly, there remains a need for any future development to be accompanied by an FRA, which assesses the potential for flooding from other sources.

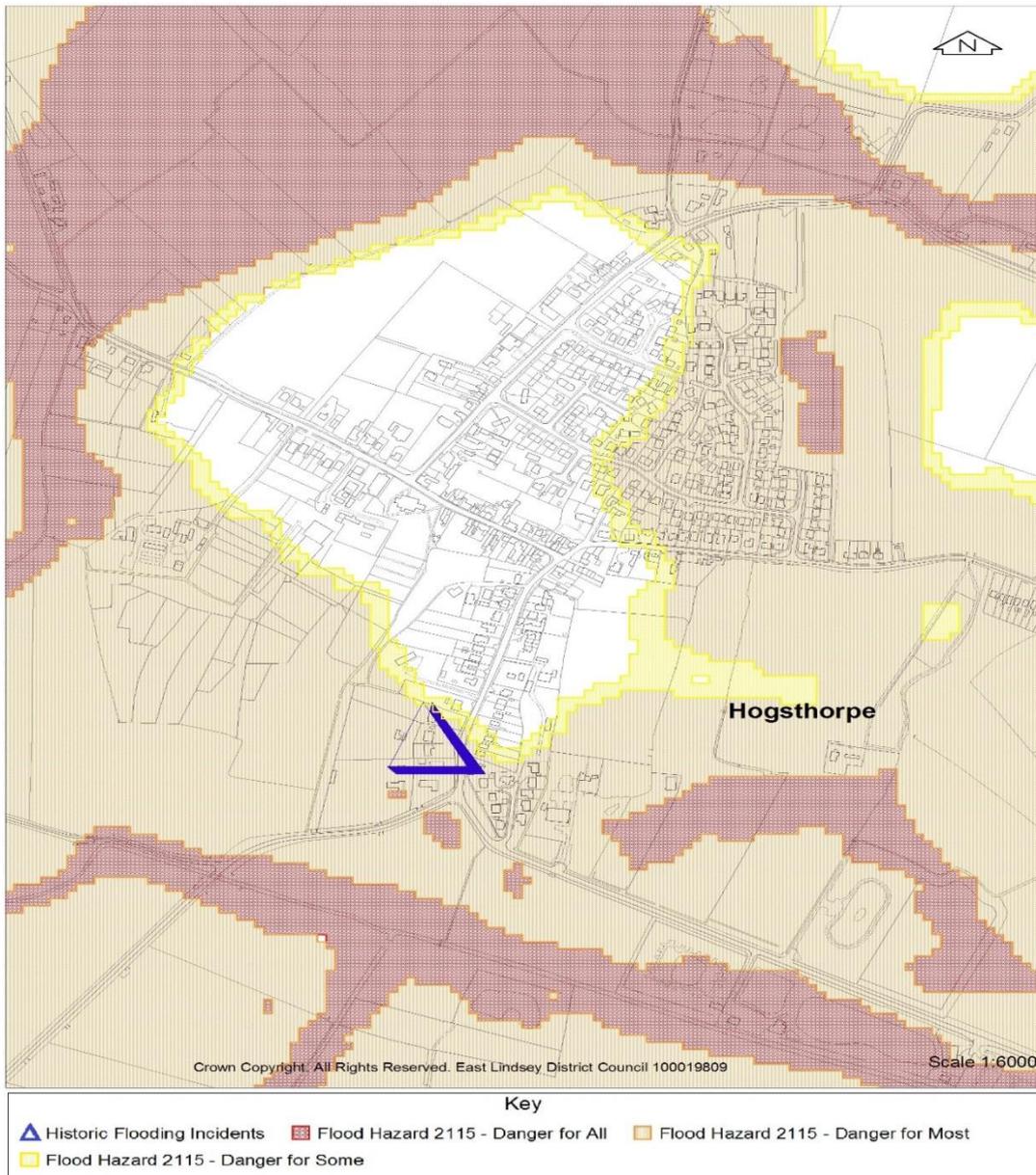


## HOGSTHORPE

Most of Hogsthorpe is at risk from flooding as a consequence of tidal inundation. Part of the village stands on higher ground and there may be some potential for development provided other requirements are met.

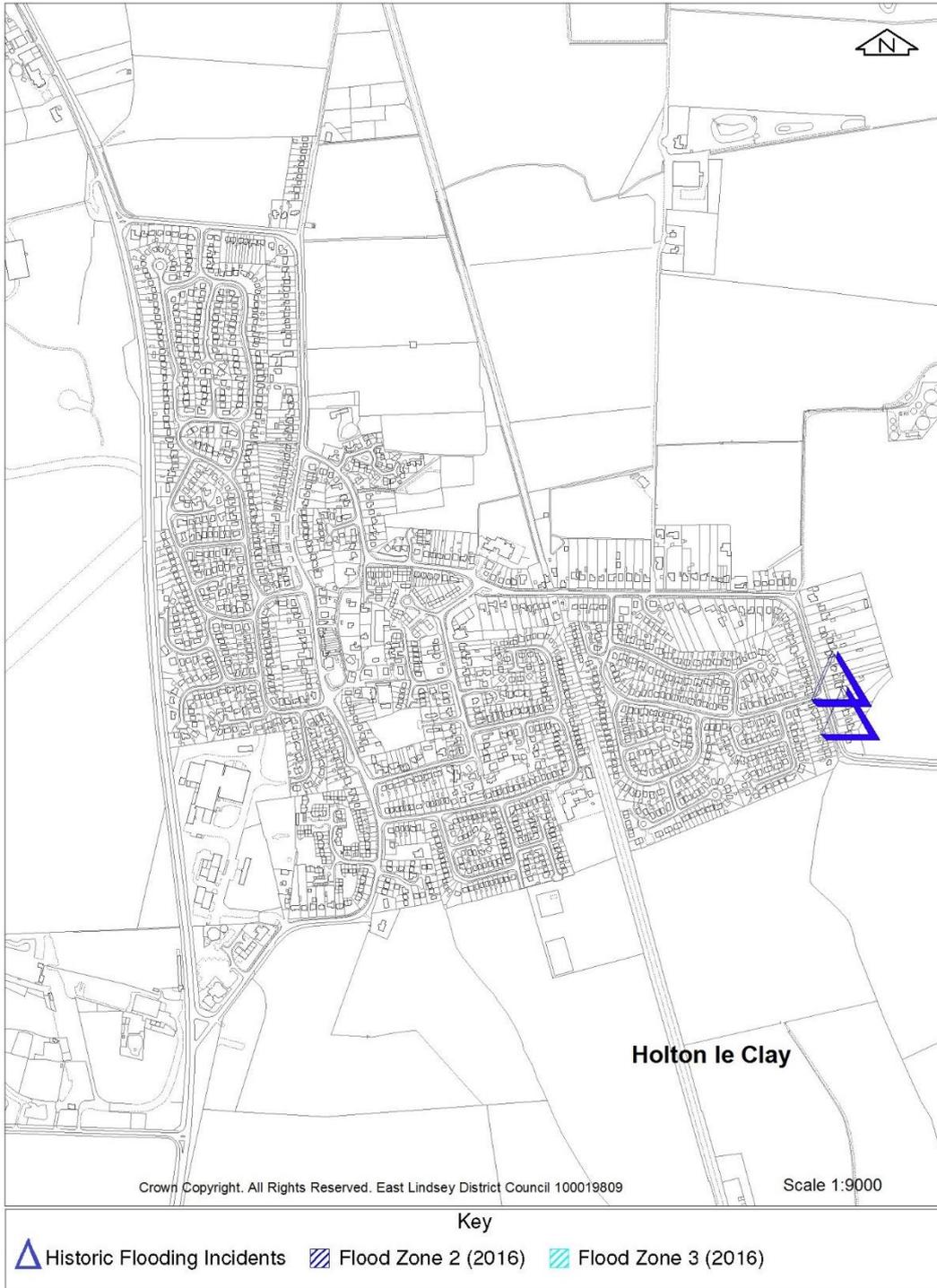
There is some evidence of flooding from other sources recorded to the south of the village and the IDB is aware of drainage issues in the area.

