

CABINET

DATE	19 th August 2026
REPORT OF	Councillor Paul Batson – Portfolio Holder for Housing, Infrastructure and Transport
RESPONSIBLE OFFICER	Carolina Borgstrom – Director of Economy, Environment and Infrastructure
SUBJECT	North East Lincolnshire Local Flood Risk Management Strategy review
STATUS	Open
FORWARD PLAN REF NO.	CB 08/26/04

CONTRIBUTION TO OUR AIMS

The Local Flood Risk Management Strategy (LFRMS) will contribute to the strategic aim of the Council which is to create a stronger economy and stronger communities.

Managing and reducing flood risk is important in ensuring that businesses are attracted to invest in the area and can operate in a safe environment without damage or disruption and contribute to a strong local economy.

Working with partners to bolster resilience to flooding will contribute to stronger local communities. It will also reduce stress among those residents in flood risk areas, thereby contributing to improved mental health and wellbeing. This will be further enhanced by ensuring local people understand their risk of flooding, know their responsibilities and how to take action.

NELC will strive for sustainability in all aspects of flood risk management in order to help in achieving a carbon neutral future.

EXECUTIVE SUMMARY

The risk of flooding in North East Lincolnshire is expected to increase due to the predicted effects of climate change, alterations to rainfall patterns and an increase in flows in watercourses and drainage systems.

This Local Flood Risk Management Strategy (LFRMS) (2025) sets out how North East Lincolnshire Council (NELC) will address the management of local flood risk and undertake their flood risk management responsibilities as required under the Flood and Water Management Act 2010. This Strategy is an update of the existing LFRMS (2015). As part of this update, a full review of the existing Strategy has been undertaken so that it aligns with the latest guidance and legislation. It also reflects the three long-term ambitions that the Environment Agency's (EA's) National Flood and Coastal Erosion Risk Management (FCERM) Strategy for

England has:

- Climate Resilient Places: working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change.
- Today's growth and infrastructure resilient in tomorrow's climate: making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as infrastructure resilient to flooding and coastal change.
- A nation ready to respond and adapt to flooding and coastal change: ensuring local people understand their risk to flooding and coastal change and know their responsibilities and how to take action.

The strategy is based on the five-step process for developing a LFRMS underpinned by the concept of "Work with others" which are:

- Understand flood risk
- Set objectives
- Choose measures
- Implement
- Monitor and review

RECOMMENDATIONS

It is recommended that:

1. Cabinet approves and adopts the new Local Flood Risk Management Strategy that has been produced following a comprehensive review.
2. Cabinet delegates responsibility to the Director of Economy, Environment and Infrastructure in consultation with the Portfolio Holder for Housing, Infrastructure and Transport to implement the strategy, engage with stakeholders and monitor the delivery of the Strategy's Action Plan.

REASONS FOR DECISION

Under section 9 of the Flood and Water Management Act 2010, the Council, as the Lead Local Flood Authority, is required to develop, maintain, apply and monitor the LFRMS. The strategy needs to be approved and adopted to fulfil this requirement.

1. BACKGROUND AND ISSUES

- 1.1 The Flood and Water Management Act 2010 designates North East Lincolnshire Council as the Lead Local Flood Authority (LLFA) and also as a Risk Management Authority (RMA). This makes the Council responsible for co-ordinating the management of local flood risk, which covers flooding from surface water, groundwater and ordinary watercourses (those watercourses not designated as main rivers on the official maps held by the Environment Agency for which they will retain responsibility).

1.2 As the LLFA, our main responsibility comes from section 9 of the FWMA which requires the Council to develop, maintain, apply and monitor a strategy for local flood risk management. The strategy is based on the five-step process for developing a LFRMS underpinned by the concept of “Work with others” which are:

- Understand flood risk
- Set objectives
- Choose measures
- Implement
- Monitor and review

1.3 Also, it is legally required to contain the following information:

- The flood risk management authorities in the borough.
- The flood and coastal erosion risk management functions that may be exercised by these authorities.
- The objectives proposed for managing local flood risk.
- The measures proposed to achieve these objectives.
- How and when the measures are expected to be implemented.
- The benefits of those measures and how they are to be paid for.
- The assessment of local flood risk.
- How and when the strategy is to be reviewed.
- How the strategy contributes to the achievements of wider environmental objectives.

1.4 The LFRMS review was undertaken in consultation with the other risk management authorities that operate in the borough: Anglian Water, the Environment Agency, North East Lindsey Drainage Board and Lindsey Marsh Drainage Board.

1.5 The review was also informed by the issue of a questionnaire to the public, designed to gather information about local flood risk issues and residents’ views on local flood risk management. This was followed by a public consultation on the draft strategy document which took place for 6 weeks from early November 2024. Again, a questionnaire was issued to sit alongside the draft document with the questions designed to gather people’s thoughts and opinions on the strategy review.

1.6 Also, during the review, a workshop to agree strategy objectives was held with other flood risk management partners, i.e. Environment Agency, Anglian Water, and the Internal Drainage Boards along with the Portfolio Holder for Housing, Infrastructure and Transport.

1.7 As part of the review, the Strategy must align with the latest guidance and legislation. It also reflects the three long-term ambitions in the Environment Agency’s (EA’s) National Flood and Coastal Erosion Risk Management

(FCERM) Strategy for England:

- **Climate Resilient Places:** working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change.
- **Today's growth and infrastructure resilient in tomorrow's climate:** making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as infrastructure resilient to flooding and coastal change.
- **A nation ready to respond and adapt to flooding and coastal change:** ensuring local people understand their risk to flooding and coastal change and know their responsibilities and how to take action.

- 1.8 To assist with first of the long-term ambitions, NELC holds regular meetings with flood risk management partners at both the North East Lincolnshire Flood Risk Strategy Board and the North East Lincolnshire Local Flood Risk Management Group.
- 1.9 As the name suggests, the Flood Risk Strategy Board deal with the more strategic elements of flood risk management including potential new funding streams, capital programmes oversight, and providing a link to the borough's economic development aspirations.
- 1.10 The Local Flood Risk Management Group deals with the more operational flood risk matters, including ensuring that co-ordinated flood risk management guidance is provided to the Council's Planning service for planning applications. This coordination of flood risk advice is a significant contributor to the second long term ambition.
- 1.11 The Council also attends the Local Resilience Forum along with other risk management authorities; local councils, the EA, emergency services, health services, utility providers and transport organisations. It plans for a range of emergency situations, of which flooding is one. For flooding incident response, the Multi-Agency Flood Plan has been developed. This is a contributor to the third long term ambition.
- 1.12 To further contribute to the three long term ambitions the LFRMS has identified seven objectives. These are aligned with the long-term ambitions as follows:

Climate Resilience Places

1. We will increase our skills, capabilities and understanding of local flood risk through investigations and continually improving data.
2. We will work with development planning to seek opportunities to improve resilience through new and existing development, and to encourage environmental net gain.
3. We will strive for sustainability in all aspects of flood risk management in order to meet NELC's goals of cutting carbon emissions to net zero by 2050.

Today's growth and infrastructure resilient in tomorrow's climate

4. We will seek opportunities for innovation in flood risk management duties and schemes to adapt to a changing climate.

5. Plan and adapt to a changing climate through developing longer term adaptive approaches.

A nation ready to respond and adapt to flooding and coastal change:

6. We will build upon and improve existing resilience at a community level through increasing awareness and understanding of flood risk and working together to embed resilience in buildings and planning.

7. We will continue to review preparedness in responding to flood events and update accordingly through working with the Local Resilience Forum and communities so that communities and RMAs alike can better prepare and respond to flooding and coastal change.

- 1.13 Measures are strategic steps to be taken to address each objective above, and these are detailed in Appendix A of the LFRMS. Actions to help achieve the objectives and to address specific flood risk management issues in the identified hotspots, and across the borough, are detailed in Appendix B of the LFRMS, the Action Plan.
- 1.14 To guide the production of the LFRMS, a Strategic Environmental Assessment (SEA) and a Habitats Regulations Assessment (HRA) were also completed. Both of these were required to comply with UK law. They provide information on how the strategy might impact on the environment and European designated habitats sites, so that as it develops, the LFRMS could be amended to avoid negative impacts. Natural England has approved the HRA.

2. RISKS, OPPORTUNITIES AND EQUALITY ISSUES

- 2.1 NELC as a Lead Local Flood Authority has a statutory duty to produce a Local Flood Risk Management Strategy. There is also a duty to maintain, apply and monitor the strategy. Fortunately, the NELC Drainage and Coastal Defence team has an established reputation for managing local flood risk at the optimum level within the available funding constraints. The team have also established the appropriate links to the Environment Agency and Anglian Water for obtaining capital funding for flood risk management schemes. Therefore, there is a very low risk of NELC being seen as failing to deliver their statutory duties under the Flood and Water Management Act 2010.

Opportunities

- 2.2 NELC receive an annual revenue allocation for the delivery of the duties of a Lead Local Flood Authority. Where necessary, a competent Lead Local Flood Authority can bid for external capital funding for projects to deal with flood risk from surface water, tidal waters, groundwater or land drainage sources. The capital funding is provided by the Environment Agency who work with the Council to develop a flood risk management 6-year programme. On occasion, Anglian Water, the sewerage undertaker, also provides funding to the Council. The Department for Education also offers annual funding towards the installation of sustainable drainage systems at schools.
- 2.3 The NELC Drainage and Coastal Defence team have delivered a number of surface water and land drainage flood risk management schemes over the years. Currently, there are surface water and groundwater flood risk management schemes to the value of £3M+ planned over the next 2-3 years. There is also a £6M+ coastal defence scheme planned for the Humberston Fitties, subject to the successful acquisition of the funding.

3. OTHER OPTIONS CONSIDERED

- 3.1. Production of the LFRMS is a legal requirement and, as such, no other options were considered other than its production. The new Strategy now needs to be adopted by Cabinet and published on-line to ensure full compliance with the Flood and Water Management Act 2010.

4. REPUTATION AND COMMUNICATIONS CONSIDERATIONS

- 4.1. There are reputational issues associated with flood issues. Flooding events invariably attract criticism of the Council and its partners involved in flood risk management. However, this Strategy outlines how the Council will reduce flood risk and increase the borough's flood resilience. Also, the Drainage and Coastal Defence team always investigate flooding incidents and look to develop mitigation measures against further flooding events. These investigations are a statutory requirement of the Flood and Water Management Act.
- 4.2. Part of the approach to increased resilience will entail working with residents in flood risk locations to ensure they understand the risk and the resilience measures available to better protect their property.
- 4.3. Overall, the work to reduce flood risk and increase resident's understanding of their flood risk, and potential resilience measures, should enhance the Council's reputation as a Lead Local Flood Authority.

5. FINANCIAL CONSIDERATIONS

- 5.1. The core funding for carrying out the duties of a Lead Local Flood Authority is allocated by Defra and the Ministry of Housing, Communities and Local Government. This includes the production of the LFRMS.

- 5.2. The Drainage and Coastal Defence team's revenue budgets are set at a level that funds the day-to-day minor works needed to maintain the Borough's drainage systems and coastal defences for which the Council are responsible for. For capital schemes, i.e., major works that reduce flood risk in the Borough, Defra provide the funding which the Environment Agency manage. Anglian Water also provide capital funding to the council for flood risk management schemes on an ad-hoc basis.
- 5.3. There will be no call on Council reserves for the delivery of actions required by the LFRMS.

6. CHILDREN AND YOUNG PEOPLE IMPLICATIONS

- 6.1. No children and young person's implications have been identified.

7. CLIMATE CHANGE, NATURE RECOVERY AND ENVIRONMENTAL IMPLICATIONS

- 7.1. As detailed above, the LFRMS focuses primarily on the effects of climate change and the need to consider it in all flood risk management measures carried out in the delivery of the LFRMS objectives.
- 7.2. A Habitats Regulations Assessment was carried out to assess the impact of the Strategy on designated habitats in the Borough. No significant effects were identified.
- 7.3. Likewise, a Strategic Environmental Assessment was carried out, and it was concluded the Strategy would not harm the environment. In fact, the environment may potentially benefit from many of the proposed measures.

8. PUBLIC HEALTH, HEALTH INEQUALITIES AND MARMOT IMPLICATIONS

- 8.1 No health or inequality impacts have been identified as resulting from the measures carried out in the delivery of the LFRMS objectives.

9. CONSULTATION WITH SCRUTINY

- 9.1 The report was presented to July's Transport, Infrastructure and Housing Scrutiny Panel

10. FINANCIAL IMPLICATIONS

- 10.1 There are no direct financial implications for the Council resulting from the adoption of the Strategy.
- 10.2 Any future schemes arising from the implementation of the Strategy will be subject to the identification and securing of appropriate funding, and consideration through the Council's established governance processes.

11. LEGAL IMPLICATIONS

- 11.1 There are no legal implications immediately arising, save to say that in having an updated strategy, aligned with statutory and regulatory expectations as set out, demonstrates the Council's compliance with its duties.
- 11.2 The delegations sought are appropriate.

12. HUMAN RESOURCES IMPLICATIONS

- 12.1 No HR Implications

13. WARD IMPLICATIONS

- 13.1 All the Borough's Wards are affected.

14. BACKGROUND PAPERS

- 14.1 Local Flood Risk Management Strategy, Appendix A – Strategic Measures, Appendix B – Action Plan

15. CONTACT OFFICER(S)

- 15.1 Andy Smith, Drainage and Coastal Defence Team manager, tel. no. 01472 324351

Councillor Paul Batson
Portfolio Holder for Housing, Infrastructure and Transport

North East Lincolnshire - Local Flood Risk Management Strategy - Appendix A - Strategic Measures

Climate Resilient Places	
Working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change	
Objective	Strategic measure
1 We will increase our skills, capabilities and understanding of local flood risk through investigations and continually improving data	By 2024, NELC will have established and continue to monitor the ongoing maintenance of SuDS by working with the Doncaster, Immingham, and Grimsby (DIG) surface water resilience project in order to assess resource requirements and install SuDS that will be functional and efficient for longer.
	The North East Lincolnshire Strategic Flood Risk Board will identify funding opportunities in North East Lincolnshire by sharing information of upcoming grants and working with wider stakeholders including the RFCC.
	NELC will continue to maintain existing traditional drainage infrastructure and new SuDS infrastructure in North East Lincolnshire in order to preserve functionality and efficiency.
	The North East Lincolnshire Strategic Flood Risk Board will maximise the benefits of funding through partnership working and identifying opportunities to work together to achieve common goals in reducing local flood risk and increasing local flood resilience.
2 We will work with development planning to seek opportunities to improve resilience through new and existing development, to encourage environmental net gain	The North East Lincolnshire Strategic Flood Risk Board will improve understanding of local flood risk through the use of new data where they become available, in particular the updated reservoir inundation mapping, NaFRA2 and the Environment Agency Coastal Hazard Mapping. This will then be used alongside planning considerations.
	North East Lincolnshire Local Planning Authority in consultation with RMAs will encourage SuDS retrofit on brownfield sites and enhanced green infrastructure to mitigate the existing flood risk to urban areas.
3 We will strive for sustainability in all aspects of flood risk management in order to meet the Council's goals of cutting carbon emissions to net zero by 2040	By 2030, NELC LLFA will increase the uptake of green infrastructure on new and existing development in order to maximise biodiversity net gain and water quality by working with the Green Infrastructure in Greater Lincolnshire (GIGL) scheme.
	By 2040, NELC will, where possible, minimise carbon emissions in undertaking flood risk mitigation works in order to meet North East Lincolnshire Council's goal of reducing carbon emissions to net zero by 2040 as set out in the Net Zero Carbon Roadmap.
	By 2030, Lincolnshire Wildlife Trust will use the Natural Environmental Investment Readiness Fund (NEIRF) in order to expand current environmental initiatives and support new investment into the natural environment in North East Lincolnshire.
By 2026, NELC LPA and LLFA will encourage the use of nature-based solutions and reduction of carbon emissions by setting out in the planning system guidance and NELC requirements for use of SuDS and nature-based solutions for new development to incorporate these in preference to hard engineering in North East Lincolnshire.	
Today's growth and infrastructure resilient in tomorrow's climate	
Making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as infrastructure resilient to flooding and coastal change	
Objective	Strategic measure
4 We will seek opportunities for innovation in flood risk management duties and schemes to adapt to a changing climate	The North East Lincolnshire Strategic Flood Risk Board will undertake a coordinated approach to flood risk mitigation works through consideration of the objectives and requirements within all relevant plans and strategies when undertaking flood defence works, development or future environmental changes in the Humber Estuary.
	Planners will work with internal and external Risk Management Authorities to reduce flood risk, where suitable, when redeveloping brownfield sites.
	North East Lincolnshire LLFA will work with the Local Plan team to develop Critical Drainage Areas to allow surface water drainage and flood risk to be adequately assessed during the planning process.
	The Local Planning Authority and Lead Local Flood Authority will work with developers through the planning process and provision of pre-application advice to achieve biodiversity net gain and encourage use of green infrastructure and SuDS in all new developments across North East Lincolnshire.
5 Plan and adapt to a changing climate through developing longer term adaptive approaches	By 2030, North East Lincolnshire Council LLFA will lead Property Flood Resilience schemes where appropriate, to mitigate the risk of flooding to individual properties, by applying to local sources of funding in order to address the flood risk to key residential areas in North East Lincolnshire.
	Anglian Water will invest £12 million to improvements to the drainage and wastewater network between 2025-2050 as set out in the Drainage and Wastewater Management Plan.
	Define critical assets within the Flood Risk Asset Register and develop an asset management plan to ensure the long term maintenance of Flood Risk Assets.
	North East Lincolnshire Council in partnership with Anglian Water will invest in disconnecting the sewer networks and seek opportunities through wider schemes to separate the current combined network across the authority.
A nation ready to respond and adapt to flooding and coastal change	
Ensuring local people understand their risk to flooding and coastal change, and know their responsibilities and how to take action	
Objective	Strategic measure
6 We will build upon and improve existing resilience at a community level through increasing awareness and understanding of flood risk and working together to embed resilience in buildings and planning.	By 2030, the Lead Local Flood Authority will improve the resilience of communities responding to flooding by engaging with communities and the National Flood Forum to support new emergency flood plans so that residents know how and when to respond in flood events in North East Lincolnshire.
	By 2025, the North East Lincolnshire Strategic Flood Risk Board and Local Planning Authority will consult with the EA on planning applications in the floodplain to seek to reduce displacement of fluvial flood risk from Main Rivers.
	The Local Resilience Forum will continue to increase community flood resilience by encouraging residents to sign up for flood warnings, where suitable to increase preparedness and resilience during flood events in North East Lincolnshire.
7 We will continue to review preparedness in responding to flood events and update accordingly through working with the Local Resilience Forum and communities so that communities and RMAs alike can better prepare and respond to flooding and coastal change	Following flood events, the Lead Local Flood Authority will work with homeowners and insurers to look to build back better, working alongside the Environment Agency to fund future mitigation works and encourage flood resistance and resilience.
	By 2025, RMAs will encourage the next generation of RMAs to support future resource by working with higher education programmes and placement providers to influence and tailor course content to the requirements of local flood risk management and make contacts for attendees to consider the career path.