In the event of severe flooding there is a possibility that access to Hogsthorpe will be affected.



## HOLTON LE CLAY

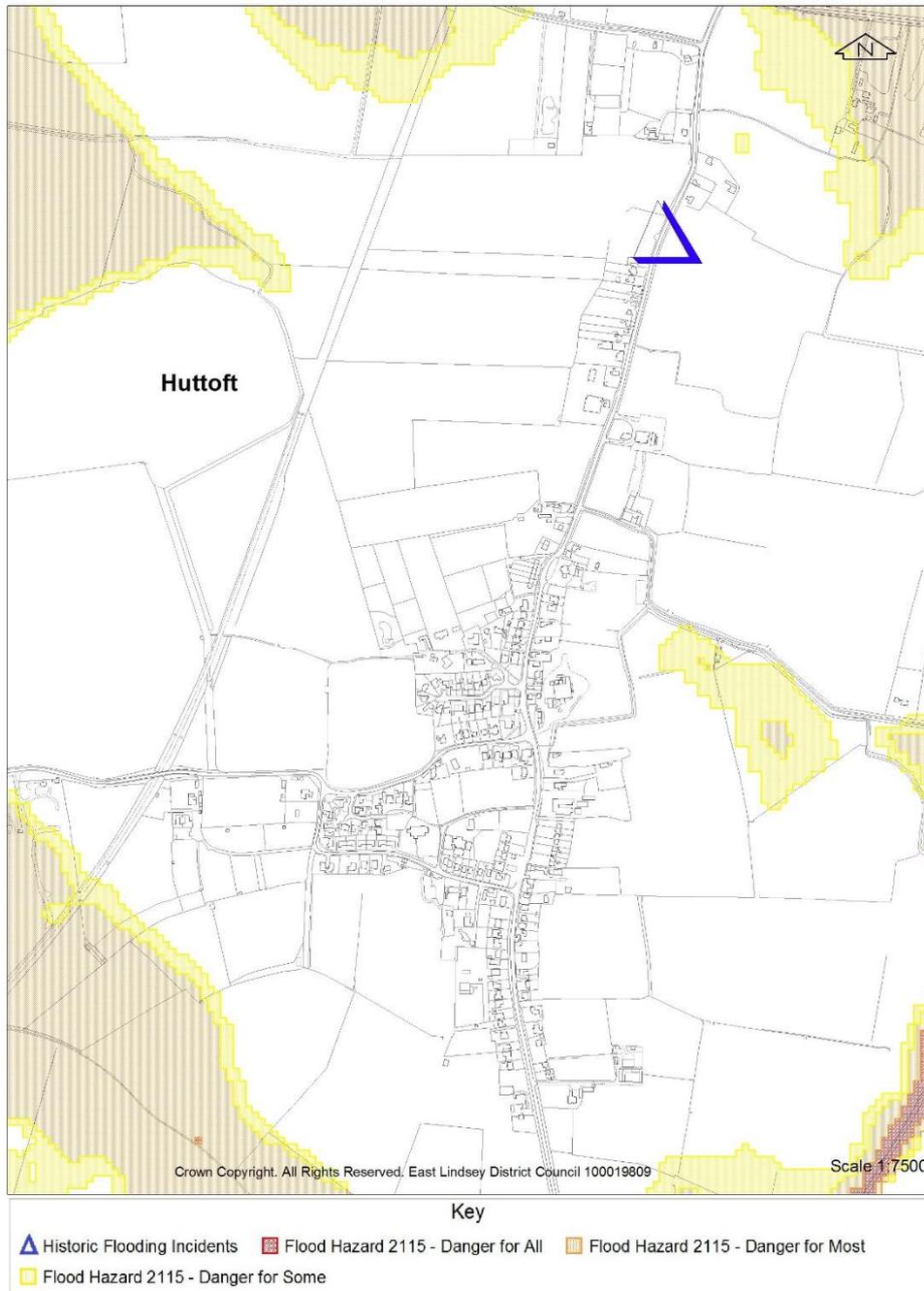
As the map indicates there is no modelled risk of fluvial flood at Holton le Clay and only limited evidence of flooding from other sources. However, the Lindsey Marsh IDB is aware of drainage issues in the area and individual developments will require FRA's to assess the potential for surface water flooding and the impact of additional development on existing drainage systems.



## HUTTOFT

Although Huttoft lies close to the coast much of the village stands on elevated land and consequently, the risk of flooding from a tidal event is limited to only a small part of the village.