North East Lincolnshire - Local Flood Risk Management Strategy - Appendix B - Action Plan

Location	Flood risk management issue	Objective link	Action	Funding source	Timescale	Action owner	Priority
Grimsby	Understanding of surface water flood risk	1	Produce a detailed surface water model for Grimsby to inform future flood risk mitigation schemes and studies in the area, in order to reduce the risk of flooding to properties.	FDGiA/Local Levy	By 2024	NELC LLFA	High
Habrough, Immingham Ward	Surface water flooding and SuDS	1, 3	Potential future scheme include SuDS retrofit alongside previous scheme completed at West End Road, but low priority as previous work seems to have resolved most of the issues.	FDGiA/Local Levy	By 2027	NELC LLFA	Low
Immingham West, Immingham Ward	Tidal Flooding and NFM	4	Improvement works have taken place at the tidal gates to prevent sea water filling the channel and increasing risk. Potential NFM scheme in the area to create a wetland storage area.	FDGiA/FCIP	By 2027	NELC LLFA	Medium
Immingham East, Immingham Ward	SuDS and infrastructure upgrades	2, 3, 4	The SuDS retrofit project will construct SuDS features throughout the town as mitigation against surface water flooding alongside additional scope for 2nd phase SuDS project. NELDB looking at upgrades to Immingham 2 pumping station. Potential for project with town council to create a wetland nature reserve.	FDGiA/FCIP	By 2027	NELC LLFA	Medium
Stallingborough, Immingham Ward	Drainage improvements and SuDS	2, 5	Improvements to drainage network through the village have taken place. There us also potential for SuDS in the village and NFM upstream.	FDGiA/FCIP	By 2025	NELC LLFA	Medium
Healing, Wolds Ward	Drainage improvements, sewer flooding and NFM	1, 4	Land drainage diverted from undersized drain. Potential for NFM measures upstream to minimise the impact of agricultural runoff. Improvement of sewer network connections as repeated sewer flooding events have been identified in this area.	AMP	By 2026	NELC LLFA	High
Laceby, Wolds Ward	Sewer flooding, NFM, PFR	1, 2, 6	Significant issues with sewer connections in this area identified. Scope for implementation of SUDS measures, NFM upstream. Additionally, some properties likely to require PFR measures.	AMP/FDGiA	By 2030	NELC LLFA	High
Wybers Wood, Freshney Ward	Drainage improvements , SuDS and PFR	1, 6	Scope to disconnect some areas from combined sewer and drain in to the New Cut Drain alongside SuDS and potential for PFR.	Frequently Flooded Communities grant/FDGiA/Local Levy	By 2027	NELC LLFA	Medium
Broadway, Yarborough Ward and South Ward	SuDS and surface water flooding	2, 5	Trial site for SuDS Retrofit Project with works commencing in early 2024 to install rain gardens. Potential for 2nd phase of works around surrounding streets and schools.	FDGiA/Local Levy/FCIP	by 2026	NELC LLFA	High
Cleethorpes North, Sidney Sussex Ward	Groundwater flooding issues	1	Groundwater flooding issues around Chapman's Pond have previously been investigated but discontinued.	FCIP	by 2027	NELC LLFA	Low
New Clee, Sidney Sussex Ward	SuDS and surface water flooding	1, 4	Potential for SuDS measures to be introduced and investigations in to existing culverts which could be brought back online.	FDGiA/Local Levy/FCIP	by 2027	NELC LLFA	Medium
Cleethorpes South, Haverstoe Ward	Tidal flooding, defence improvements	5	Future project at Kingsway Sea Wall to renew the defence in addition to surface water improvement works at the golf course.	EA/FDGiA	by 2030	NELC LLFA / EA	High
Humberston, Humberston and New Waltham Ward	Sewer flooding and SuDS	1, 2	Potential scheme at Brooklyn Drive to limit land drainage getting in to the foul sewer network alongside SuDS scheme at Lonsdale Close.	AMP/FDGiA/Local Levy	by 2030	NELC LLFA / Anglian Water	Medium
New Waltham, Humberston and New Waltham Ward	SuDS and NFM	2, 4	Potential for some SuDS and NFM to be used in certain locations	FDGiA	by 2027	NELC LLFA	Medium
Waltham, Waltham Ward	NFM and Flood Storage Area	4, 5	Potential for upstream NFM to be used to reduce flows in to Buck Beck. Post 2007 improvemints works created a Flood Storage Area in Mount Pleasant.	FDGiA	by 2027	NELC LLFA	Medium
Brigsley, Waltham Ward	Drainage and surface water flooding, NFM	4, 5	Potential for upstream NFM measures.	FDGiA	by 2027	NELC LLFA	Medium
Ashby cum Fenby, Waltham	Surface water flooding	1	Surface water drainage serving the main road is undersized, potential for daylighting downstream.	Revenue/Local Levy	by 2025	NELC LLFA	High
Scartho, Scartho Ward	SuDS, NFM and PFR	2, 4, 6	Potential for some SuDS and NFM to be used in certain locations, and a larger PFR scheme with Laceby	FDGiA	by 2027	NELC LLFA	Medium
Borough wide	Surface water flooding and SuDS	2, 3, 6	Use the FCRIP to increase the use of SuDS in order to manage local surface water flooding issues in NE Lincolnshire.	FCRIP	By 2027	NELC	Medium
Borough wide	SuDS approval processes	2, 4	Increase skills and capacity with the Council to support the introduction of the SuDS Approval Body through the enactment of Schedule 3 of the FWMA in 2024 by working with local training programmes and universities to increase resources.	N/A	By 2025	NELC LLFA	Medium
Borough wide	Sustainable drainage	2, 3, 6	Work with local planning officers to increase awareness and knowledge of sustainable drainage by developing toolkits and standing advice for the authority area.	Local Levy	By 2025	NELC LLFA	Medium
Borough wide	Local flood risk and increases due to climate change	1	Improve understanding of local flood risk and the implications of climate change through the use of the upcoming NaFRA2 data.	N/A	By 2024	All RMAs	Medium
Borough wide	Drainage and wastewater	1	Assess the efficiency and capacity of water infrastructure across North East Lincolnshire and identify actions to address limitations to the drainage and wastewater network across the North East Lincolnshire area.	AMP	By 2025	Anglian Water	High
Borough Wide	Community resilience	6, 7	Improve the resilience of communities to flood events by engaging with and supporting flood awareness campaigns in North East Lincolnshire.	Local Levy	By 2027	North East Lincolnshire Strategic Flood Risk Board	Medium
Borough wide	Community resilience	6, 7	Support and encourage communities to take on additional responsibilities regarding the flood risk to their area, by involving the community in the FCRIPs and monitoring the success.	Local Levy FCRIP Other sources	By 2026	NELC LLFA and other organisations involed through the DIG and Groundwater Flood and Coastal Resilience Innovation Programmes	Medium
Borough wide	Development in areas of flood risk	2	Raise awareness of development on the floodplain and the consequences of raising land in the floodplain in North East Lincolnshire.	Local Levy	By 2024	NELC LPA and LLFA	High
Borough wide	RMA preparedness	7	Increase the preparedness of RMAs through reviewing and updating multi-agency flood plans where required, and increasing the awareness of planned responses for RMAs.	Local Levy	By 2025	NELC LLFA and the Local Resilience Forum	Medium
Borough wide	Drainage and wastewater	1, 4	As part of the Grimsby study, Anglian Water will assess the efficiency and capacity of water infrastructure across North East Lincolnshire and identify actions to address limitations across the North East Lincolnshire area.	AMP	By 2025	Anglian Water	High

North East Lincolnshire Local Flood Risk Management Strategy

Final Report

04/04/2025

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Contract

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Environment Agency

Anglian Water

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Abbreviations

ABP	Associated British Ports
AEP	Annual Exceedance Probability
Defra	Department for Environment, Food and Rural Affairs
DG	Director General
EA	Environment Agency
FCERM	Flood and Coastal Erosion Risk Management
FDGiA	Flood Defence Grant-in-Aid
FMfP	Flood Map For Planning
FRISM	Flood Risk Metrics [JBA Consulting's impact analysis software]
FRMP	Flood Risk Management Plan
FWMA	Flood and Water Management Act
GiA	Grant-in-Aid
GIS	Geographic Information System
HRA	Habitat Regulations Assessment
IDB	Internal Drainage Board
LFRMS	Local Flood Risk Management Strategy
LiDAR	Light Detection And Ranging
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
NELC	North East Lincolnshire Council
PFRA	Preliminary Flood Risk Assessment
Ramsar	The intergovernmental Convention on Wetlands, signed in Ramsar, Iran, in 1971
RBD	River Basin District
RFCC	Regional Flood and Coastal Committees
RMA	Risk Management Authority
RoFSW	Risk of Flooding from Surface Water
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
SPA	Special Protection Area
SuDS	Sustainable Drainage Systems
UKCP18	United Kingdom Climate Projections 2018
WFD	Water Framework Directive

Definitions

Main rivers: those rivers marked on the official main river map which is held by Defra and maintained by the Environment Agency.

Ordinary watercourses: every river, stream, ditch, drain, cut, dyke sluice and passage through which water flows that is not part of a main river.

Executive Summary

Purpose of the Local Flood Risk Management Strategy

This Local Flood Risk Management Strategy (LFRMS) (2025) sets out how North East Lincolnshire Council (NELC) address the management of local flood risk and undertake their flood risk management responsibilities as required under the Flood and Water Management Act (FWMA) 2010. This Strategy is an update of the existing LFRMS (2015). As part of this update, a full review of the existing Strategy has been undertaken so that it aligns with the latest guidance and legislation. There have also been improvements in available datasets since the previous Strategy was published, which have also been incorporated. The objectives in relation to flood risk management have been updated to reflect the objectives that have been set in the Environment Agency's National Flood and Coastal Erosion Risk Management (FCERM) Strategy for England.

To support the objectives, strategic measures have been developed under each of the three themes from the Environment Agency's updated National FCERM Strategy. A new Action Plan has also been produced that sets the actions for the Authority to achieve its objectives over the short term.

The purpose of this Strategy is to set out NELC's approach to managing flood risk from local sources (i.e. surface water, ordinary watercourses and groundwater) in both the short and longer term, with proposals for sustainable actions that will help the Authority to manage the risk in a way that delivers the greatest benefit to their residents, businesses and the environment.

Under the FWMA 2010, all Risk Management Authorities (RMAs) are expected to exercise their flood and coastal erosion risk management functions consistently with the national strategy. As a result, the aims and objectives of this strategy are directly aligned to the objectives set out in the Environment Agency's National FCERM Strategy for England (adopted 25 September 2020). The national strategy provides a framework for guiding the operational activities and decision making of practitioners supporting the direction set by government policy in England and sets out the long-term delivery objectives the nation should take over the next 10 to 30 years. It also sets out shorter term, practical measures that RMAs should take working with partners and communities.

The objectives of the LFRMS have been divided into three pillars, which are aligned with the national strategy:

- Climate Resilient Places: working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change.
- Today's growth and infrastructure resilient in tomorrow's climate: making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as infrastructure resilient to flooding and coastal change.

- A nation ready to respond and adapt to flooding and coastal change: ensuring local people understand their risk to flooding and coastal change and know their responsibilities and how to take action.

Methodology to date

This LFRMS has included a revision of methods undertaken in the previous strategy (2015), in order to get a succinct and focused set of objectives and measures, the three pillars from the Environment Agency's National FCERM Strategy for England have been used. The objectives and measures set in the previous strategy were reviewed and updated as part of a workshop with key stakeholders on the project. This is to ensure all key stakeholders involved in working with NELC to achieve the objectives of this strategy feel they are specific, measurable, achievable, realistic and time bound.

A community questionnaire was undertaken across the North East Lincolnshire area, to gather information on flood history, issues and resilience to events. Local flooding was attributed to a variety of factors including extreme high tides, abnormal and persistent rainfall, blocked drains, and topography. Of the 109 responses to the questionnaire 43 respondents said they had experienced flooding in the vicinity of their property, due to the above reasons. Local flooding issues with backed up drains leading to overland flow have been reported across North East Lincolnshire, however fluvial flooding is also prominent. Respondents also reported groundwater flooding in some cases as well as foul sewers overflowing. 84 respondents said they were currently unaware of any flood plans in their area, however of the 19 people who said they were aware of flood plans these included phone calls to residents to make them aware of upcoming severe weather events, flood sirens, posters, and locally organised escape plans within neighbourhood watch groups.

A hotspot analysis has also been undertaken to assess the tidal, fluvial and surface water flooding risks to key infrastructure receptors and identify areas of higher flood risk which were then taken forward as the areas of focus for the development of objectives and measures for this strategy. This analysis identified 18 surface water hotspots and 4 rivers and sea hotspots across the borough. Mitigation of flood risk in these areas will be captured through the objectives and measures.

NELC will work in partnership with the North East Lincolnshire Strategic Flood Risk Board to deliver these objectives and measures, alongside input from the EA, Anglian Water, Lincolnshire Wildlife Trust, North East Lindsey Internal Drainage Board (IDB), and Lindsey Marsh IDB.

1 Introduction

1.1 Importance of the Strategy

The Environment Agency's National Flood and Coastal Erosion Risk Management (FCERM) Strategy for England highlights the magnitude of flood risk across the country.

Over 5.2 million homes and properties in England are at risk from flooding and coastal erosion and the impacts of future climate change mean this number is only likely to increase. As well as properties, flooding can impact key infrastructure, such as water, energy, and transport, impacting the lives of many more people.

Nearly 40,000 properties have a 1% annual chance of flooding from rivers and sea in North East Lincolnshire, and over 4,000 have a 1% annual chance of flooding from surface water. Areas of the coastline are susceptible to risk of flooding from the sea and . flood risk mapping and historic flood records also show a significant flood risk from a range of sources including fluvial, surface water, groundwater, and sewer, that can be equally disruptive and damaging as the risk from the coast. Significant flood events such as November 2019, have led to wide disruption across North East Lincolnshire whilst communities such as Grimsby suffer more regularly from multiple sources of flooding.

The development of this Local Flood Risk Management Strategy (LFRMS) is key for North East Lincolnshire Council (NELC) to further understand the flood risk across North East Lincolnshire from all sources, identify key areas of risk, and manage and prioritise future resource through the objectives and measures developed as part of this LFRMS.

1.2 North East Lincolnshire Council Priorities

'Stronger economy and stronger communities'.

To achieve this vision, NELC need to work in new ways with partners in the public and private sectors, the voluntary and community sector, and with individuals, families and communities. NELC must support and enable the achievement of improved community outcomes with creativity and innovation.

NELC want North East Lincolnshire to be seen as an attractive place to live, work, visit and invest. NELC know that they have significant and exciting opportunities for investment and growth in North East Lincolnshire.

NELC's stronger economy / stronger communities' priorities are underpinned by a key strategic framework comprising the following:

- Health and wellbeing strategy.
- Economic strategy.
- Prevention and early intervention strategy.
- Financial strategy.
- Safeguarding.

The NELC outcomes framework is the means by which their priorities will be translated into action and delivered, developed and achieved in conjunction with their partners across sectors. This is intended to drive a culture of evidence-based decision-making that will enable elected members to take informed key decisions, knowing the risks and the opportunities for citizens, communities and businesses. NELC's commissioning plan will ensure and foster clear links between the outcomes framework and the resources available to achieve them.

The framework sets out the five high level outcomes that NELC and their partners aspire to achieve to ensure prosperity and wellbeing for the residents of North East Lincolnshire.

The five outcomes are that all people in North East Lincolnshire will:

- Enjoy and benefit from a strong economy.
- Feel safe and are safe.
- Enjoy good health and wellbeing.
- Benefit from sustainable communities.
- Fulfil their potential through skills and learning.

1.3 Context and Legislation

This Strategy is a review of the previous North East Lincolnshire Local Flood Risk Management Strategy (LFRMS), published in 2015. The LFRMS review should consider local issues and policy. It must be consistent with the National Flood and Coastal Erosion Risk Management (FCERM) Strategy, take account of the current policy, and reflect the aspirations and priorities of other partners with responsibilities for FCERM along with wider local interests in linked environmental or social outcomes.

The review was triggered by the updated National FCERM Strategy, published in 2020, and the associated FCERM Strategy Roadmap to 2026, published in 2022.

1.4 Methodology

The Local Government Association sets out a five-step circular process for developing a LFRMS, which has been used as the basis for this Strategy review. The five stages are:

1. Understand flood risk.
2. Set objectives.
3. Choose measures.
4. Implement.
5. Monitor and review.

All the stages are underpinned by the concept of 'Work with others' highlighting the collaborative nature required throughout all stages of developing the Strategy. Further information is available on the Local Government Association website, [here](https://www.local.gov.uk/topics/severe-weather/flooding/local-flood-risk-management-strategies-lfrms-guidance/develop-local)¹.

¹ <https://www.local.gov.uk/topics/severe-weather/flooding/local-flood-risk-management-strategies-lfrms-guidance/develop-local>

The following methodology was used in developing this Strategy review:

1. **Literature review:** a review of the existing strategies, policies and legislation affecting flood risk management across North East Lincolnshire was undertaken. These documents were summarised, and any key outcomes, actions, objectives and measures were collated, which were then used to inform the development of objectives and measures for this Strategy review.
2. **Community questionnaire:** a questionnaire was developed to capture flood risk information from the community including areas, types and frequency of flooding as well as information on flood plans and community preparedness. The outputs of this questionnaire supported both the hotspot analysis and the development of objectives and measures.
3. **Hotspot analysis:** 500m grid squares across the North East Lincolnshire area were run through JBA's internal FRISM software to assess the fluvial, sea and surface water flooding risks to key infrastructure receptors. Following analysis of the data, this produced a category of high risk areas containing the greater number of receptors at risk from each source of flooding. These high risk areas were reviewed alongside other data sources such as community responses, flood history and local knowledge before being taken forward as the areas of focus for the Strategy.
4. **Initial development of objectives and measures:** following on from collated information from local plans and strategies emerging from the literature review, and information from the community questionnaire and hotspot analysis, an initial draft was formed compiling ideas for objectives and measures to set out in the Strategy review.
5. **Stakeholder workshop:** stakeholder mapping was undertaken with NELC to capture the range of stakeholders to consult over the course of the Strategy review and the stages of consultation. Following initial contact, all key stakeholders to involve attended a stakeholder workshop to review the draft objectives and measures.
6. **Finalisation of objectives and measures:** discussions and feedback from the stakeholder workshop was used to finalise the objectives and measures for the Strategy.
7. **Strategic Environmental Assessment and Habitats Regulation Assessment:** a screening and scoping exercise was undertaken to assess the impact of the Strategy's updated objectives and measures against potentially significant environmental effects and potential effects on European Sites respectively.
8. **Development of the full Strategy:** the final stage was to bring all the findings from the initial stages together within the full Strategy, following the five stages from the Local Government Association set out above.

1.5 Links with the National Flood and Coastal Erosion Risk Management Strategy

The Environment Agency (EA) has a statutory duty to develop, maintain, apply and monitor a National FCERM Strategy for England. This was last updated in 2020, and is available on the government website, [here](#)². This strategy describes what needs to be done by all Risk Management Authorities (RMAs) involved in flood and coastal erosion risk management for the benefit of people and places. This strategy seeks to better manage the risks and consequences of flooding from rivers, the sea, groundwater, reservoirs, ordinary watercourses, surface water and sewers and coastal erosion.

The 2020 Strategy sets out three long-term ambitions, underpinned by evidence about future risk and investment needs. They are:

- Climate resilient places: working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change.
- Today's growth and infrastructure resilient in tomorrow's climate: making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as infrastructure resilient to flooding and coastal change.
- A nation ready to respond and adapt to flooding and coastal change: ensuring local people understand their risk to flooding and coastal change, and know their responsibilities and how to take action.

1.6 Strategic Environmental Assessment and Habitats Regulation Assessment

The Strategic Environmental Assessment (SEA) and Habitat Regulations Assessment (HRA) are statutory documents which are sometimes required when developing objectives which may impact an area.

1.6.1 Strategic Environmental Assessment

When preparing a LFRMS, it is a statutory requirement to carry out a SEA to identify any potentially significant environmental effects arising from the implementation of the strategy. SEA is an integrated, systematic appraisal of the potential environmental impacts of policies, plans, strategies, and programmes during their development before they are approved. It ensures that implications for the environment have been fully and transparently considered. It considers a range of environmental issues including biodiversity, population, human health, flora and fauna, soils, water, air, climate, material assets, heritage, landscape, and the interactions among these factors.

A screening exercise and scoping report were undertaken to support the Strategy, followed by a SEA Report. This report did not identify any significant effects of the Strategy, and that in fact many of the proposed measures have the potential for direct or indirect benefits. See the SEA Report in Appendix C for more detail.

² <https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2#full-publication-update-history>

1.6.2 Habitat Regulations Assessment

The purpose of the HRA is to identify, describe and assess the likely significant effects of implementing the strategy on European designated sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites) within and around North East Lincolnshire. The HRA provides NELC information to assist in their consideration of whether the proposed strategy will have likely significant effects on European Sites, and in ascertaining any adverse effects on their integrity.

No significant effects were identified through the Strategy, therefore there is no need for an Appropriate Assessment. See the HRA Report in Appendix D for more detail.

1.7 Other plans, policies, strategies, and legislation

In addition to the National FCERM Strategy, this section details other policies, strategies, and legislation which have been published or updated since the previous Strategy was published in 2015, and will influence flood risk management across North East Lincolnshire.

1.7.1 Humber River Basin District Flood Risk Management Plan 2021 to 2027

The six-year cycle of assessment, mapping and planning required under the Flood Risk Regulations (2009) requires the development of Flood Risk Management Plans (FRMPs). The development of the FRMPs is led by the Environment Agency and requires the assessment of flooding from main rivers, the sea, and reservoirs. The first FRMPs were published in 2016 and the second cycle plans which describe actions to manage flood risk across England between 2021 and 2027 were published in December 2022.

North East Lincolnshire lies within the Humber River Basin District (RBD). NELC have contributed local flood risk information which is included in the Humber RBD FRMP.

The Humber RBD FRMP is available on the government website, [here](https://www.gov.uk/government/publications/humber-river-basin-district-flood-risk-management-plan)³.

As of 1 January 2024, the Retained EU Law (Reform and Revocation) Bill automatically repealed any retained EU law not otherwise preserved or replaced in UK law before the end of 2023, including the Flood Risk Regulations 2009 which transposed the EU Floods Directive into legislation. This is because much of the Flood Risk Regulations 2009 is duplicated in existing domestic legislation, namely the FWMA 2010. The Environment Agency and Lead Local Flood Authorities (LLFAs) in England will therefore no longer be required to comply with the third cycle of planning, however the government expects to see continued implementation of the FRMPs 2021-2027.

1.7.2 The Humber 2100+ Strategy

The Environment Agency and 12 Local Authorities from around the Humber, including NELC, are working in partnership to develop a new strategy that will address the tidal flood risk at the Humber Estuary and enable sustainable growth now and for the next 100 years.

³ <https://www.gov.uk/government/publications/humber-river-basin-district-flood-risk-management-plan>

The Humber 2100+ Strategy will replace the current flood risk management strategy, 'Planning for the Rising Tides' which was put in place in 2008. The 2013 tidal surge gave the Environment Agency better evidence for how flood water will behave and has made the case for the new Strategy to be developed.

Further information can be found on the Environment Agency's dedicated Humber 2100+ Information Page, [here](#)⁴.

1.7.3 North East Lincolnshire Local Plan

Local Plans are a statutory planning policy document produced by Local Planning Authority's (LPA's) providing the basis for planning decisions in the borough. The current North East Lincolnshire Local Plan was adopted in 2018 and is currently undergoing a three-year review process which commenced in October 2021.

The local plan review will seek to:

- Simplify the Local Plan.
- Focus on local priorities.
- Not repeat national guidance.
- Provide a framework for development in North East Lincolnshire to be a place where people are proud to live, work, invest and visit.

This Strategy will be used to inform the local plan review. Further information on the local plan review is available on the NELC website, [here](#)⁵.

1.7.4 North East Lincolnshire Council Plan, 2025 -2028

The NELC Plan was published in early 2025. The priorities and vision for North East Lincolnshire are 'To create a stronger economy and stronger communities'. The main aims from this Plan to be considered within this Strategy update are:

- Where business can sustain and grow.
- Where citizens of all ages live active, health, and independent lives and are much less dependent on public institutions as a result.
- Where people are proud to live, work, invest and visit.

The NELC Plan can be downloaded from the NELC website, [here](#)⁶.

1.7.5 North East Lincolnshire Council Natural Assets Plan, 2021

The Natural Assets Plan sets out how NELC and its partners can improve the area's unique natural environment for the benefit of everyone. It sets out the current situation and what actions NELC plans to take in the short, medium and long term to improve it.

⁴ <https://consult.environment-agency.gov.uk/humber/strategyreview/>

⁵ <https://www.nelincs.gov.uk/planning-and-building-control/planning-policy/local-plan-review/>

⁶ <https://www.nelincs.gov.uk/your-council/council-plan-vision-and-aims/>

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The Natural Assets Plan focuses on eight themes:

- Planning out future land use.
- Managing our open spaces.
- Biodiversity and special sites.
- Trees and woodlands.
- Water management.
- Improving air quality.
- Protecting health and wellbeing.
- Education, involvement, and enjoyment.

The Natural Assets Plan can be downloaded from the NELC website, [here](#)⁷.

1.7.6 Preliminary Flood Risk Assessment Review, 2017

The first Preliminary Flood Risk Assessment (PFRA) was produced by NELC in 2011, as required by the Flood Risk Regulations 2009, to provide a summary of local flood risk for past and future flooding. This PFRA can be downloaded from NELC website, [here](#)⁸.

The regulations set out that the PFRA should be refreshed every six years.

NELC published a PFRA addendum in 2017, available on the government website, [here](#)⁹. This highlighted that there were pluvial flooding events in 2012 and 2014, caused by intense summer rainfall events, which affected locations not previously thought to be at significant flood risk. The main issue that came out of the flooding was the extent of the areas in Grimsby and Immingham that are served by drainage systems that can be overwhelmed by intense summer rainfall events.

Groundwater flooding is also noted as becoming of increasing concern as groundwater abstraction reduces due to the decline of industrial water abstraction in the area. A Working Group has been formed between representatives of Anglian Water, the EA, and NELC to determine any necessary measures to manage the increased threat of groundwater flooding.

1.7.7 Strategic Flood Risk Assessment update 2022

⁷ <https://www.nelincs.gov.uk/keeping-our-area-clean-and-safe/climate-change/natural-assets-plan/>

⁸ [https://www.nelincs.gov.uk/keeping-our-area-clean-and-safe/flooding/flood-strategies-and-investigations/#:~:text=Preliminary%20Flood%20Risk%20Assessment%20\(PFRA\)%20\(PDF\)%20is%20required,as%20required%20by%20the%20regulations.](https://www.nelincs.gov.uk/keeping-our-area-clean-and-safe/flooding/flood-strategies-and-investigations/#:~:text=Preliminary%20Flood%20Risk%20Assessment%20(PFRA)%20(PDF)%20is%20required,as%20required%20by%20the%20regulations.)

⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/698268/PFRA_North_East_Lincolnshire_2017.pdf

NELC published an updated Strategic Flood Risk Assessment (SFRA) for the area in 2022, in collaboration with North Lincolnshire Council and the EA. This SFRA can be downloaded from NELC website, [here](#)¹⁰.

This update was required to ensure the SFRA provides a comprehensive and robust evidence base to inform the review of the North East Lincolnshire Local Plan.

SFRAs are a study carried out by the LPA to assess the risk to an area from all sources of flooding for the present day and in the future. It provides the information needed for NELC to take flood risk and climate change into account when allocating development as part of the Local Plan or determining planning applications.

¹⁰ <https://www.nelincs.gov.uk/planning-and-building-control/planning-policy/local-plan-background-information/strategic-flood-risk-assessment/>

2 Flood risk management roles and responsibilities within North East Lincolnshire

2.1 Flood risk management authorities' powers, duties, and legislation

There are many organisations that are involved in and have a contribution to make to flood risk management in the borough. The Flood and Water Management Act (FWMA) 2010 specifically designates NELC, the EA, the Drainage Boards, Anglian Water and Highway Authorities as RMAs. This designation is used by the FWMA 2010 to bestow additional requirements which do not apply to all those involved in flood risk management. RMAs have a duty to cooperate where they exercise their flood risk functions and act consistently with the National and Local Strategies with the exception of water and sewerage companies who only need to have regard to the Local Strategy.

The legislation used by the RMAs is mostly 'permissive' which means there is no legal requirement to carry out works to reduce the risk of flooding. However, the FWMA also includes statutory duties for RMAs including producing LFRMS's, Section 19 investigations, land drainage consents, and consulting on major developments.

2.2 North East Lincolnshire Council

NELC has a number of different roles which contribute to flood risk management.

2.2.1 Lead Local Flood Authority

As the LLFA for the borough, NELC have the following responsibilities which they undertake by working closely with other RMAs:

- Coordinating the management of local flood risk which includes surface water runoff, groundwater and ordinary watercourses.
 - Working closely with other RMAs to plan maintenance and improvement works to ensure the drainage systems are able to operate during a flood event.
 - Ordinary watercourse regulation. As a unitary authority, NELC already have powers under sections 14, 15, 20 and 25 of the Land Drainage Act 1991 to maintain the flow in ordinary watercourses. As the LLFA, NELC now have additional powers under sections 23 and 24 which gives them consenting and enforcement powers for certain works which are carried out (generally applies to works which will affect the flow of water or culverting). In the Internal Drainage Board (IDB) areas, they undertake this function, which is discussed further in Section 2.4.
 - A duty under Section 19 of the FWMA 2010 to investigate flood incidents to help understand how they happened, their impacts, and actions that may be taken to reduce future risk.
 - Maintaining a register of assets which are considered to have a significant effect on flood risk and to clarify ownership and responsibility for on-going maintenance.
-

- A requirement to act in a manner consistent with the national and local strategies when exercising their powers.

2.2.2 Coast Protection Authority

NELC are designated a Coast Protection Authority under the Coast Protection Act 1949 and a Coastal Erosion Risk Management Authority under the FWMA 2010. This makes them responsible and gives the powers for managing coastal erosion on two sections of coastline: North Prom, Central Prom and Kingsway of Cleethorpes (2.4km) and the front-line defence at the Humberston Fitties (1.2km). Third party activities on the coast are controlled by consenting powers. Associated British Ports (as Port Authority) and the Environment Agency are also responsible for managing sea defences along other stretches of the borough's coastline.

2.2.3 Highway Authority

As the Highway Authority under the Highways Act 1980, NELC manage the highway drainage network including pumping stations, gullies, and drains. This does not include trunk roads as these are the responsibility of the National Highways. The majority of urban highway gullies drain to a public sewer operated by Anglian Water which is not the responsibility of NELC to maintain. Some parts of the highway network drain to roadside ditches which are always the responsibility of the adjacent landowner except where the ditch has been constructed for the sole purpose of draining the road. The Highway Authority has the right to use any roadside ditch for the purpose of draining the highway. More information on riparian ownership can be found in the Environment Agency publication 'Owning a watercourse' (2018), available from the government website [here](https://www.gov.uk/guidance/owning-a-watercourse)¹¹.

2.2.4 Local Planning Authority

As the LPA, NELC is responsible for the planning process which includes individual applications and spatial planning. NELC ensure that flood risk is taken account of at all stages of the planning process in accordance with the National Planning Policy Framework. This includes taking account of other flood risk management plans for the area and consulting with other RMAs.