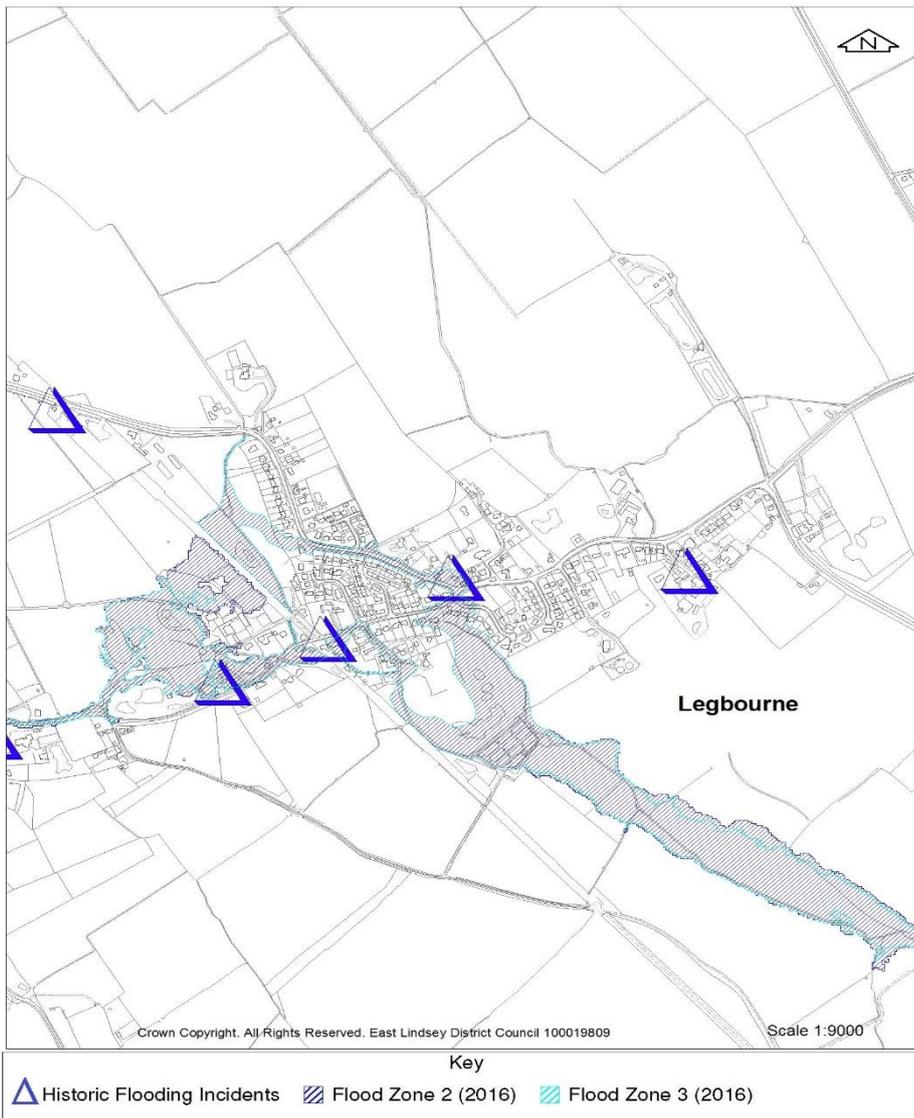
The only incidence of flooding from other sources (recorded in 2007) occurred to the north of, and away from the core of the village.



## LEGBOURNE

Legbourne lies at the headwaters of the Long Eau, a non-main river at this point which forms part of the Saltfleet Haven watercourse in its lower reaches. Flood risk in the village is likely to arise as a consequence of flooding from the drains which comprise the headwaters (SFRA 2005).

Flooding from other sources has occurred in the past at various locations in the village, indicating that more localised land drainage and surface water issues may exist and will need further examination as part of any development proposals.



## MAREHAM LE FEN

The threat of fluvial flooding at Mareham le Fen is limited to a small area alongside Fen Lane beyond the southern limits of the village, where it is unlikely to influence future development.

The IDB have concerns that parts of the village are not well supported in respect to provision of surface water runoff discharge opportunities and questions whether the security of outfall for new development; adding that much of the area relies on old, privately owned infrastructure, creating increased risk to both new and old properties.

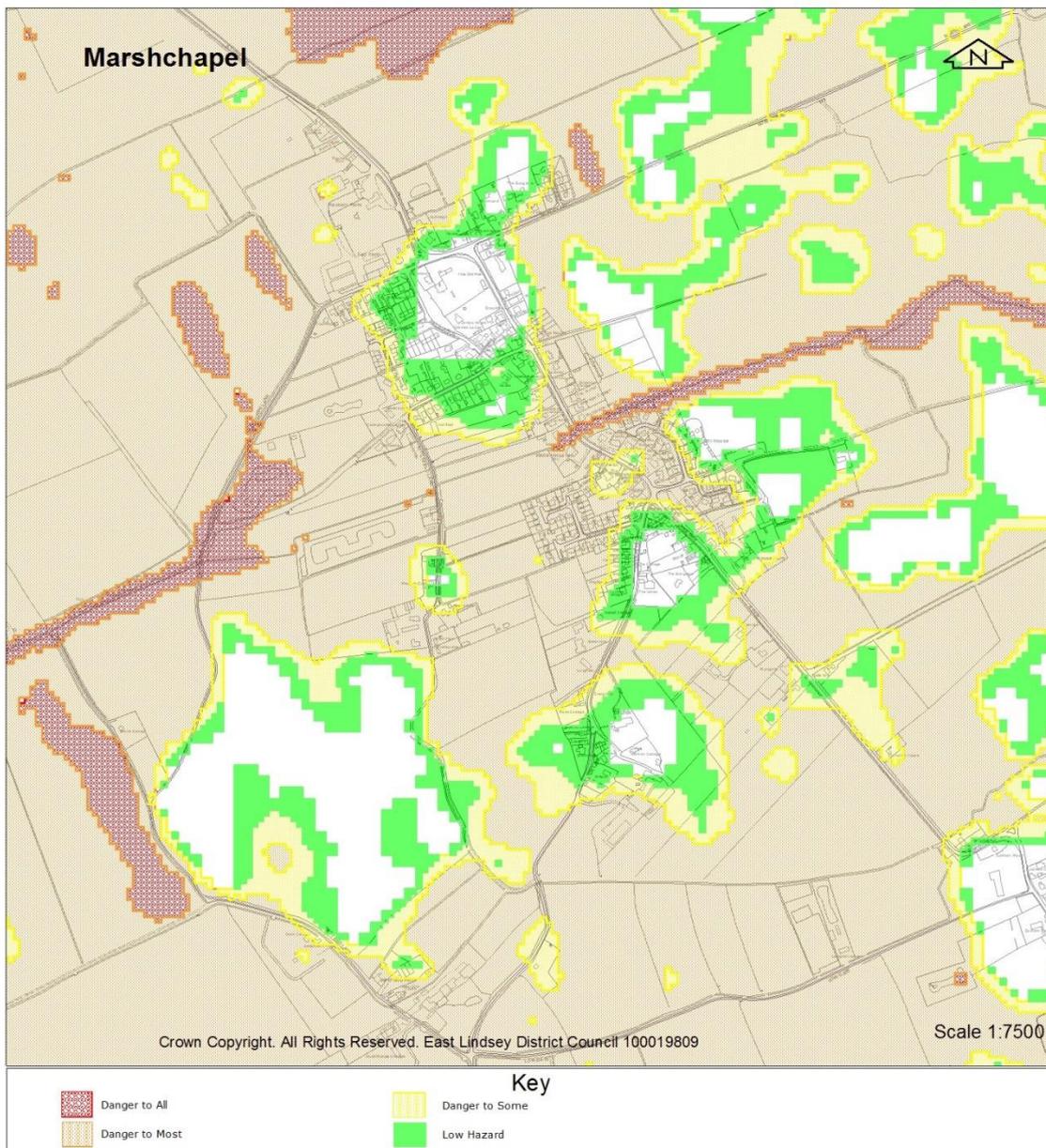
There is no record of recent flooding from other sources in Mareham.



## MARSHCHAPEL

Marshchapel lies about 3.5Km from the coast and the bulk of the parish lies within area categorised as 'Danger for Most' by the Flood Hazard Maps. As a consequence very few areas have the potential for residential development. In addition, the Lindsey Marsh IDB has identified a potential requirement for new development schemes to include drainage improvements.

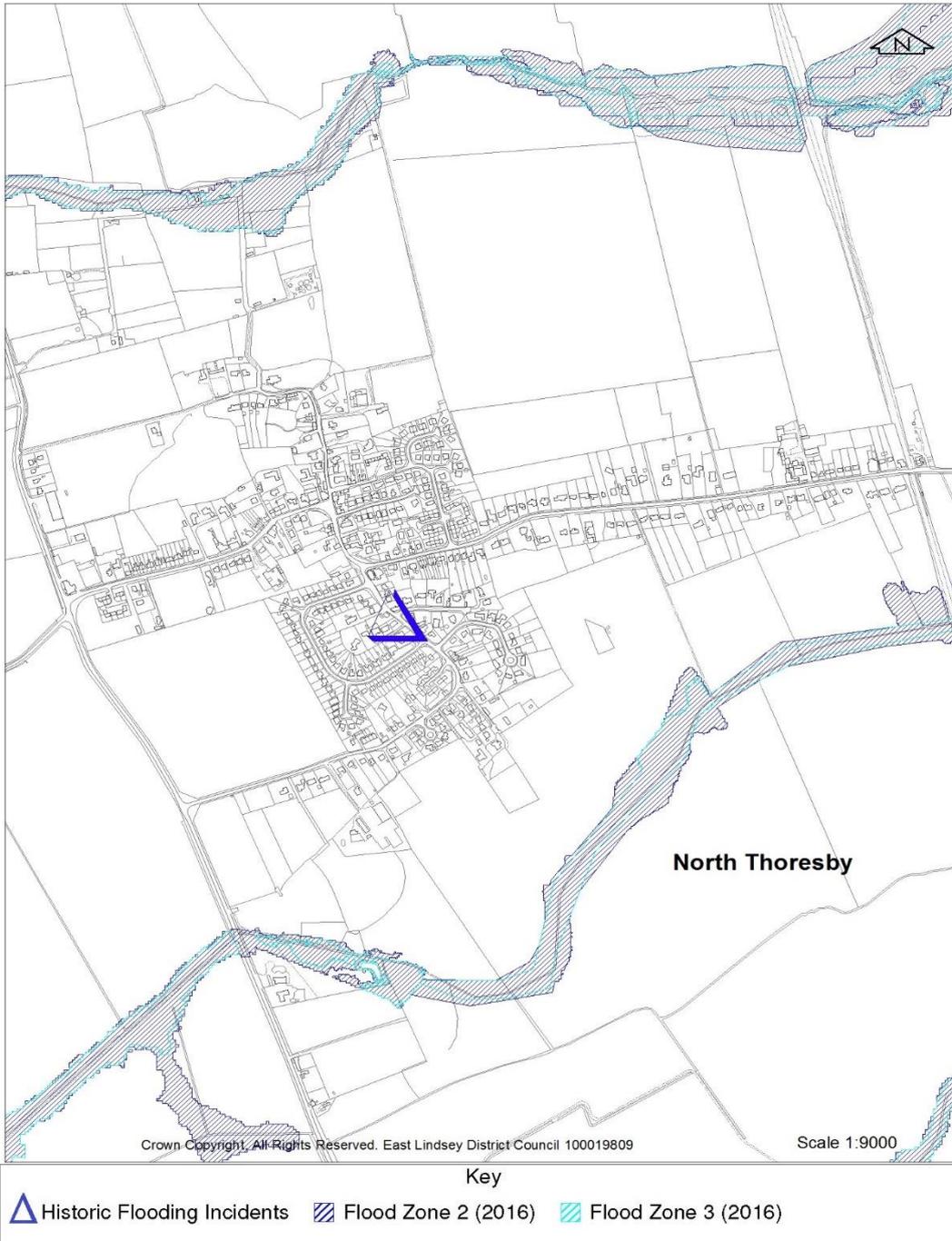
Parts of the village also lie on the edge of the Covenham Reservoir floodplain and, whilst the probability of breaching is considered low, due consideration should be given to that risk.



## NORTH THORESBY

North Thoresby lies between the Old Fleet Drain (north) and Black Leg Drain (south). The drains rise to the east of the village but both are some distance from its core and there is no identified risk of fluvial flooding from them.

Only a single incident of flooding from other sources has been recorded in recent years.

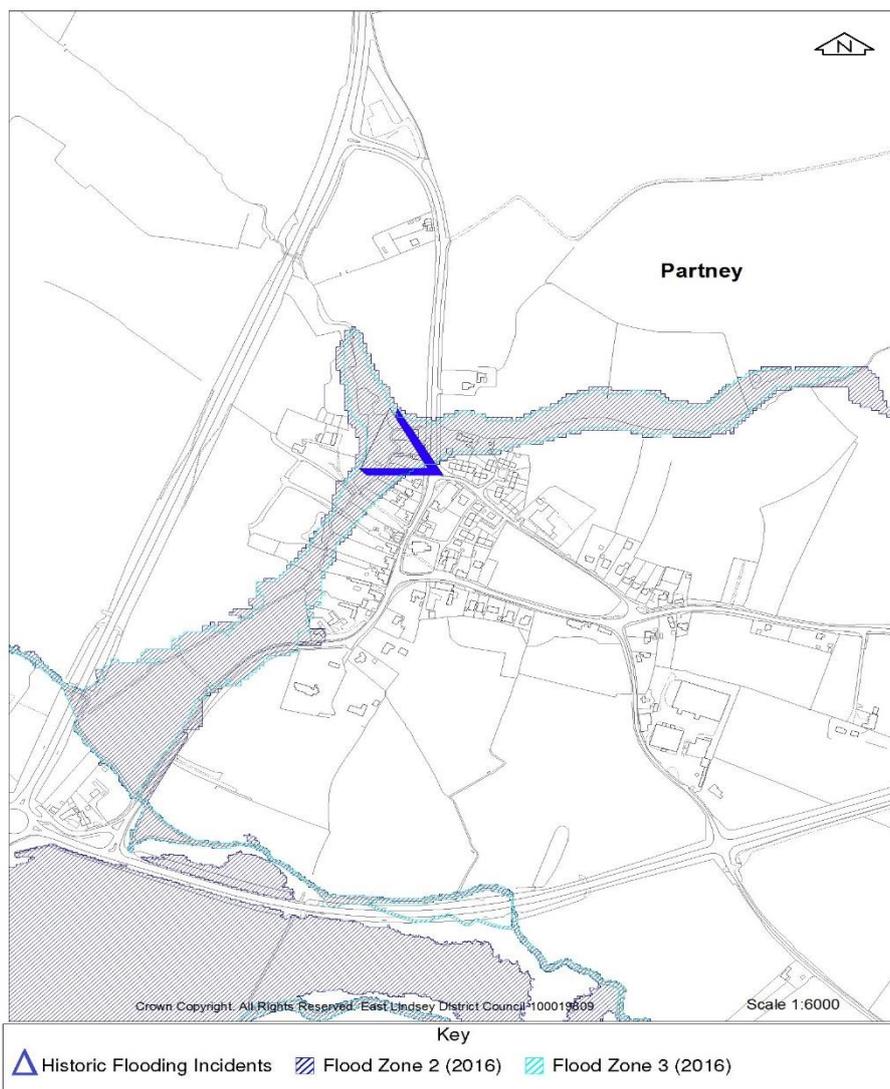


## PARTNEY

The main risk of flooding in Partney comes from the small drain that flows east to west across the north of the village and then, on the west of the village it runs southwards before feeding into the River Lymn. Any development should be located outside of the flood zone.