Currently the implementation of Sustainable Drainage Systems (SuDS) is driven through planning policy. Schedule 3 of the FWMA 2010 will provide a framework for the approval and adoption of drainage systems, a SuDS approval body within unitary and county councils, and national standards on the design, construction, operation, and maintenance of SuDS for the lifetime of the development. The previous government affirmed its commitment for enacting Schedule 3; however, it is currently unknown whether the new government intends to do this or what the proposed timescales would be.

¹¹ <https://www.gov.uk/guidance/owning-a-watercourse>

2.2.5 Category 1 Responder

Under the Civil Contingencies Act 2004 NELC are a designated Category 1 responder which gives them a duty to prepare emergency plans for major incidents including flooding. NELC work closely with the Humber Local Resilience Forum and have produced a Multi-Agency Flood Plan with the Humber Emergency Planning Service. This outlines the roles which the RMAs have and provides for a clear understanding of who should be involved in the response. NELC also has a protocol for dealing with small-scale localised flood events. This is in the form of a Local Extreme Flood Event plan which links to the Multi-Agency Flood Plan.

2.3 Environment Agency

As set out in the National Strategy the Environment Agency has the strategic overview role for all sources of flooding and coastal erosion. This includes providing evidence and advice to the government, setting direction through strategic plans, building knowledge and sharing good practice, establishing the Regional Flood and Coastal Committees (RFCCs), and monitoring and reporting on flood and coastal erosion risk management.

They also have operational responsibility for the delivery of flood and coastal erosion risk management activities on main rivers and the coast and the regulation of reservoir safety. They regulate what works can be carried out on the main rivers and coastal defences using powers given to them by the Environmental Permitting Regulations (EPR) 2016, supplemented by the Land Drainage and Sea Defence Byelaws for the Anglian Region. These byelaws manage activities that are not covered by the EPR for flood risk. They apply to activities around main rivers, flood and sea defences and flood plains.

Flood warnings and alerts, covering main rivers and the sea, are issued by the Environment Agency to people who sign up to their Floodline Warnings Direct service – these are informed by the Flood Forecasting Centre which is run in partnership with the Met Office.

The Environment Agency are a statutory consultee in the planning process for certain applications. Advice on when to consult the Environment Agency can be found on the government website, [here](https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities)¹².

2.4 Internal Drainage Boards

IDBs are established in particularly low-lying areas of England where land drainage and flood defence are necessary to protect both agricultural and developed land. The IDBs are made up of directly elected members representing landowners and also members nominated by local authorities who contribute to their funding.

IDBs have powers under the Land Drainage Act 1991 to supervise the drainage of land in their areas which includes similar consenting and enforcement powers that NELC has in relation to ordinary watercourses.

¹² <https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities>

The two IDBs with responsibilities in North East Lincolnshire borough are the Lindsey Marsh IDB and the North East Lindsey IDB. They must carry out their functions in a manner that is consistent with the national and local strategies.

Whilst the Lindsey Marsh IDB only covers a small area in the south of the borough, the North East Lindsey IDB covers the majority of the north of the borough plus the flood plains of the Laceby Beck/River Freshney and Buck Beck catchments. There is billions of pounds worth of industrial infrastructure within this Board's district.

2.5 Water and sewerage companies

The water and sewerage company in the borough is Anglian Water. Under section 94 of the Water Industry Act 1991 they have a duty to provide, maintain and operate systems of public sewers and works for effectively draining the borough. This does not include highway drainage, land drainage, groundwater, or watercourses although highway drainage can be accepted on agreement with the Highway Authority. The majority of water from the highways in urban areas is drained using gullies, maintained by North East Lincolnshire Council, which connect to sewers operated by Anglian Water.

They are responsible for managing the risks of flooding from foul, combined and surface water sewers as well as from burst water mains – problems can be reported to a 24-hour call centre and online.

They keep a register of properties which are known to be at risk of flooding, this is known as the DG5 register. This is required by Ofwat, the Water Services Regulation Authority, as part of a set of DG (Director General) indicators used to monitor their performance. This includes all properties that have suffered or are likely to suffer flooding from public foul, combined or surface water sewers due to overloading of the sewerage system. A system is overloaded when flow is unable to pass through it due to permanent problems such as flat gradients or small diameters and not temporary problems such as blockages or pipe collapse.

Anglian Water also published their Drainage and Wastewater Management Plan in May 2023, which sets out how wastewater systems and the drainage networks that impact them are to be maintained, improved and extended over the next 25 years. Through this Plan, catchments with pressures on the drainage and wastewater networks are identified and allocated to the medium- or long-term plans for investment. The Plan is available on the Anglian Water website [here](https://www.anglianwater.co.uk/corporate/strategies-and-plans/drainage-wastewater-management-plan/final-plan/)¹³.

2.6 National Highways

The National Highways is an Executive Agency of the Department for Transport and are responsible for operating, maintaining and improving the strategic road network. In North East Lincolnshire they are responsible for the A180.

¹³ <https://www.anglianwater.co.uk/corporate/strategies-and-plans/drainage-wastewater-management-plan/final-plan/>

They have sole responsibility for dealing with the surface water run-off from their roads. For new road projects this will include making sure that flood risk is not increased.

They are also responsible for identifying which of their roads are at flood risk and implementing measures to manage this.

2.7 Regional Flood and Coastal Committees

The RFCC was established by the Environment Agency under the FWMA 2010 with majority membership representing LLFAs and independent members with relevant experience for the following purposes:

- To ensure there are coherent plans for identifying, communicating and managing flood and coastal erosion risks across catchments and shorelines.
- To promote efficient, targeted and risk-based investment in flood and coastal erosion risk management that optimises value for money and benefits for local communities.
- To provide a link between the Environment Agency, LLFAs, other risk management authorities, and other relevant bodies to engender mutual understanding of flood and coastal erosion risks in its area.
- To collect the General Drainage Charge which applies to the Environment Agency Anglian Region only. This generally only applies to agricultural land, commercial woodlands and woodlands in a Department for Environment, Food and Rural Affairs (Defra) or Forestry Commission scheme. The money is used to supplement schemes and other local priorities.

NELC is a member of the Anglian Northern RFCC which approves the programme of flood risk management work to go on the FCERM investment programme and also has the power to raise money through the use of the Local Levy on Councils. This can be used to fund local priorities or support schemes in attracting national funding.

2.8 Neighbouring LLFAs

The neighbouring LLFAs to NELC are North Lincolnshire Council and Lincolnshire County Council. NELC will ensure that they work with these authorities on flood risk issues which cross boundaries. This includes working together to coordinate an approach to coastal flood risk management through the Shoreline Management Plan and the Humber Flood Risk Management Strategy. There may also be some opportunities for sharing resources where works are close to local authority boundaries.

NELC are in regular contact with their neighbouring LLFAs to discuss these issues and explore further opportunities for working together. The announcement of a devolution deal between the government and the local authorities of Lincolnshire County Council, NELC, and North Lincolnshire Council was made in November 2023. The new Greater Lincolnshire Authority will set the strategy for the individual LLFAs, which will sit at unitary level. More

information on the Greater Lincolnshire devolution deal can be found on the [government website here](#)¹⁴.

2.9 Other organisations involved in flood risk management

The following organisations or groups of people are not referred to in the FWMA, but they do have a role to play in contributing to the management of local flood risk:

2.9.1 Parish and Town Councils and Communities

The NELC's Drainage and Coastal Defence team have established good relationships with Parish and Town Councils. They are more likely to have initial contact with flood victims and can refer people to NELC for additional help.

Parish and Town Councils will be an important link when engaging with communities at risk of flooding and will often have good knowledge of the history of the area. They will also play an important role in developing community emergency plans to help prepare communities for flooding.

As communities will be involved in influencing plans and work for their area this could also be done through Parish and Town Councils or specific community groups set up in response to floods. It is important to ensure that all of those affected have an opportunity to be heard but this will vary depending on how people choose to represent themselves.

2.9.2 Associated British Ports

Associated British Ports (ABP) are responsible for maintaining the flood defences around the ports in Grimsby and Immingham. These defences protect the port estates but also some residential areas. ABP operate an emergency plan to minimise disruption and aid recovery in the aftermath of a flood.

2.9.3 Utility/Infrastructure Providers

Some utility and infrastructure providers will have assets that are classified as 'critical'. Critical infrastructure includes assets that are vital to the delivery of essential services without which there could be severe economic or social consequences. Such infrastructure includes electricity, water and gas supplies, transport infrastructure, communications, and health services. The organisations responsible for this infrastructure will be responsible for protecting it from flooding.

2.9.4 Land and Property Owners (Riparian Owners)

Landowners who have a watercourse running through or bordering their land are referred to as riparian owners. This comes with rights and responsibilities. Riparian owners are responsible for the bed and banks and any vegetation that is growing. Flows must not be

¹⁴ <https://www.gov.uk/government/publications/greater-lincolnshire-devolution-deal-2023>

obstructed and any structures such as trash screens and culverts will need to be kept free of debris to allow the free passage of water. Failure to do this could result in flooding of their property and that of their neighbours. If works are proposed in the channel or adjacent to it permission should be sought from the relevant RMA as described previously (either NELC, the IDB or the EA).

As well as being responsible for general maintenance, riparian owners can also help to reduce flood risk downstream of their land through changes to land management practices by holding rainfall on or within the ground before it reaches a watercourse.

The culverting or piping of a length of watercourse makes no difference to riparian responsibilities and the Land Drainage Act 1991. The general assumption is that for watercourses that form the boundary between two properties the owners of each property will own up to the middle of the watercourses unless the deeds to the property state otherwise. Responsibility for roadside ditches, both open and piped, causes a lot of confusion with many adjacent landowners unaware that they are the riparian owners of these ditches. Generally, the only exceptions to this are if the ditch has been dug by the Highway Authority for the primary purpose of draining the public highway so the responsibility will stay with them. Or, in areas in which NELC own the land, such as land purchased under Compulsory Purchase Order to widen / realign sections of highway. In this circumstance, NELC has the riparian duties as landowner, and not as its function as Highway Authority.

Property owners of domestic and commercial premises are responsible for the drains within the curtilage of their property. This means maintaining drains in an operational condition so water can flow and ensuring that nothing could enter the system which would cause a blockage.

Responsibility for protecting private property from flooding rests with the owner and not any of the RMAs.

2.9.5 Environmental Groups and Organisations

The following organisations are able to provide advice and guidance on protecting the environment which will be particularly useful when designing schemes or projects that can have an environmental as well as a flood risk benefit.

- Natural England is the national government advisor who provide advice on how to protect the natural environment. Their remit is to ensure that the natural environment is conserved, enhanced and managed for the benefit of present and future generations. Their work includes building an evidence base on the natural environment, managing environmental stewardship schemes, providing advice to the land owners and the planning system on protecting the natural environment and issuing licences for works on protected sites. Advice from Natural England has helped with the completion of the Habitats Regulations Assessment (see section 6 for further information).

- North East Lincolnshire is covered by two Nature Partnerships: Greater Lincolnshire and Humber. These bring together interested stakeholders to work together to protect and enhance the environment.
- There are also local groups such as Lincolnshire Wildlife Trust who safeguard wildlife in Lincolnshire by protecting and creating wildlife habitats, advise decision makers and encourage enjoyment of the natural environment.
- There are projects going on by different environmental and nature organisations that can also have a contribution to reducing flood risk, for example by providing additional storage within the catchment.

2.10 Local partnerships and governance

2.10.1 North East Lincolnshire Flood Risk Strategy Board

The North East Lincolnshire Flood Risk Strategy Board was formed in January 2022. It aims to deal with the more strategic elements of flood risk management including potential new funding streams, capital programmes oversight, and providing a link to the borough's economic development aspirations.

2.10.2 North East Lincolnshire Local Flood Risk Management Group

The complex interactions that exist between drainage systems and watercourses requires good partnership working arrangements between the RMAs listed in the previous section.

NELC have been chairing the Drainage Infrastructure Group since the summer floods of 2007. This was given further emphasis in the FWMA 2010 when the NELC was designated as the LLFA and was required to take a strategic lead over local flood risk management. The group has now changed to the Local Flood Risk Management Group to reflect the range of responsibilities NELC has as LLFA. The group currently meets four times a year with the following permanent members:

- NELC.
- The Environment Agency.
- Anglian Water.
- North East Lindsey Drainage Board.
- Lindsey Marsh Drainage Board (attendance as required by agenda).

The group has its own terms of reference which facilitates:

- The sharing of information and knowledge between members.
- Development of options to reduce the risk of flooding which can be a collaboration between several members.
- The sharing of resources, for example for maintenance activities and emergency response, which means funds can stretch further.
- The opportunity for new planning applications to be considered in relation to all sources of flooding to ensure flood risk is fully considered.

2.10.3 Local Resilience Forum

The Local Resilience Forum is attended by risk management authorities, local government, the EA, emergency services, health services and utility and transport organisations.

It plans for a range of emergency situations, of which flooding is one, by developing, maintaining and monitoring the Multi-Agency Flood Plan.

2.11 Development and flood risk management

The [National Planning Policy Framework \(NPPF\) \(gov.uk\)](https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf)¹⁵ sets out the Government's planning policies for England. This sets out policies for managing flood risk through development. The NPPF sets out a sequential, risk-based approach to flood risk management, steering development away from areas of higher risk and managing the risk on sites through a sequential site layout.

Developers are required to undertake Flood Risk Assessments (FRAs) for developments at flood risk which assess all sources of flood risk (including the implications of climate change), show that the development can be made safe for its lifetime and that it will not increase flood risk elsewhere.

¹⁵ https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

3 Understanding flood risk within North East Lincolnshire

3.1 Overview

3.1.1 Study area

According to the Office for National Statistics population estimates in 2021, 156,900 people live within the North East Lincolnshire borough. The borough covers an area of approximately 196 square kilometres and includes the towns of Grimsby, Immingham and Cleethorpes. North East Lincolnshire is bordered by the neighbouring authorities of North Lincolnshire, and West Lindsey District and East Lindsey District within Lincolnshire County.

3.1.2 Topography

The Environment Agency 1m (Light Detection And Ranging) LiDAR shows the land elevations across North East Lincolnshire (Figure 3-1). The land is highest in the south west and slopes downhill towards the coastal boundary along the eastern boundary of the borough. In general, the borough is quite low-lying making it more vulnerable to flooding than areas at higher elevation.

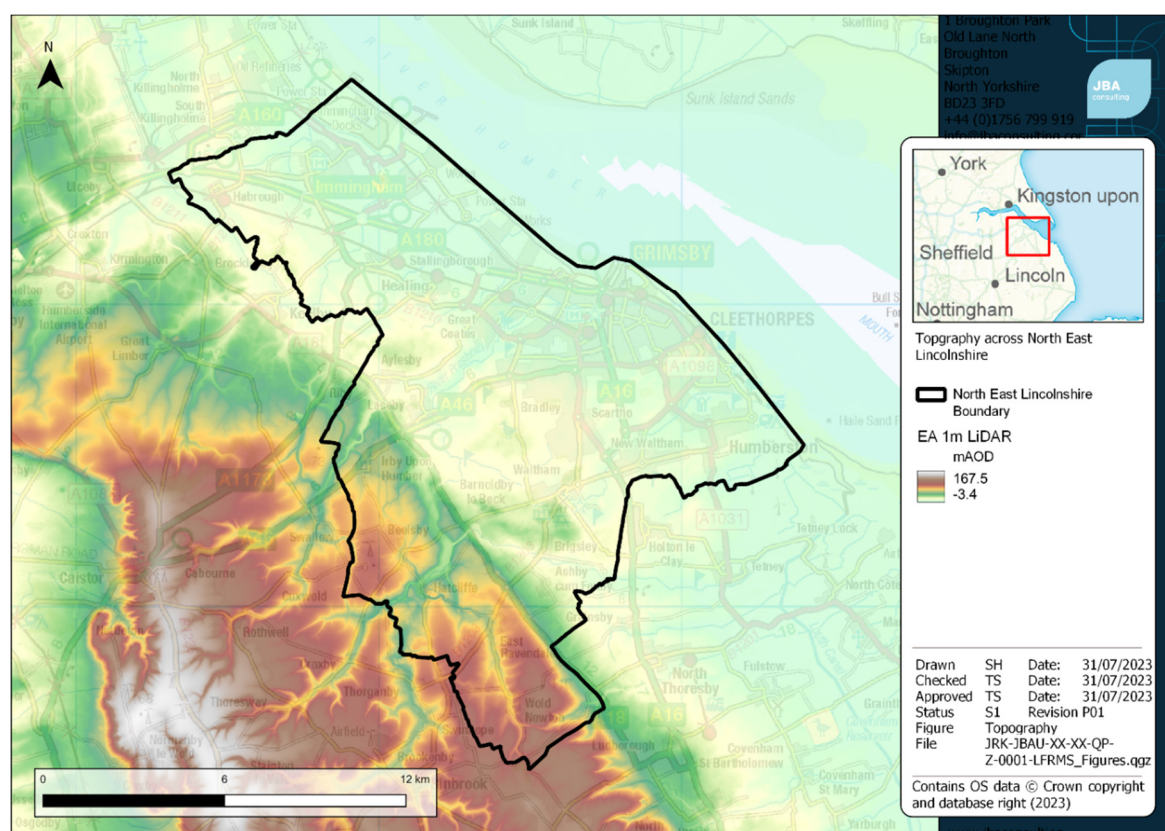


Figure 3-1: Environment Agency 1m LiDAR showing the topography across North East Lincolnshire.

3.1.3 River basin districts and catchments

North East Lincolnshire is within the Humber RBD. There are 18 Environment Agency Management Catchments within the Humber RBD, but the entirety of the borough is covered by the Louth Grimsby and Ancholme Management Catchment.

There are nine Water Framework Directive (WFD) catchments, within or partially within North East Lincolnshire, which will influence flood risk within the borough. Catchments are defined as an area of land from which all surface run-off flows through a series of streams, rivers and, possibly, lakes to a particular point in the water course such as a river confluence. These catchments are shown in Figure 3-2.

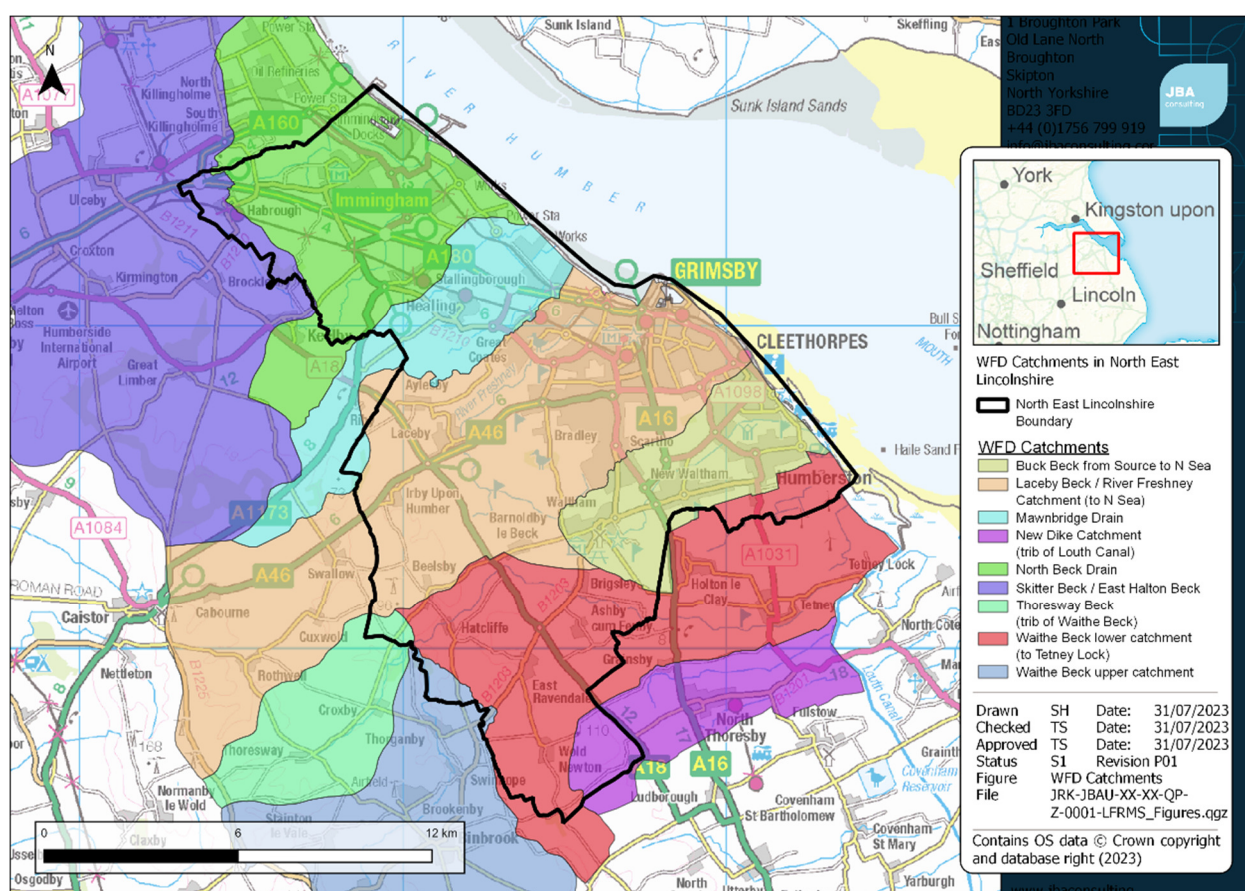


Figure 3-2: WFD Catchments in North East Lincolnshire.

3.2 Types of flooding

The public consultation highlighted the variety of flooding sources which present a risk across North East Lincolnshire. The main sources of flooding are:

- **Flooding from ordinary watercourses** – also known as fluvial flooding. This occurs when capacity in the system is reached, or a blockage causes water to come out of the channel and flow across land.
- **Surface water flooding** – also known as pluvial flooding. This occurs when, usually intense, precipitation falls onto the ground, flows over or collects on the surface and does not enter a watercourse or drainage system.

- **Groundwater flooding** – caused by water levels in rocks and soil rising until it appears above the ground surface.
- **Sewer flooding** – from the public sewer system. As defined by the FWMA 2010 flooding from this source is only covered by this strategy if it is wholly or partly caused by an increase in precipitation entering the system, not by blockages.
- **Coastal flooding**– high tides and storm surges can overtop or breach defences causing flooding inland.
- **Flooding from main rivers** – the same as for ordinary watercourse flooding.

Flooding from ordinary watercourses, surface water, and groundwater are considered by the FWMA 2010 to be local sources of flood risk which need to be included within this strategy. Sewer flooding, coastal flooding and erosion, and flooding from main rivers will also be included in the strategy since they have a large influence across the borough.

Every flood will have a different impact on people, property and the environment with the consequences of flooding depending greatly on land use. For example, overtopping and/or breach of a flood defence in a densely populated urban area poses a greater threat to life than in a rural area. The different sources of flood risk can also combine which can make the consequences more difficult to predict.

The updated SFRA for NELC published in 2022 provides mapping of historic flood events across the borough, which shows a large number of incidents, widespread throughout the settlements within the borough. This mapping can be found on the NELC website [here](#)¹⁶.

The following section looks at each source of flooding in more detail across North East Lincolnshire.

3.3 Assessment of flood risk across North East Lincolnshire

3.3.1 Flooding from rivers

Fluvial flooding occurs when the capacity of a watercourse is exceeded or when there are downstream restrictions to flow. This results in inundation of floodplains along rivers and watercourses, but also in inundation of areas outside the floodplain due to influence of bridges, embankments and other features that artificially raise water levels, overtopping or breaching of defences, blockages of culverts and blockages of flood channels/corridors. Due to the low-lying nature of the borough, which has a large tidal floodplain, some watercourses rely on pumping stations to discharge during high tide periods, as without these they can become tide locked.

The Humber RBD FRMP has identified that in the Cleethorpes Flood Risk area some 18,514 people live in areas at risk of flooding from rivers and the sea, with 6% in areas of high risk. In the Grimsby Flood Risk Area 51,623 people live in areas at risk of flooding from rivers and the sea, although less than 1% of these are in areas of high risk. In the

¹⁶ <https://www.nelincs.gov.uk/planning-and-building-control/planning-policy/the-local-plan/local-plan-background-information/strategic-flood-risk-assessment/>

Immingham Flood Risk Area, 5,934 people live in areas at risk of flooding from rivers and the sea, although less than 1% are in areas of high risk.

The main watercourses within North East Lincolnshire are:

- River Freshney.
- Stallingborough North Beck.
- Waithe Beck.
- Buck Beck.
- Oldfleet Drain.
- New Cut Drain.

Figure 3-3 shows the main watercourses within North East Lincolnshire, split into Environment Agency designated main rivers and ordinary watercourses.

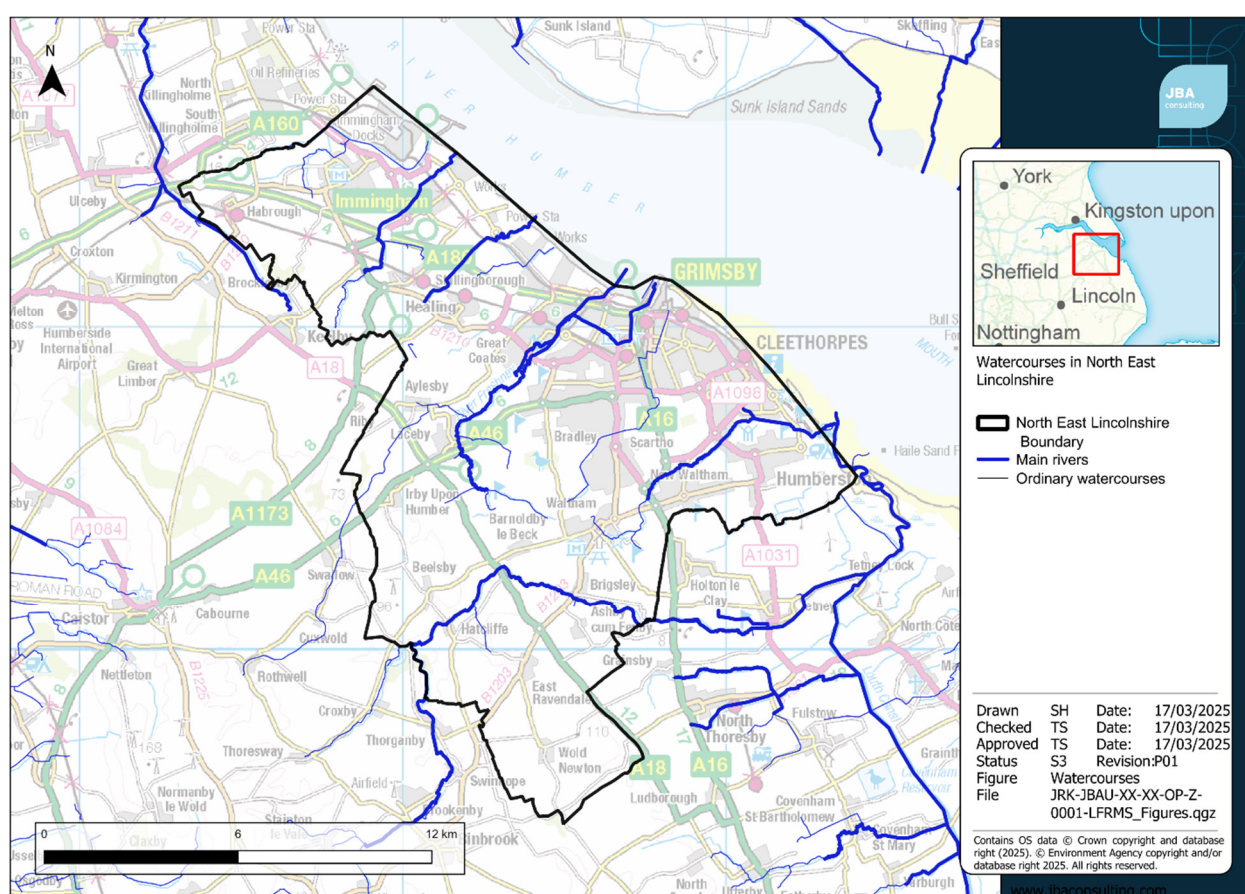


Figure 3-3: Main rivers and ordinary watercourses in North East Lincolnshire.

The Environment Agency Flood Map for Planning (FMfP) shows modelled flood extents, ignoring the presence of flood defences, for two events:

- Flood Zone 3 - land with greater than a 1% Annual Exceedance Probability (AEP) (1 in 100 chance of flooding each year) from rivers or a 0.5% AEP (1 in 200 chance of flooding each year) from the sea.

- Flood Zone 2 - land with greater than a 0.1% AEP (1 in 1000 chance of flooding each year) from rivers or the sea.

Figure 3-4 shows the FMfP extents across North East Lincolnshire.

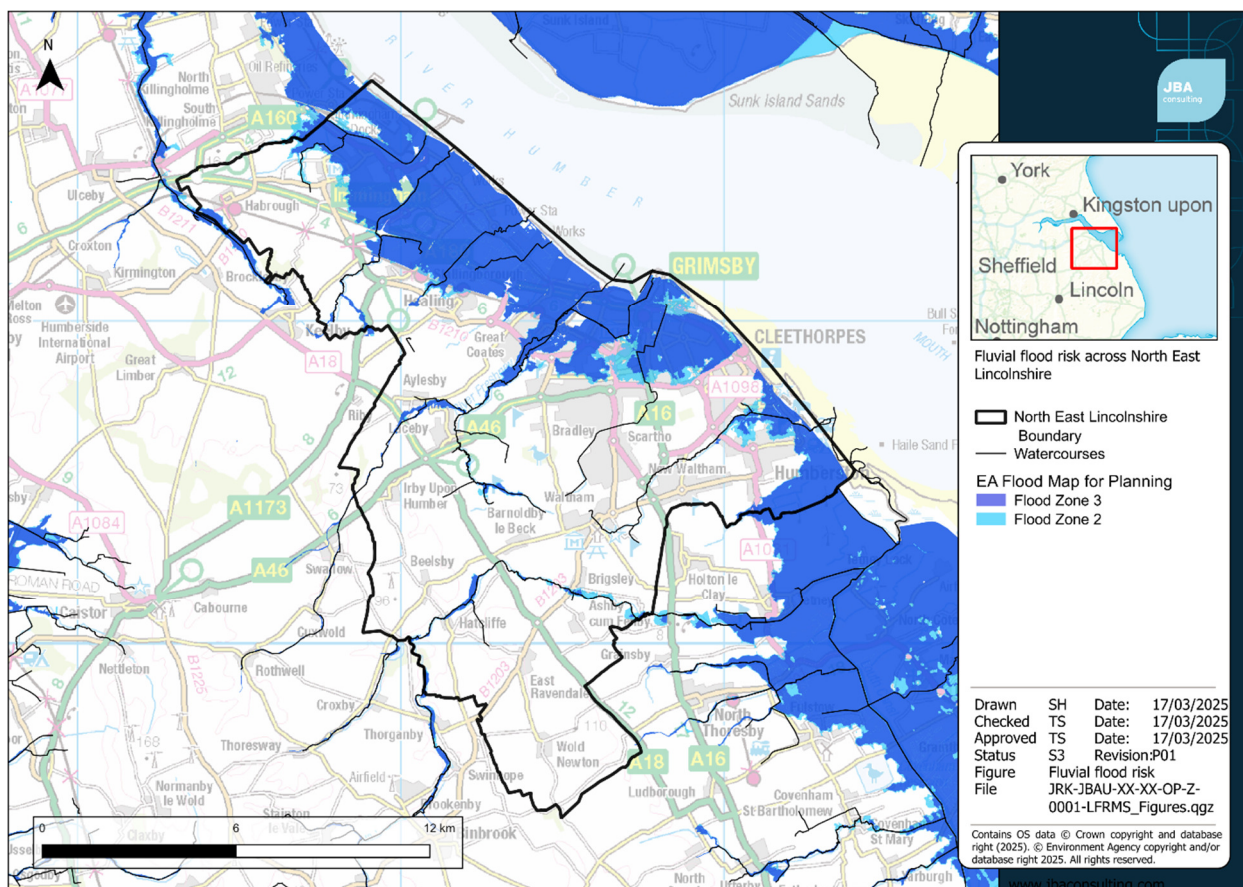


Figure 3-4: Environment Agency FMfP dataset showing fluvial flood risk across North East Lincolnshire.

Within the previous LFRMS, June 2007 was highlighted as a notable historic flood event with fluvial flooding affecting the settlements of Grimsby, Immingham, Waltham, Brigsley, Great Coates, and Stallingborough. The most notable fluvial flooding incident in 2007 was on the Willows Estate in Grimsby when the River Freshney overtopped its defences which combined with surface water and resulted in 186 properties experiencing internal flooding.

The Environment Agency Recorded Flood Outlines dataset does not have any records of fluvial flooding along main rivers within the borough since the publication of the previous Strategy in April 2015.

From the NELC Section 19 Flood Investigation report, developed following the flooding in November 2019, there were some reports of this prolonged heavy rainfall resulting in flooding as a result of the overtopping of ordinary watercourses. Three properties along Great Coates Road, Healing, flooded internally due to an ordinary watercourse which runs along the front boundary of the properties. The water first emerged where the watercourse becomes piped and there is a vertical screen which is subject to blockages. This

watercourse is under the riparian ownership of the residents of each property whose front boundary it runs along, with 13 different riparian owners. Two properties were also affected by external flooding along Bradley Road, Grimsby, as a result of overtopping of the ordinary watercourse which runs along the north boundary of the properties. The surface water runoff into the watercourse overwhelmed the outfall from the open watercourse into the piped section of watercourse causing the watercourse to overtop. Two chalets at Humberston Fitties were also flooded internally as a result of the ordinary watercourse which runs along the rear boundary of the two chalets overtopping as runoff levels exceeded capacity of the culverted section of the watercourse to the east of the chalets.