There is some evidence of flooding from other sources where the drain crosses the old main road and individual proposals will need to investigate potential risk.

It is anticipated that access to the village will not be constrained in the event of flooding.



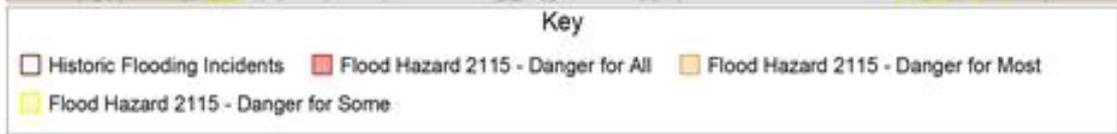
## SIBSEY

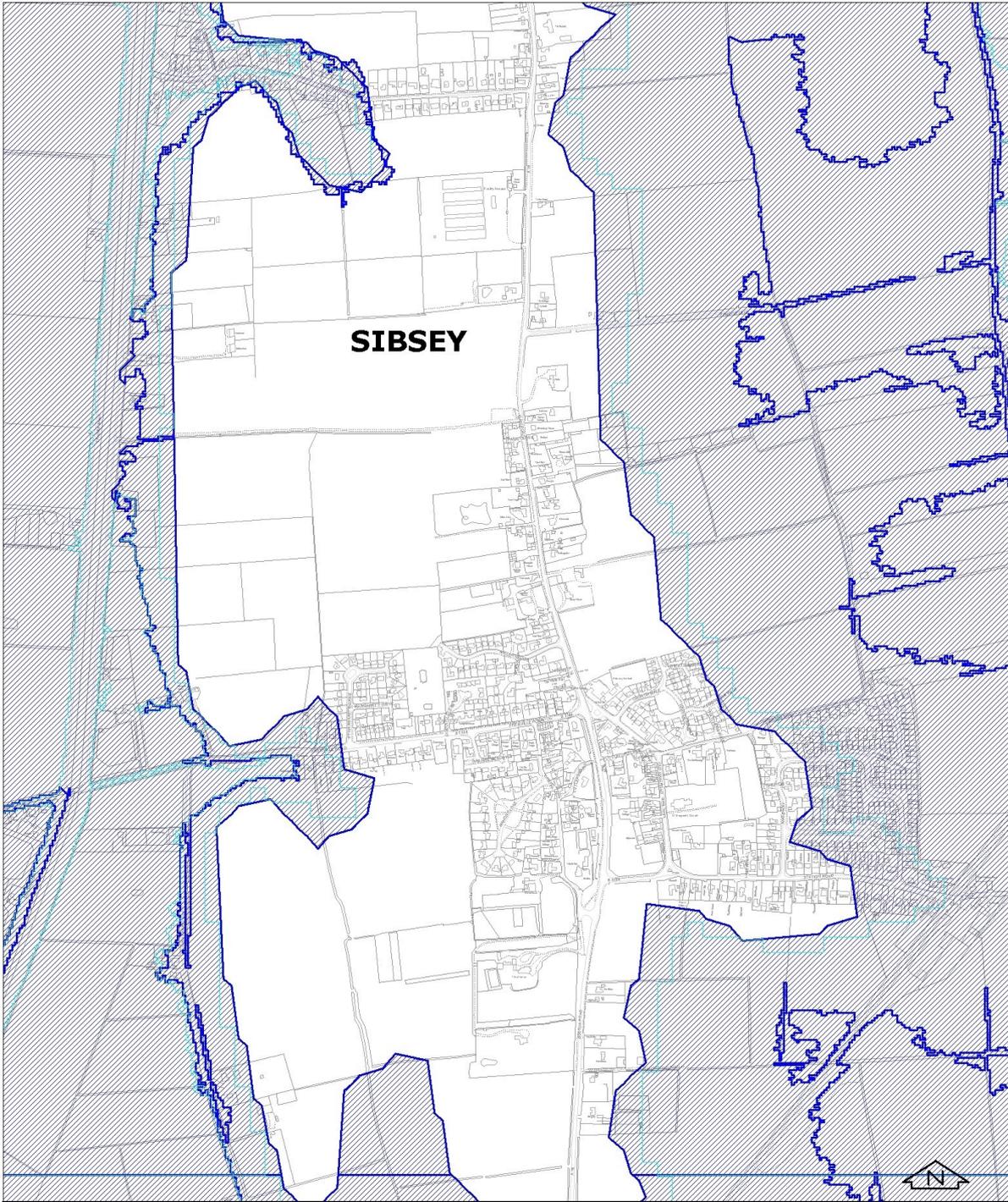
Sibsey lies between the Hobhole (east) and Stonebridge (west) main drains that are key parts of the network serving the Fens. The village is outside the area at risk of flooding from these watercourses and fluvial flooding is not perceived as an issue for its future development.

The 2005 SFRA identified the potential for flooding in the event of breaching of the Catchwater and Stonebridge Drains where they join at a point to the north of the village. It concludes that, because the embankments are low breaching is unlikely and that taking into account the effect of climate change (50 years), peak water levels are below the levels of the surrounding ground.

There are numerous smaller sewers (drains) locally that criss-cross the area and, the 2005 SFRA records works have been carried out to the north of the village centre to provide an 'urban' standard of protection against flooding from the local drainage network. That study also establishes the need for groundwater and local drainage issues to be addressed as part of site specific FRA's, and concerns have also been raised by the IDB in respect of surface water and groundwater problems at some sites in the village.

Sibsey is about 6 miles from the coast and lies just beyond the limit of areas deemed to be at risk of flooding in the event of tidal flooding. There is no record of recent flooding from other sources.





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Scale 1:10000

- Key
- ▨ Flood Zone 2
  - ▨ Flood Zone 3
  - ▲ Historic Flooding Incidents

## STICKNEY

The primary risk of flooding at Stickney comes from the East Fen and West Fen Catchwater Drains that run north to south on either side of the village. However, a significant area in the core of the village, between the drains is not at risk and has the potential to meet future development need although it will constrain linear growth along Hall and Horbling Lanes.

There is no evidence of significant flooding from other sources in the village, however because there is a network of drains serving the village independent FRA's will be required to assess groundwater and local drainage issues.

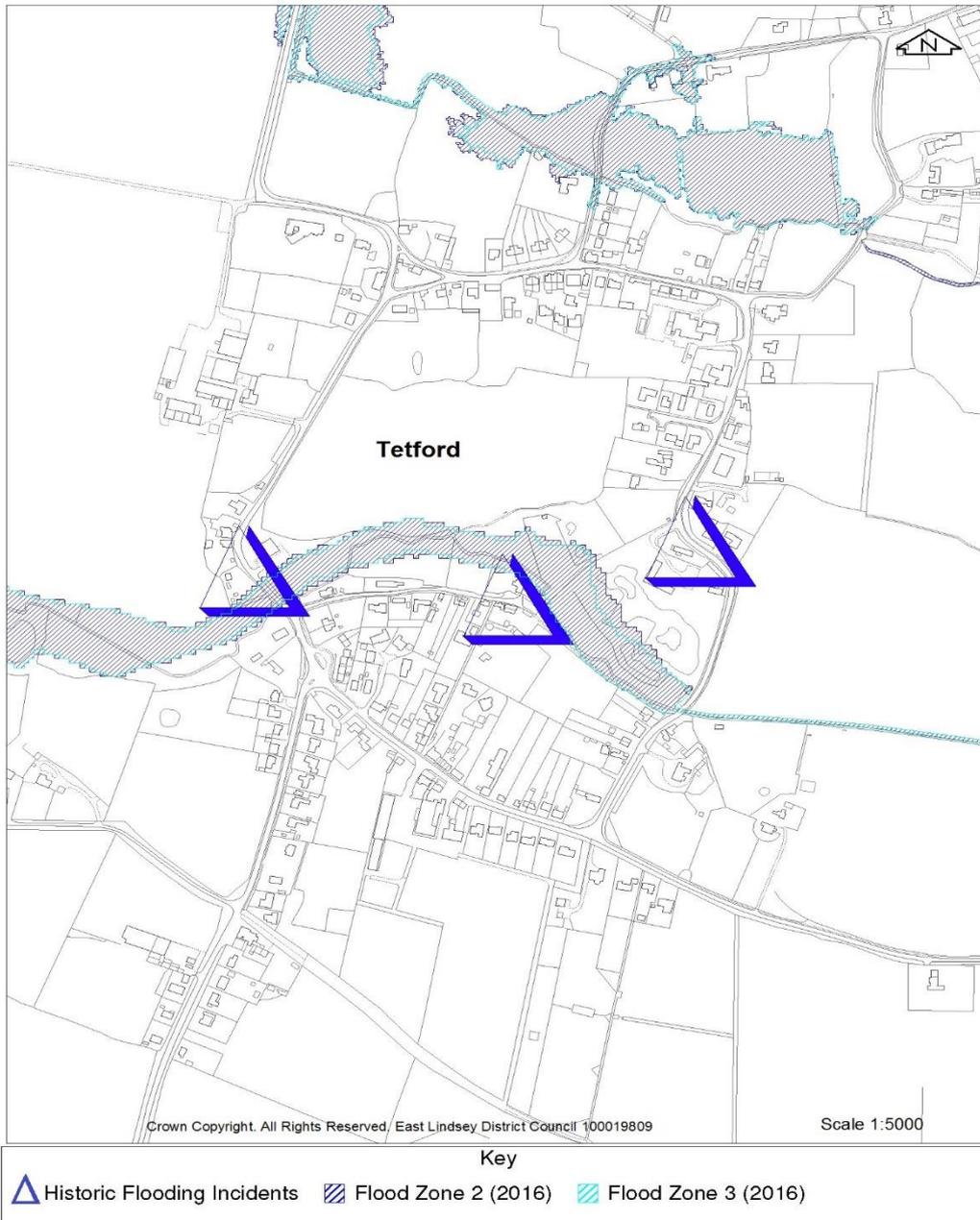


## TETFORD

Tetford is located in the Wolds and the River Lymn, which has its source nearby, flows through the village alongside Mill Lane. The Lymn is identified as a main river downstream from the village but the area at risk from flooding in the village is minimal.

There is also a small risk of flooding arising from the Rain Beck which runs west to east across the northern edge of the village.

Some flooding from other sources has been recorded around Mill Lane (see map).



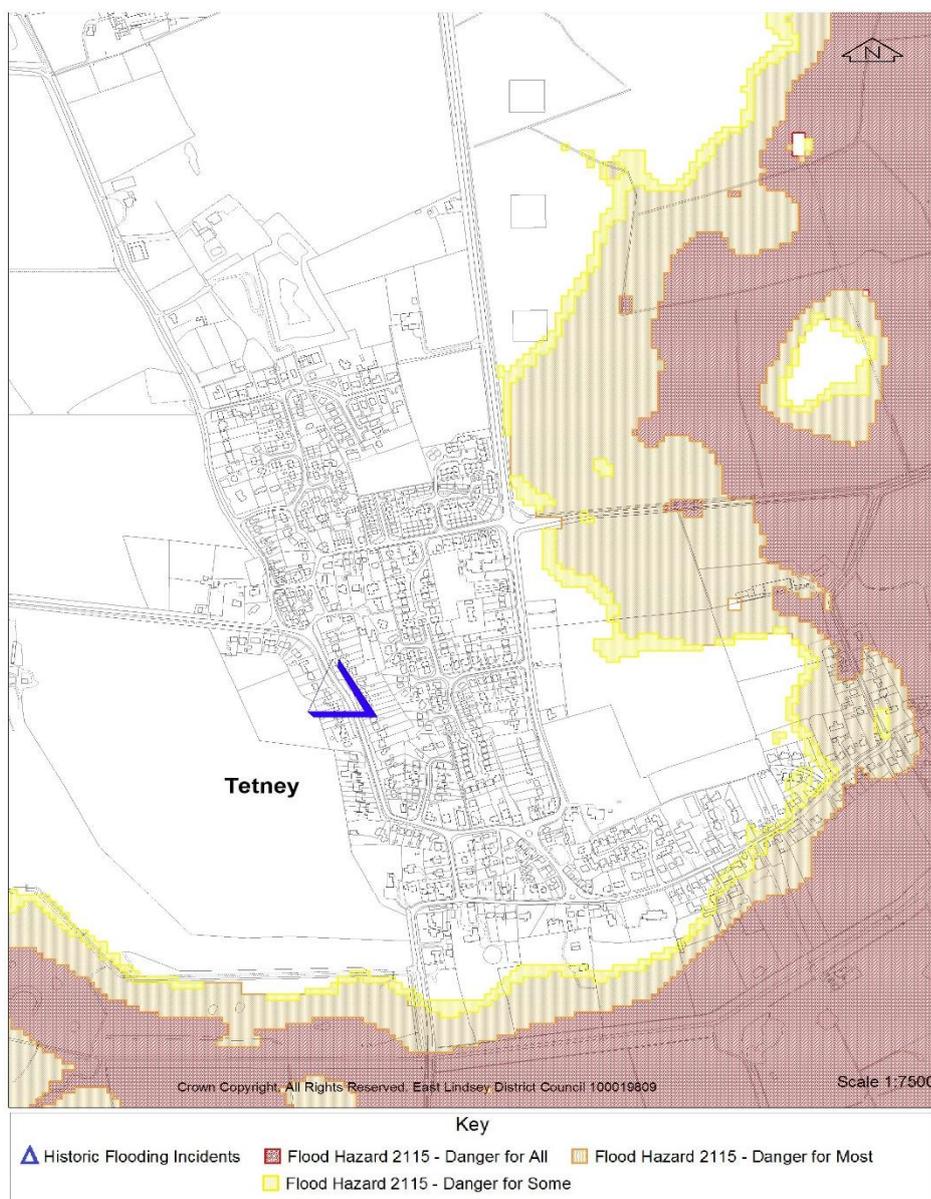
## TETNEY

Tetney is less than 4 miles from the coast and, although the northern section of the coast is accreting, there is the potential for any flooding from the coast to affect the eastern edges of the village.