There was also a near-miss incident in Hatcliffe a couple of years ago, where water levels rose on Waithe Beck with a risk of overtopping into the village. However, the watercourse did not overtop on this occasion.

3.3.2 Surface water flooding

Intense rainfall, often of short duration, that is unable to soak into the ground or enter drainage systems can run quickly off land and result in local flooding. This can be a problem especially when the land is either extremely dry or wet. In developed areas, this flood water can be polluted with domestic sewage where foul sewers surcharge and overflow. Local topography and the built environment can have a strong influence on the direction and depth of flow. The design of development down to individual plot level can influence or exacerbate this. Overland flow paths therefore need to be taken into account when planning new developments.

There are strong interactions between surface water flooding and flooding from the sewer system. If drain covers become blocked or do not have enough capacity water will stay on the surface and flow to lower spots where it will pond and cause flooding. Sewer flooding is discussed further in Section 3.3.4. There is also interaction between surface water flooding and high tidal or fluvial levels, where drainage systems cannot discharge and cause flooding.

The causes of surface water flooding are what makes it difficult to predict. Whilst weather forecasts can predict that heavy rain could be due in a region it is impossible to predict this down to an individual street level which is where surface water usually causes problems.

The EA, working with LLFAs, produce mapping of surface water flood risk in their Risk of Flooding from Surface Water (RoFSW) dataset, shown in Figure 3-5. These maps do not make allowance for tide locking, where drainage networks cannot discharge into rivers or the sea due to high levels.

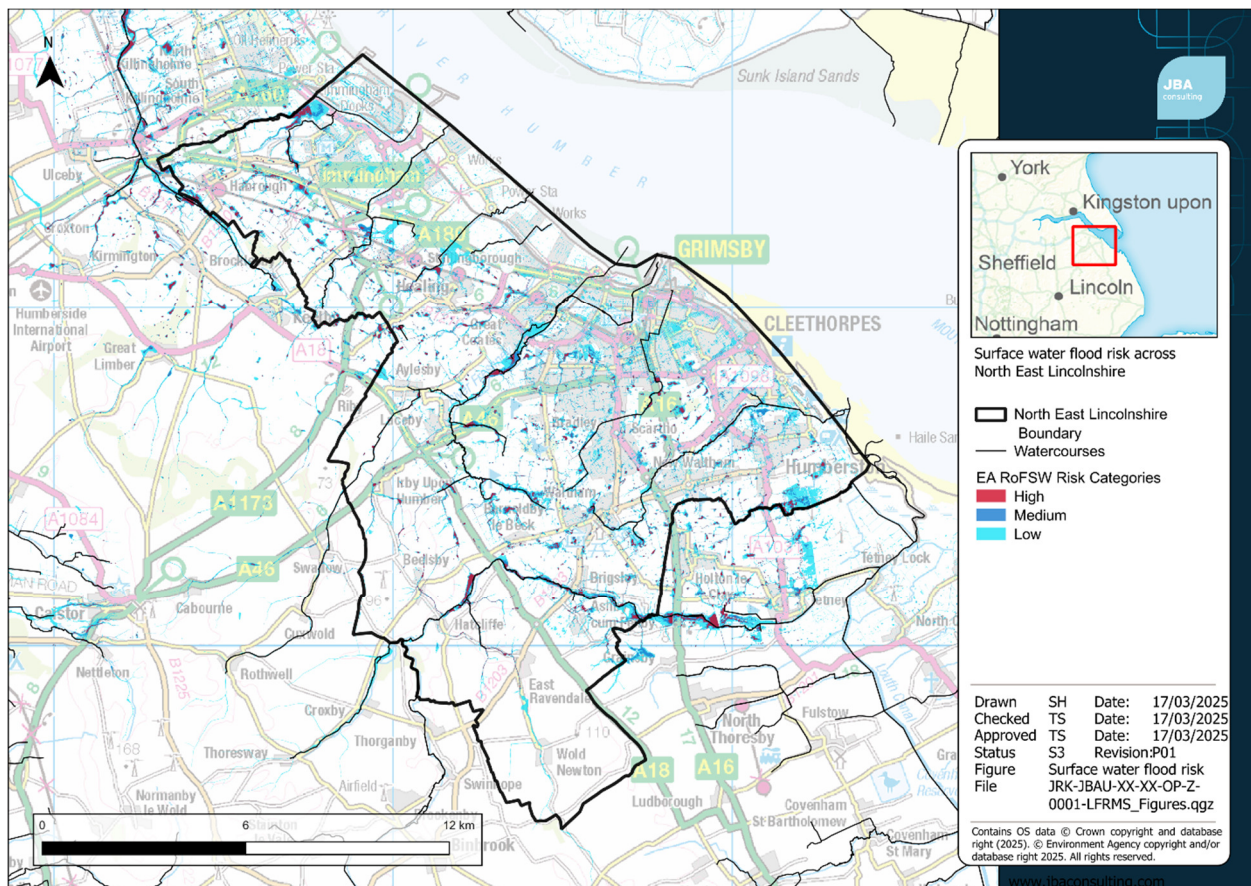


Figure 3-5: RoFSW mapping showing surface water flood risk across North East Lincolnshire.

Table 3-1 below describes the categories used in the national RoFSW mapping.

Table 3-1: RoFSW risk categories.

Category	Definition
High	Flooding occurring as a result of rainfall with a greater than 1 in 30 chance in any given year (annual probability of flooding 3.3%).
Medium	Flooding occurring as a result of rainfall of between 1 in 100 (1%) and 1 in 30 (3.3%) chance in any given year.
Low	Flooding occurring as a result of rainfall of between 1 in 1,000 (0.1%) and 1 in 100 (1%) chance in any given year.

The mapping shows that surface water predominantly follows topographical flow paths of existing watercourses or dry valleys and can pond in low-lying areas. Whilst in a lot of cases the risk is confined to roads, there are notable prominent run-off flow routes around properties. There is significant risk shown across areas of the town of Grimsby.

The previous Strategy identified surface water flooding in Immingham in 2012 as a result of heavy rainfall. Extensive maintenance and repair works have been undertaken in this area and the risk has been reduced in some locations but remains high in a number of locations.

Since the publication of the previous Strategy there have been further surface water flooding events across the borough.

The Humber RBD FRMP identified approximately 20 properties in North East Lincolnshire affected by surface water flooding in August 2017 as a result of prolonged heavy rainfall. NELC published a Section 19 Flood Investigation report following this event which identified flooding in several areas:

- **Immingham** - 11 properties flooded internally as a result of a combination of overland surface water runoff and the surface water sewer system being overwhelmed. At least 10 properties would have been at risk of internal flooding should the rainfall have continued due to the surface water system being overwhelmed however mitigation measures installed by NELC and Anglian Water prevented internal flooding, including an overflow and anti-flood airbricks.
- **Habrough** - one property flooded internally and at least 12 properties are at risk of internal flooding with extensive external flooding reported due to the village's surface water drainage system being overwhelmed.
- **Grimsby** - several areas of Grimsby were affected with at least four properties flooded internally and several more affected by external flooding as a result of surface water runoff and overwhelming of the public sewerage systems in the borough.
- **Cleethorpes and Humberston** - at least 12 properties in North Sea Lane were affected by external flooding due to the surface water runoff from the adopted highway and private road. This area has also been subject to surface water flooding incidents in 2014, 2015, and 2016.

More recently, there was further surface water flooding in November 2019 due to prolonged heavy rainfall, after which NELC also published a Section 19 flood investigation report. Several areas were reported to experience flooding as a result of ordinary watercourses overtopping as a result of the surface water runoff into them exceeding the capacity of culverted sections of the watercourse. These are reported in the fluvial flooding section above. However, in Healing there was also external flooding to seven properties along Wells Road as a result of surface water runoff from the adjacent agricultural land catchment which slopes towards these properties.

In the village of Laceby there was also a flooding incident on the 6 September 2022 which heavy rainfall overwhelming the sewerage system resulting in surface water flooding. A significant contributing factor to this flooding was wrongly connected surface water drains. A total of 21 properties reported internal flooding and there were a further 23 reports of external flooding. The source of flooding was mostly reported as surface water flooding although five of the internally flooded properties reported the source of flooding to be a

combination of surface water flooding and surcharging of the foul water sewers. Sewer flooding is discussed further in Section 3.3.4.

3.3.3 Groundwater flooding

Groundwater flooding is caused by the emergence of water from beneath the ground, either at point or diffuse locations. The occurrence of groundwater flooding is usually local and unlike flooding from rivers, does not generally pose a significant risk to life due to the slow rate at which the water level rises. However, groundwater flooding can cause significant damage to property, especially in urban areas and can pose further risks to the environment and ground stability. It is most likely to occur in low-lying areas underlain by permeable rocks (aquifers) such as the extensive chalk that underlies North East Lincolnshire and the east part of North Lincolnshire. The water is under pressure in the chalk aquifer and finds any weaknesses in the overlying ground which are known locally as blow wells. Typically, the underground aquifers are recharged during the wetter winter period, however it usually takes a few months for the water to move through the rocks underground. Grimsby typically sees the groundwater levels peak in Spring/ Summer and most groundwater flooding is most likely in this time of the year. During very wet periods, rising water levels may lead to the flooding of normally dry land, as well as reactivating flow in 'bournes' which are intermittent streams that only flow for part of the time when groundwater levels are high.

Precise locations at risk of groundwater flooding are difficult to predict. Groundwater can potentially emerge anywhere throughout the borough, however within the majority of the area, approximately 10m of clay covers the aquifer, confining it below ground. There are parts of the borough more susceptible to groundwater flooding, mainly in Grimsby along the route of a medieval watercourse that ran through the town hundreds of years ago, from north to south towards Convamore Road, as far as Welsby Road. Figure 3-6 displays chalk aquifer vulnerability mapping data provided by NELC. This mapping shows areas where the major aquifer (Flamborough Chalk) is considered to be vulnerable from pollution incidents or pilling activities alongside locations known to have active groundwater springs where groundwater has previously emerged. Due to the presence of sands and gravels on the old riverbed, the soils are weaker and allow an easier route for the groundwater to emerge at the surface. Groundwater flood risk in Grimsby has been increasing over the last couple of decades, and climate change is likely to continue to increase this risk.

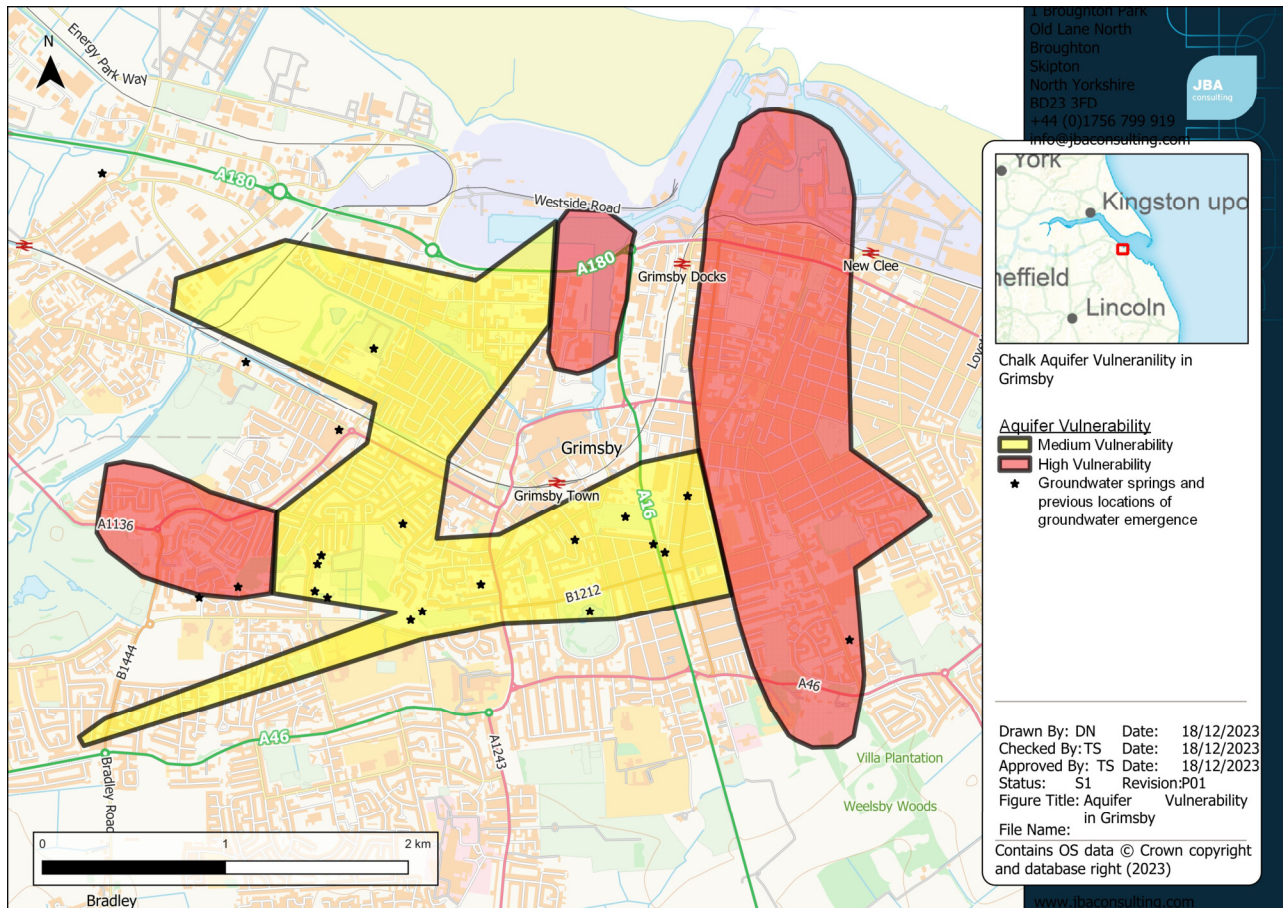


Figure 3-6- Chalk Aquifer Vulnerability and Groundwater Spring Locations in Grimsby.

3.3.4 Sewer flooding

In urban areas, rainwater is usually drained into surface water sewers or sewers containing both surface and wastewater known as 'combined sewers'.

In Grimsby and Cleethorpes there are large areas served by combined sewers, mostly in the older areas of the towns. More modern areas of development are generally served by separate systems but eventually discharging into combined sewers except where the surface water sewer is discharging to a watercourse. These locations tend to be closer to the edge of the developed areas where open watercourses are still available. Immingham is served entirely by separate systems.

Flooding can result when the sewer is overwhelmed by heavy rainfall, becomes blocked or is of inadequate capacity. When this happens to combined sewers, there is a high risk of land and property flooding with water contaminated with raw sewage. Likewise, flooding from surface water sewers, ordinary watercourses or main rivers can become contaminated as the flood waters can enter foul sewers via external domestic gullies. The other common method of cross contamination is wrongly connected surface water drains causing surcharging of foul sewers during a rainfall event at the same time as surface water sewers are surcharging and flooding.

Areas at known risk from sewer flooding due to surcharge during rainfall events identified in the previous Strategy are detailed below:

- Some parts of the Willows and Wybers Wood estates, Grimsby – combined system. There was further internal and external flooding of property here during three intense rainfall events in summer 2014.
- North part of Heneage Ward, Grimsby – combined system.
- South and north east parts of Yarborough Ward, Grimsby – combined system. The Ward was extensively affected by the summer floods of 2014 especially the north east part with a number of properties twice being internally flooded.
- Parts of Laceby – separate systems, surface water causing surcharge of the foul system.
- South part of the Humberston and New Waltham Ward - separate systems, surface water causing surcharge of the foul system.
- Scartho area of Grimsby – has been prone to sewer surcharge for the past 30 years due to increased development bringing out over loading of the core sewers. In recognition of the problem a planning embargo was put in place by Grimsby Borough Council until 1996. Attenuation was required by the newly formed NELC from 1996 onwards. The Scartho area is also highlighted in the Catchment Flood Management Plan as being at risk.
- East area of Park Ward – combined system. Some properties were internally flooded on two occasions during the floods of summer 2014.
- The south west part of West Marsh Ward - combined system. Some properties were internally flooded on two occasions during the floods of summer 2014.

The town of Grimsby suffers from a high risk of surface water flooding, due to the reliance on an aging combined sewerage network. Due to the limited capacity within the sewer network, the expansion of the town draining more roads and properties into the existing sewers, the increase in rainfall intensity and frequency due to climate change, the risk of flooding is set to increase significantly over time. Other issues affecting the performance of the sewerage network are groundwater ingress and land drainage/rural catchment runoff. The Humber RBD FRMP reported that Grimsby has experienced widespread flooding incidents on five occasions: June 2016, August 2017, August 2019, November 2019, and August 2020.

The town of Immingham has separate sewerage systems but has areas at high risk of surface water flooding with a number of historical flooding events including 2007 and 2012. Extensive maintenance and repair works were undertaken in the aftermath of these events and the risk was reduced in some locations, but it remains high in a number of locations.