The Tetney Drain runs to the south of the village and is one of the principle drainage channels between the Wolds and the sea. There is a risk of some flooding to properties south of Church Lane from the drain.

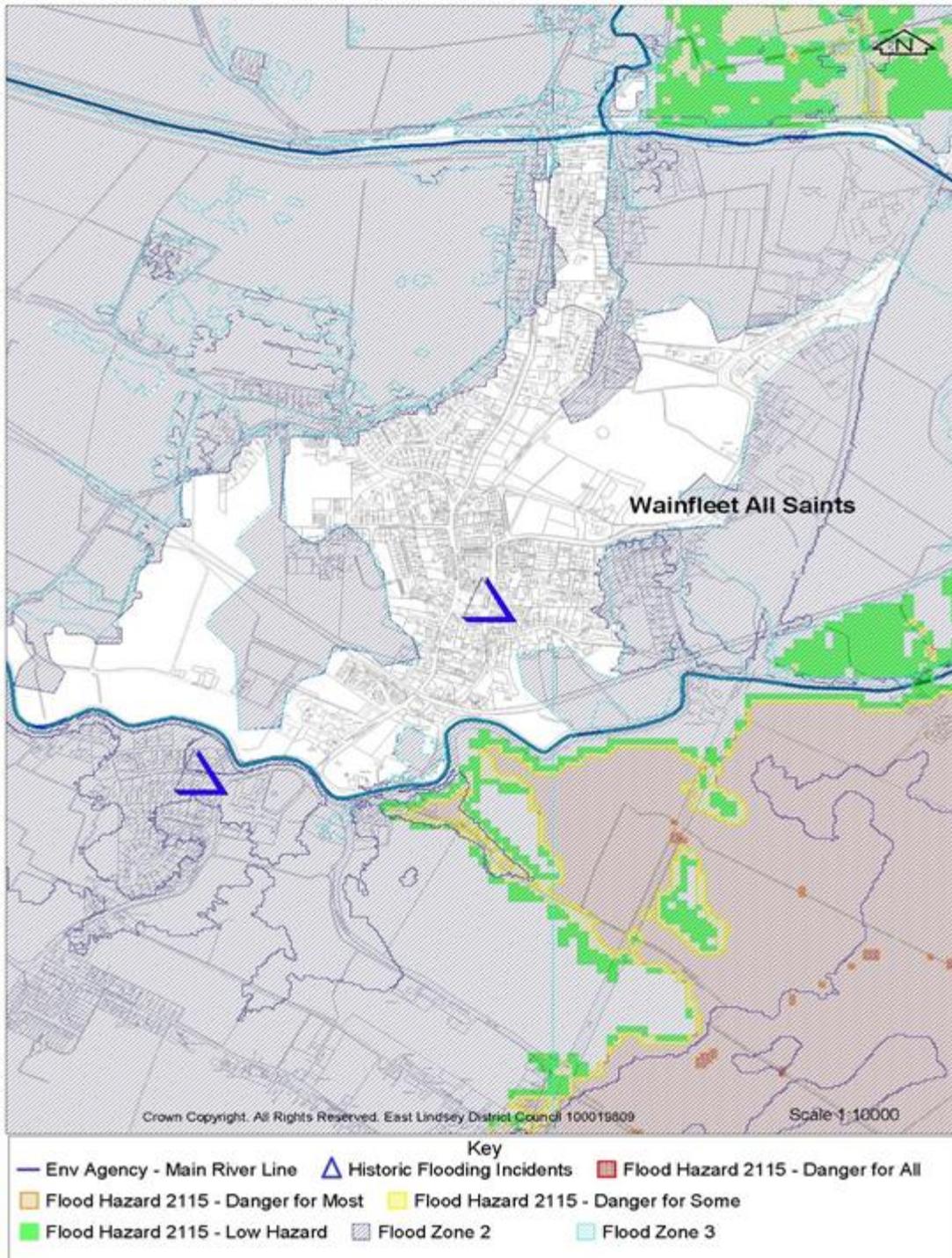
To the west of Tetney the risk of fluvial flooding is low and future development should be guided to this part.

Only one historic incident of flooding from other sources has been identified however, the Lindsey Marsh IDB advice is that drainage improvements may be required to facilitate developments.



## WAINFLEET ALL SAINTS

Wainfleet All Saints lies between the River Steeping and the Wainfleet Relief Channel and about 4 ½ miles from the sea and the likely extent of flooding from both sources is shown below. The Environment Agency's Hazard Maps show that Wainfleet is not at risk of coastal flooding. However, because of the proximity of the Steeping and Relief Channel (EA main rivers) fluvial flooding remains a threat to the village and, drainage improvements may be required to facilitate future development. Recent work re-modelling the R. Steeping has been undertaken and will be included in this document once available.