Since the publication of the previous Strategy, there have been incidences of sewer flooding across the borough. In August 2017 there were several properties flooded as a result of prolonged heavy rainfall overwhelming existing sewerage systems and resulting in surface water flooding. This was discussed in more detail in Section 3.3.2. In the village of Laceby there was also a flooding incident on the 6 September 2022 with heavy rainfall

overwhelming the sewerage system resulting in surface water flooding. This was also discussed in more detail in Section 3.3.2.

3.3.5 Coastal flooding

The onset of flooding from the sea can be extremely rapid. Deep, fast-flowing water can create an extreme hazard. The severity of such flooding will depend on a number of factors, often in combination: the height of tides; weather systems (including storm surge); wind and wave conditions and topography. The standard of the sea defences, i.e. condition and height, will also impact if an area is to flood and to what extent. Currently it is a breach of the sea defences which has the possibility to cause the most severe flooding but with the predicted sea level rise over the next 100 years the consequences of defence overtopping will gradually worsen. If no defence improvements are made both of these scenarios become more likely when taking climate change into account.

The most serious tidal surge in recent times was in December 2013, where businesses on the sea front and at Immingham docks were affected by coastal flooding. On this occasion, no residential properties were affected.

Coastal flood risk is represented within the Environment Agency's FMfP, shown in Figure 3-4. However, it should be noted that this represents a worst-case scenario as it does not take account of any flood defences along the coast. There is a project underway to update the EAs Coastal Hazard mapping, with new outputs being used when available to better inform understanding of coastal flooding.

The SFRA (2022) for the borough contains further information on coastal flood risk and provides mapping showing the consequences of breaches in the flood defences. The SFRA is available on the NELC website, [here](#)¹⁷.

North East Lincolnshire falls within the Flamborough Head to Gibraltar Point Shoreline Management Plan. The management policy for the whole frontage is currently Hold the Line. Most of the borough coastline is within the East Immingham to Cleethorpes policy unit whilst the southern section of the coastline is within the Humberston Fitties policy unit.

The coastline of North East Lincolnshire is split into four regions, with responsibility split between three organisations:

- Protection from the sea along the northern length (Immingham to Grimsby) is by way of a concrete sea wall, maintained by the Environment Agency.
- ABP are responsible for the sea walls around their land at Immingham and Grimsby Docks which is offered by concrete sheet piled walls, concrete revetment walls topped with rock filled gabion baskets and lock gates to control levels within both the Royal and Fish Docks. Both lock structures are protected by an external flood gate.

¹⁷ <https://www.nelincs.gov.uk/planning-and-building-control/planning-policy/the-local-plan/local-plan-background-information/strategic-flood-risk-assessment/>

- The length from Grimsby Dock to Cleethorpes promenade is a concrete sea wall also maintained by the Environment Agency. This wall was built in the late 1970s to replace the sea wall destroyed by the tidal surges of 1976.
- The North and Central Promenades and Kingsway of Cleethorpes are maintained by NELC by way of a concrete sea wall, with timber groynes controlling the sand levels of the amenity beaches. In 2017, a new rock armour groyne, the Terminal Groyne, was constructed at the north end of the North Promenade to increase sand levels, thereby providing greater protection to the sea wall.
- The section between the Humberston Fitties and the Cleethorpes Leisure Centre is protected by a sea defence embankment which is the responsibility of the EA.
- To the south of this, Humberston Fitties is protected by a coastal embankment supported by a rock filled gabion toe which forms the front line of the sea defences. This embankment is the responsibility of NELC and lies in front of the strategic Environment Agency flood defence embankment. These two defences work in conjunction with each other. The majority of the chalets on the Fitties lie between the two embankments.

The effects of sea level rise and coastal flooding can also impact on fluvial flooding from watercourses with a tidal outfall, as the occurrence and duration of tide locking will be increased. Watercourses in the borough that might be affected are Buck Beck, New Cut Drain, Old Fleet Drain, Habrough Marsh Drain, and Stallingborough North Beck. Potential sea level rise estimates are discussed further in Section 3.3.7.

3.3.6 Recent mitigation works

Recently, the Grimsby Surface Water Flood Alleviation Study has commenced which will develop an Outline Business Case to secure Flood Defence Grant-in-Aid (FDGiA) funding for mitigation works. This Outline Business Case will make a strategic assessment on surface water flood risks across the Pyewipe catchment.

Also underway, is the Doncaster, Immingham and Grimsby SuDS Retrofit Innovation Funding project which will entail the retrofit of sustainable drainage measures in parts of Grimsby and Immingham. More information about this project can be found on the Environment Agency website [here](#)¹⁸.

In addition to the above scheme, a groundwater project is underway across the Greater Lincolnshire region, with schemes being developed throughout Lincolnshire. In Grimsby, the project is looking to create a new wetland to manage groundwater flood risk to properties, as well as creating new habitat, capturing carbon and providing a new park for the community to enjoy. More information on Project Groundwater (Greater Lincolnshire) is available on the Environment Agency website [here](#)¹⁹.

¹⁸ <https://engageenvironmentagency.uk.engagementhq.com/nel014-dig>

¹⁹ <https://engageenvironmentagency.uk.engagementhq.com/lin011-groundwater>

Significant works were undertaken across the borough as a result of historic flooding events, particularly the summer floods of 2007. These works include:

- Waltham - construction of an earth flood defence embankment protecting the properties that flooded in June 2007.
- North Immingham - programme of works to restore the land drainage systems to the appropriate standard, enhanced by overflow swales and channel realignment.
- Habrough - a new surface water drainage system was installed along West End Road along with extensive cleaning and repairs to the existing village surface water drainage systems.
- Humberston - maintenance of land drainage and the construction of a flood storage area around Coniston Crescent and replacement of an under-capacity surface water public sewer in Humberston Avenue. Replacement of part of the Humberston Fitties flood defences in 2010/2011.
- Installation of a new surface water drainage system and property level resilience measures around Willingham Street in Grimsby.
- Installation of a new surface water drain to protect low-lying property in St. Nicholas Drive, Grimsby.
- Extensive maintenance and drainage improvement works at Saltings Allotments in Grimsby. This was to protect adjacent property against the effects of groundwater flooding.
- Strengthening of the stretch of sea wall between Grimsby and Immingham since publication of the Humber Flood Risk management Strategy 2008.
- Improvements to sea defences around the Grimsby Docks.
- Replacement of groyne at the beach at Cleethorpes.

3.3.7 Impacts of climate change

Climate change projections show an increased chance of warmer, wetter winters and hotter, drier summers with a higher likelihood of more frequent and intense rainfall. This is likely to make severe flooding happen more often and impact all sources of flood risk within the borough.

The Climate Change Act 2008 creates a legal requirement for the UK to put in place measures to adapt to climate change and to reduce carbon emissions by at least 80% below 1990 levels by 2050. This was updated in June 2019 under the Climate Change Act 2008 (2050 Target Amendment) Order to a 100% reduction (or net zero) by 2050.

The full Act is available on the government website [here](https://www.legislation.gov.uk/ukpga/2008/27/contents)²⁰ and the amendment order is available on the government website [here](https://www.legislation.gov.uk/ukdsi/2019/9780111187654)²¹.

Since the publication of the previous Strategy, the government published new UK Climate Projections in 2018 (UKCP18). Following this, the Environment Agency published updated

²⁰ <https://www.legislation.gov.uk/ukpga/2008/27/contents>

²¹ <https://www.legislation.gov.uk/ukdsi/2019/9780111187654>

climate change allowances for peak river flow (in July 2021) and rainfall (May 2022). These allowances have been assessed at a management catchment level, rather than by RBD as previously assessed. North East Lincolnshire falls within the Louth Grimsby and Ancholme Management Catchment. Within this Management Catchment, total potential change anticipated for the '2050s' category is:

- Between -1% and 19% for peak river flow allowances (2040-2069).
- Between 20% and 40% for peak rainfall allowances (2022-2060).

UKCP18 also provide projections of relative mean sea level rise around the UK coast. These are set out by RBD; North East Lincolnshire falls within the Humber RBD.

The cumulative expected rise in mean sea level along the coastline by 2125 is predicted between 1.15m and 1.55m for the Humber RBD. As sea levels rise, it means that coastal flooding will become more frequent as higher water levels and storms will be seen more often.

Climate change will be taken account of in any flood risk management works or resilience projects that are carried out. This Strategy cannot specify which climate change scenarios will be used as different scenarios and time periods will apply to different situations. This also allows for any new predictions to be considered. Further information on applying climate change allowances can be found on the government website [here](#)²².

3.4 Community questionnaire

A community questionnaire was undertaken across the North East Lincolnshire area within the preparation of this LFRMS, to gather information on flood history, key areas and mechanisms of flooding, and existing community resilience to flood events. 109 responses were received, mostly from the public but also from local businesses and councillors/parish council members.

The geographic distribution of responses by postcode is shown in Figure 3-7.

²² <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

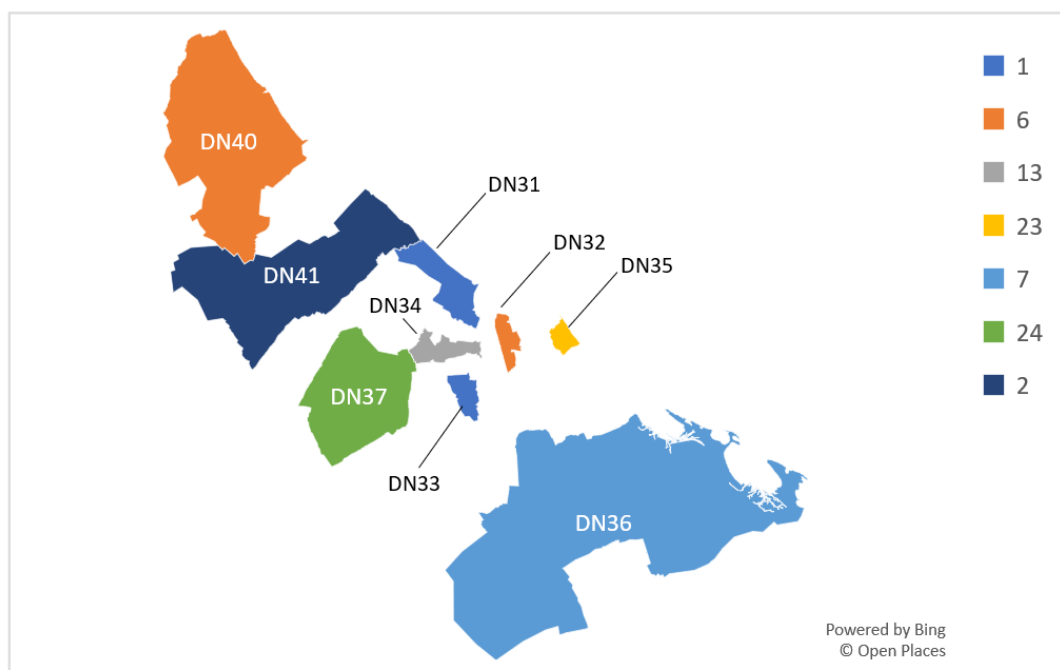


Figure 3-7 Distribution of responses across North East Lincolnshire.

Of the 109 responses, 43 said they had experienced flooding in the vicinity of their property or occupancy. Figure 3-8 shows the receptors reported to be affected by flooding. The main receptors affected were reported to be gardens, driveways, and roads, although 10 respondents reported internal flooding at their property. Figure 3-9 shows where respondents reported that the flooding originated from. The main sources are shown to be overland flows due to blocked drains or capacity exceedance, and surface water flooding as a result of rainfall. There were also reports of fluvial flooding, groundwater flooding, and flooding as a result of foul sewers overflowing.

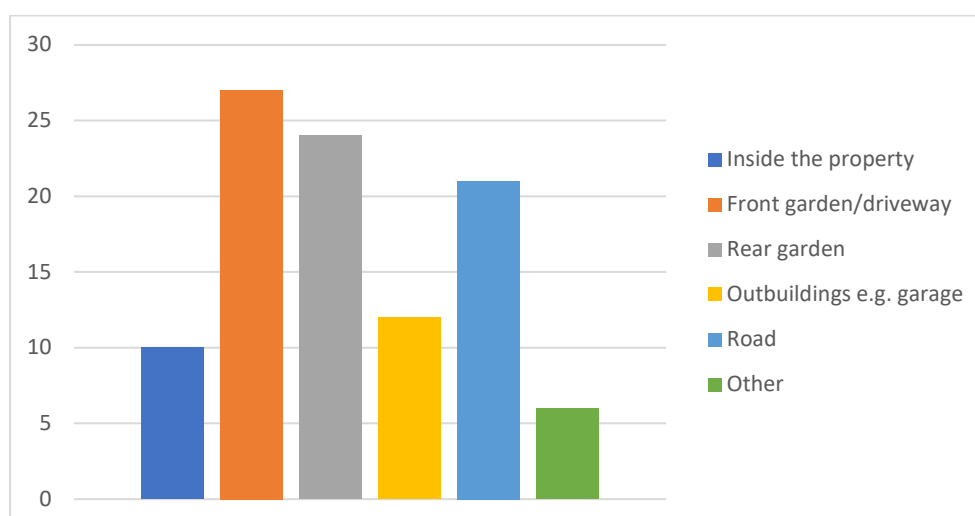


Figure 3-8: Receptors affected by flooding across North East Lincolnshire.

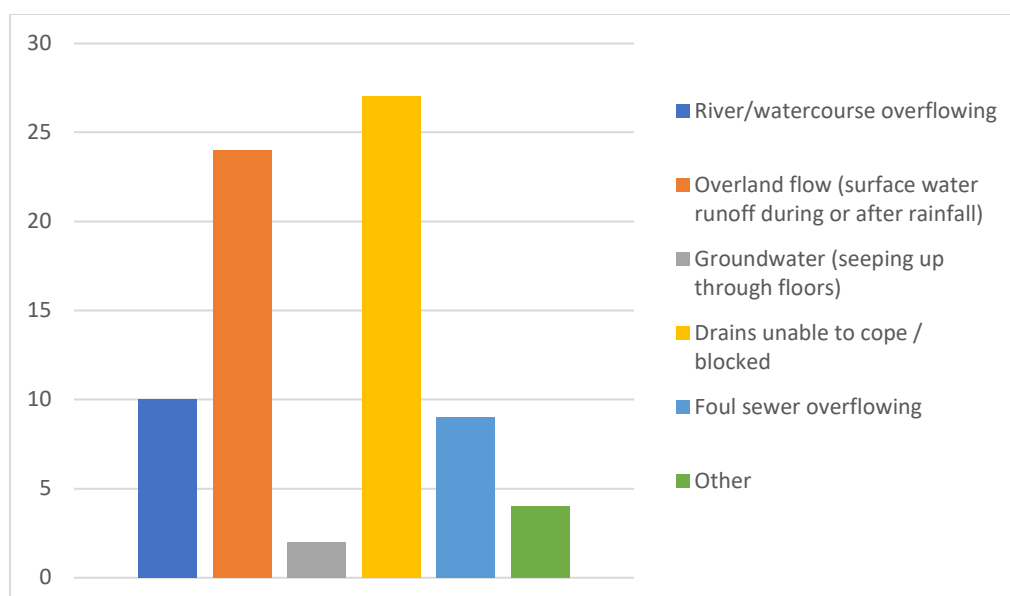


Figure 3-9: Sources of flooding within the vicinity of respondents' properties reported across North East Lincolnshire.

Respondents were then asked about flooding issues more widely across North East Lincolnshire. The largest recorded source of flooding was fluvial flooding from rivers/watercourses, closely followed by blocked drains/exceedance of drainage capacity and surface water flooding due to rainfall. The sources of flooding are shown in Figure 3-10.

Figure 3-11 shows the recurrence of flooding reported. The recurrence was quite varied, with the most common response 'Rare, but recurrent', however there were nine reports of annual flooding, and eight reports of flooding occurring more frequently than annually. Eight respondents reported an isolated flooding event.

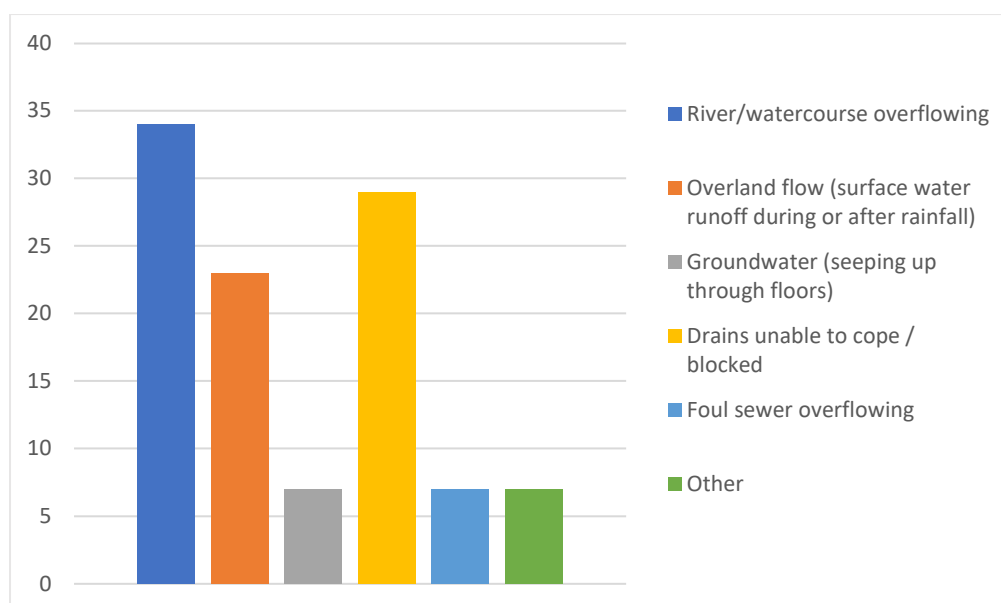


Figure 3-10: Sources of flooding reported across North East Lincolnshire.