## **WOODHALL SPA**

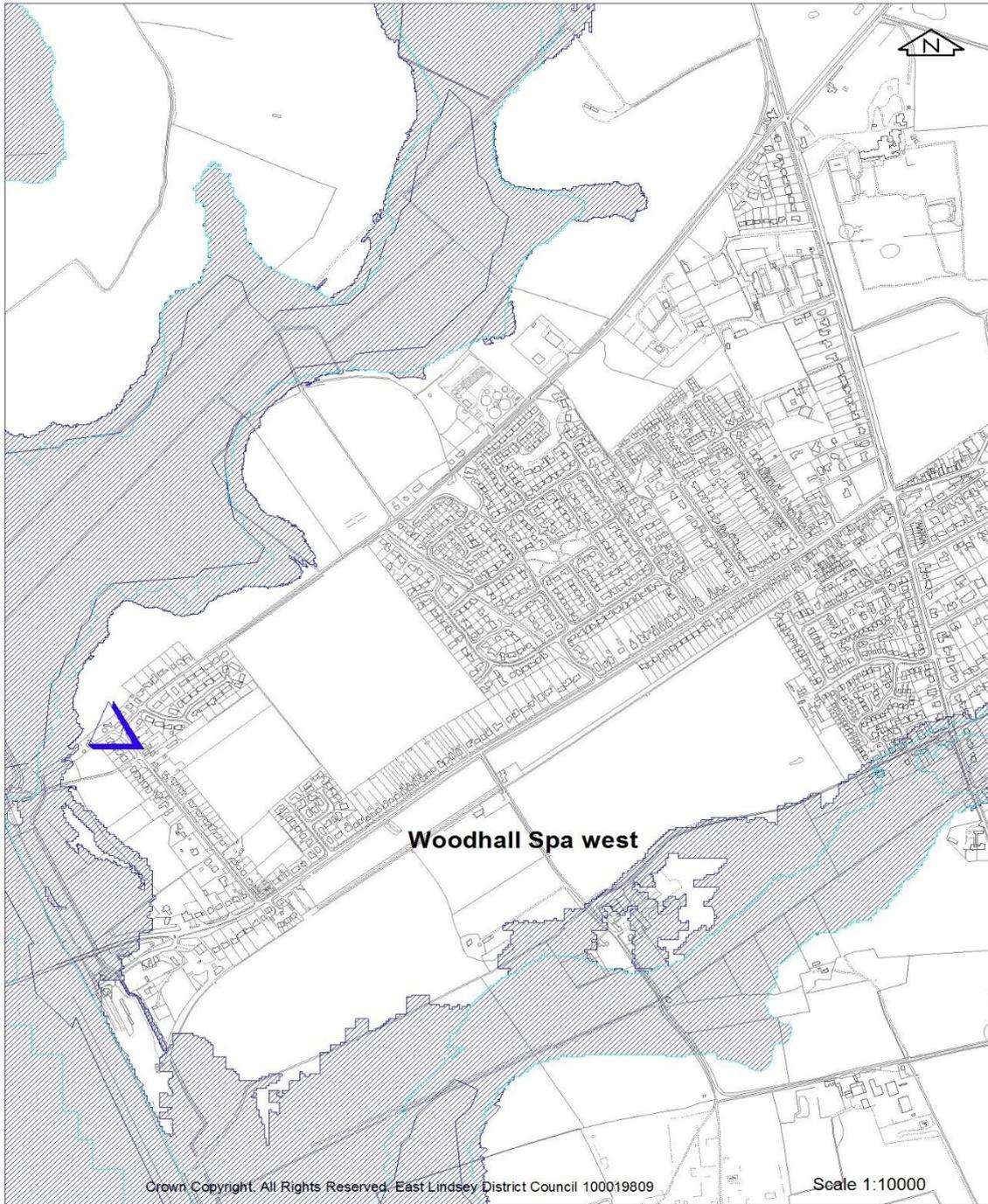
Flood risk in Woodhall Spa comes from the fluvial threat associated with the River Witham at the western edge of the village, but the land rises to the east and the bulk of the village is not at risk.

The flood zone maps show the main areas at risk lie alongside the Swine Syke drain and The Sewer which run either side of the settlement and drain into the Witham. Swine Syke lies to the north of Woodhall beyond Green Lane and poses no direct threat to development.

The 'Sewer' runs east to west close the southern edge of the town and poses a potential risk to properties alongside its route.

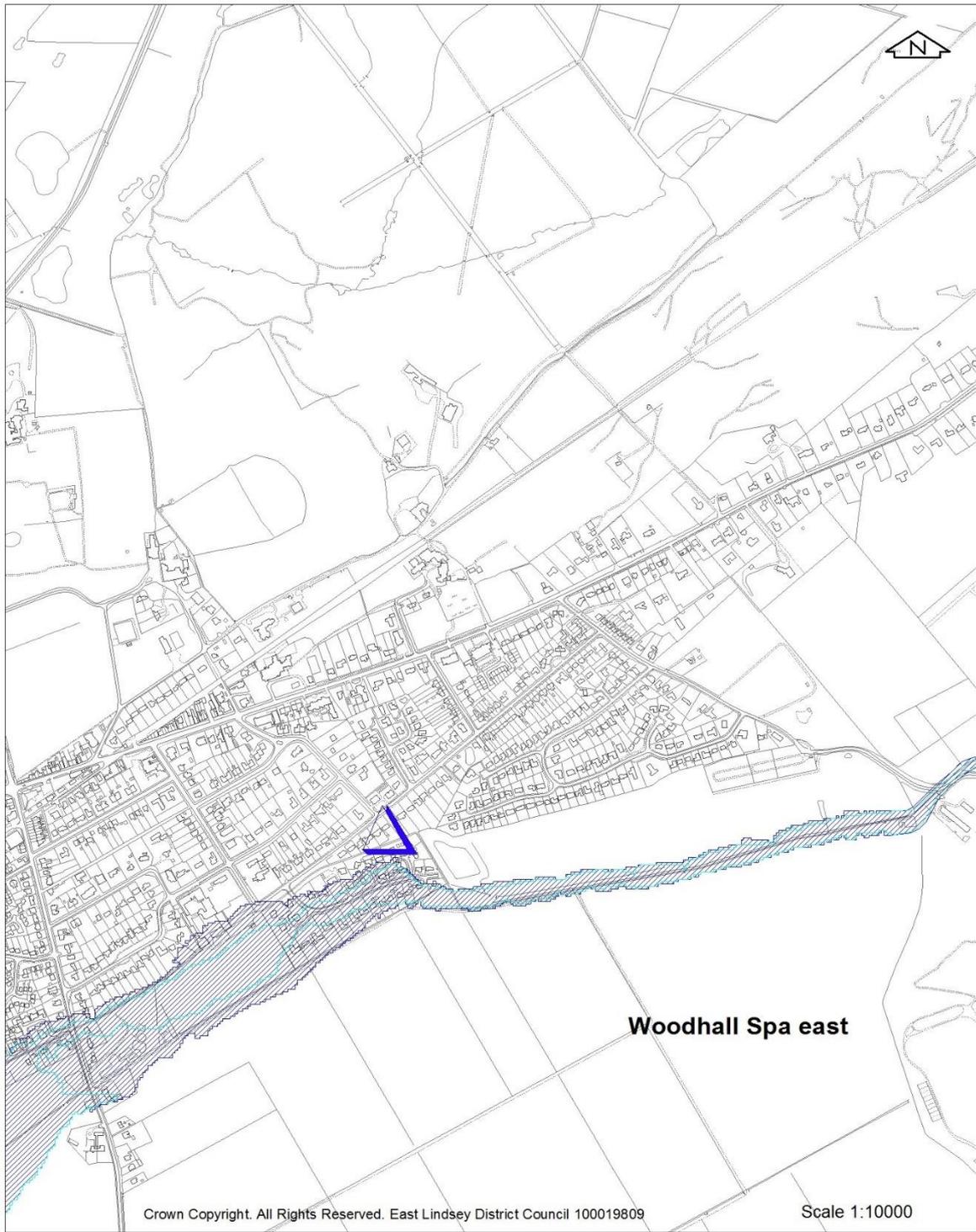
Significant, potential growth areas abut the village and in these areas FRA's will be required to assess the potential surface water issues arising from individual proposals.

There is limited evidence of flooding from other sources in Woodhall.



**Key**

Historic Flooding Incidents	Flood Zone 2 (2016)	Flood Zone 3 (2016)
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Scale 1:10000

Key

- △ Historic Flooding Incidents
- ▨ Flood Zone 2 (2016)
- ▨ Flood Zone 3 (2016)

## WRAGBY

As the map shows fluvial flooding is not identified as a potential risk for existing development in Wragby as the nearest waterway flows to the south east of the village. However, it may influence future development in that area.

There is some evidence from 2007 of surface water flooding on the Louth and Horncastle Roads and any development in these areas will need to assess local drainage capacity in more detail to avoid compounding any problems