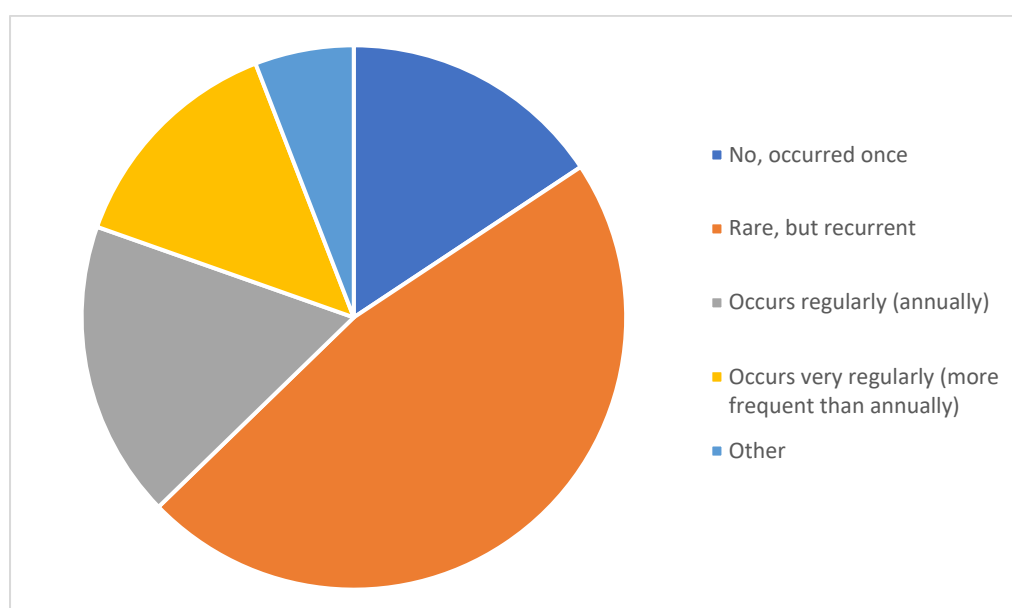


Figure 3-11: Recurrence of flooding reported across North East Lincolnshire.

Respondents were asked about any flood plans in the area. Only 18% of respondents were aware of any flood plans in their area. Descriptions showed these plans are very varied and include:

- Phone calls from the councillors warning of severe weather events and advice on evacuation locations,
- Increasing resilience through moving vehicles and other equipment out of the area at flood risk,
- Business Continuity Plans,

- Flood sirens in the event of sea encroachment (these have been removed, homeowners should instead sign up to Environment Agency flood warnings. More information on how to do this can be accessed on the Environment Agency website [here](#)²³.),
- Formal flood defences and property level defences in the form of sandbags,
- Poster on bus shelter, and
- Escape plans made by neighbourhood watch.

3.5 Hotspots

In order to understand the key areas of flood risk across North East Lincolnshire within this Strategy, hotspots were identified for both surface water and rivers and sea.

It is important to understand the risk of flooding from all sources using the latest mapping data, alongside the National Receptor Dataset to identify areas at higher risk from flooding.

The outputs from this analysis form the basis of understanding flood risk across North East Lincolnshire and were then taken into consideration when planning measures and actions for the LFRMS.

3.5.1 FRISM screening

North East Lincolnshire was divided into grid squares measuring 500m x 500m. This produced a total of 894 tiles.

Locations of residential and non-residential buildings were derived from a combination of Mastermap buildings and the National Receptor Dataset, which provided information for the following categories of infrastructure across North East Lincolnshire:

- Critical Infrastructure.
- Medical.
- Pharmacies.
- GP Surgeries.
- Colleges.
- Schools.
- Preschools.
- Rest Centres.
- Leisure & Amusement.
- Sub Stations.
- Telephone Exchanges.
- Shopping Centres.
- Campsites.

²³ <https://www.gov.uk/sign-up-for-flood-warnings>

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Finally, the following layers were used to determine flood risk:

- FMfP, Flood Zone 2 (FZ2).
- FMfP, Flood Zone 3 (FZ3).
- Risk of Flooding due to Surface Water, 3.3%AEP (30 year) (RoFSW30).
- Risk of Flooding due to Surface Water, 1%AEP (100 year) (RoFSW100).
- Risk of Flooding due to Surface Water, 0.1%AEP (1000 year) (RoFSW1000).

The grid squares, infrastructure data and flood risk mapping were then processed through FRISM, an internal JBA Geographic Information System (GIS) package that computes a range of flood risk metrics based on flood and receptor datasets. This generated the infrastructure affected at each flood scenario within each grid square.

The results of this FRISM exercise separated the grid squares across North East Lincolnshire in to high, medium and low categories of flood risk, the thresholds of which were set proportionately across the authority area.

It should be noted that the Environment Agency published their updated National Flood Risk Assessment 2 (NaFRA2) surface water mapping in January 2025. This data was not available during the preparation of the Strategy. The new data was reviewed against the findings of the risk assessment and was not found to have had an impact on any of the hotspots, which were based on a combination of flood risk mapping and local knowledge. However, any future studies which follow on from this Strategy should refer to the latest available data.

3.5.2 Community flood points

Using the outputs from the FRISM screening, the points of flooding identified from the community questionnaire were plotted using GIS (where information was sufficient to identify the location). This both highlighted additional areas to be included within the hotspots and accorded with the hotspots generated through the screening exercise.

3.5.3 Local flood risk knowledge

Following the information from the FRISM outputs and the flood points identified through the community questionnaire, NELC LLFA ratified the results to form hotspot areas applying local knowledge and categorising by flood mechanism. This has produced the finalised hotspots for both surface water and rivers and sea, set out in detail in Section 3.6.

3.6 Results

The results below show groups of grid squares ('hotspots') that have been identified at high risk from flooding through the FRISM screening, community questionnaire and local knowledge.

'High risk' for the purposes of this hotspot exercise is defined as:

- more than 40 properties within the grid square within 1% AEP RoFSW extent.
- more than 226 properties within the grid square within Flood Zone 3.
- These thresholds have been calculated by analysing the highest quartile of properties at risk from each source of flooding across North East Lincolnshire.

3.6.1 Surface water hotspots

The hotspots across North East Lincolnshire identified for surface water flooding are shown in Figure 3-12 below and listed in Table 3-2. Figure 3-12 also includes point data of reported flooding through the community questionnaire. These hotspots also take account of areas identified by NELC to be at high risk of groundwater flooding.

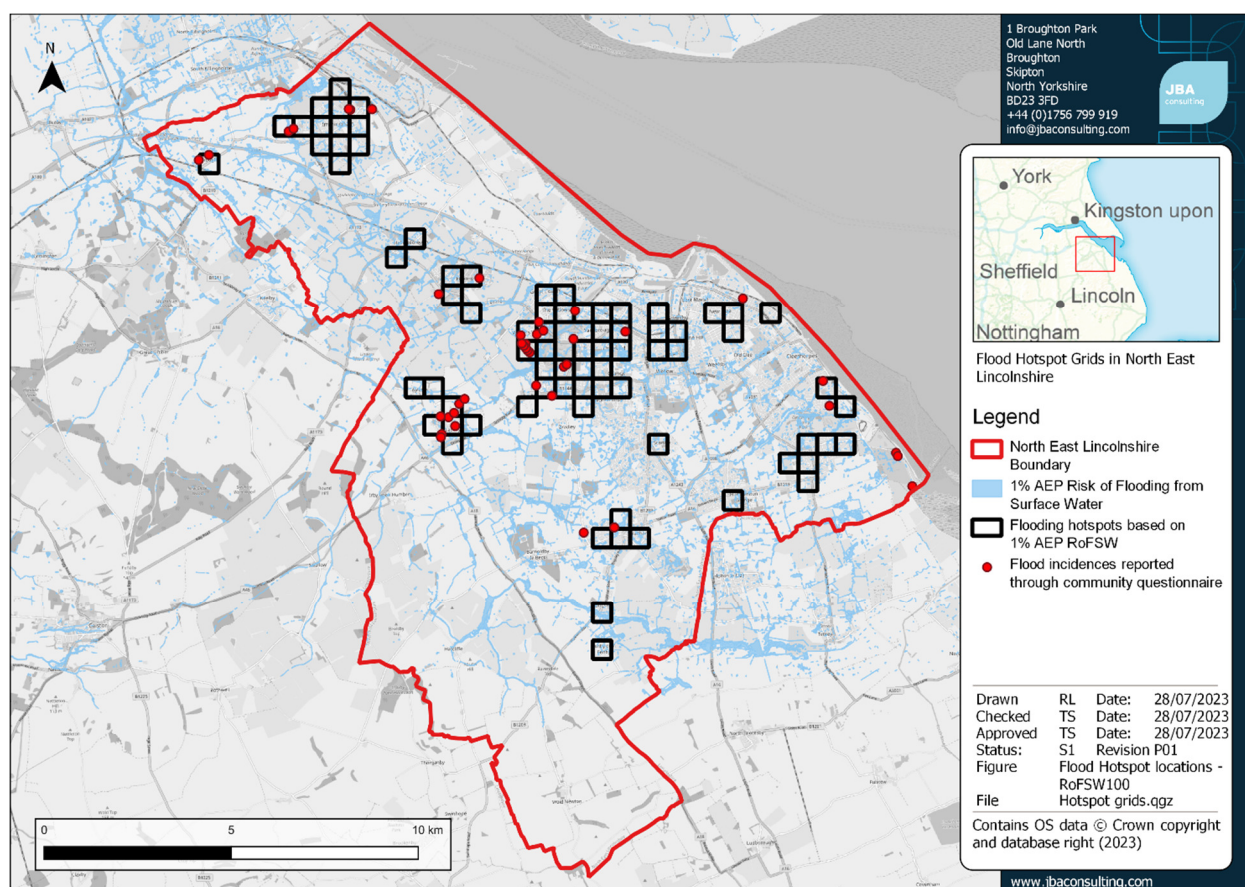


Figure 3-12: Surface water and groundwater hotspots in North East Lincolnshire.

Table 3-2: Surface water hotspots by ward.

Ward	Hotspot
Immingham Ward	Habrough
Immingham Ward	Immingham West
Immingham Ward	Immingham East
Immingham Ward	Stallingborough

Ward	Hotspot
Wolds Ward	Healing
Wolds Ward	Laceby
Freshney Ward	Wybers Wood
Yarborough Ward, South Ward	Broadway
Park Ward	Grimsby
Sidney Sussex Ward	New Clee
Sidney Sussex Ward	Cleethorpes North
Haverstoe Ward	Cleethorpes South
Humberston and New Waltham Ward	Humberston
Humberston and New Waltham Ward	New Waltham
Waltham Ward	Waltham
Waltham Ward	Brigsley
Waltham Ward	Ashby cum Fenby
Scartho Ward	Scartho

3.6.2 Rivers and sea hotspots

The hotspots across North East Lincolnshire identified for river and sea flooding are shown in Figure 3-13 below and listed in Table 3-3: Rivers and sea hotspots. Figure 3-13 also includes point data of reported flooding through the community questionnaire.

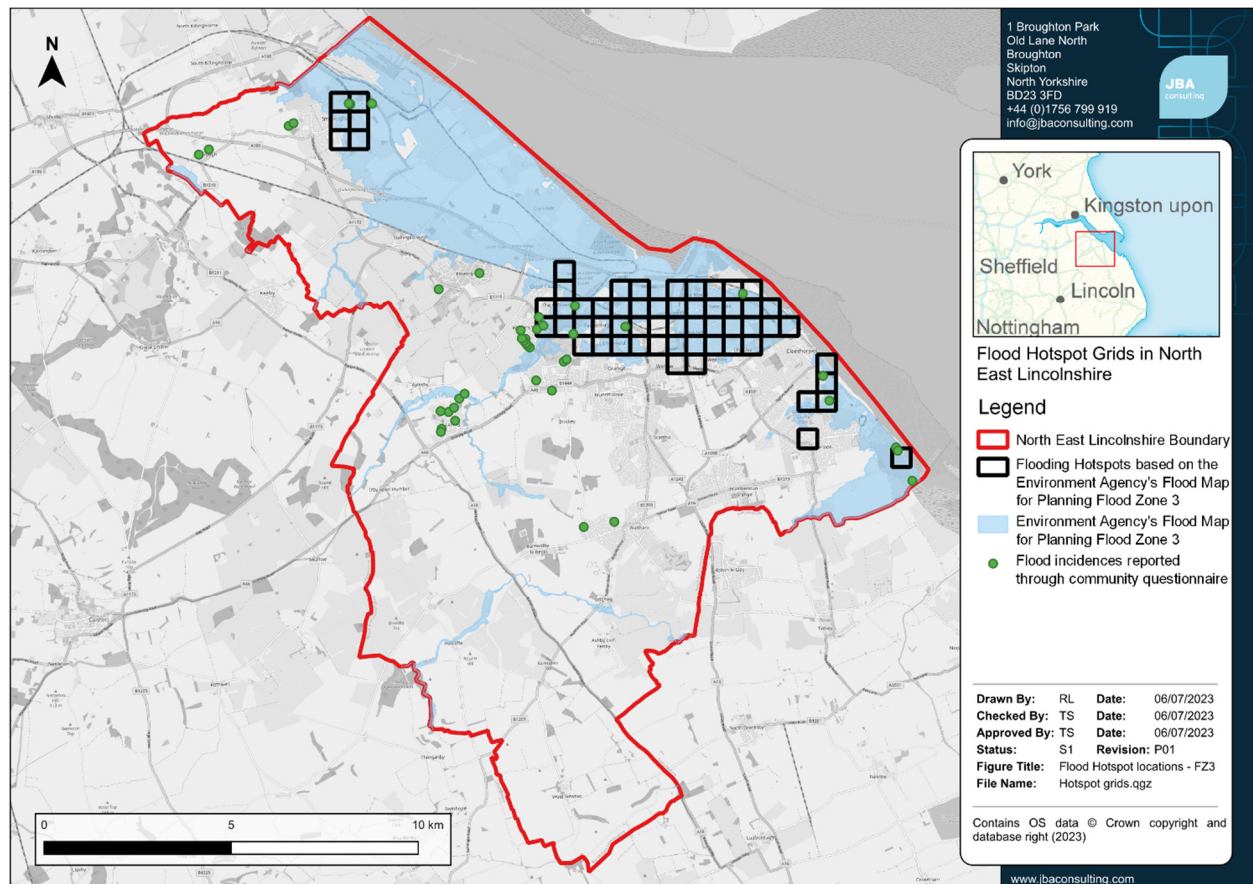


Figure 3-13: Rivers and sea hotspots in North East Lincolnshire.

Table 3-3: Rivers and sea hotspots.

Hotspot
Immingham
Cleethorpes and Grimsby
Cleethorpes Country Park
Humberston Fitties

3.6.3 Hotspots within the Local Flood Risk Management Strategy

These hotspots provide an overview of the key areas of flooding across North East Lincolnshire and an understanding of the distribution of flood risk issues. However, there will be other areas of flood risk management issues and mitigations which are not captured through this strategic level analysis. NELC LLFA continue to use a dynamic approach

across the borough to respond to and prevent flooding events, and flood risk activities are not limited to these hotspot areas.

Mitigation of flood risk in the areas identified as the 18 surface water hotspots and 4 rivers and sea hotspots will be captured through the objectives and measures of the Strategy.

4 Objectives and measures for managing flood risk

4.1 Overview

Objectives set within the LFRMS must align with the national FCERM strategy. NELC should work with others to set objectives that address multiple issues within communities. Objectives set should be SMART (Specific, Measurable, Achievable, Relevant and Time-Bound). The Objectives within this Strategy are set out in Section 4.3. Alongside each objective, measures are set out to define how these objectives will be met. The measures are strategic steps to be taken to address each objective and are detailed in Appendix A. Actions to help achieve the objectives and to address specific flood risk management issues in the identified hotspots and across the borough are detailed in Appendix B, the Action Plan.

4.2 Methodology

The following section sets out the steps undertaken to develop the objectives and SMART measures for this LFRMS. Progress on objectives outlined in the previous 2015 Strategy was considered, alongside aligning objectives to updated guidance (including but not limited to the national FCERM Strategy), consulting stakeholders to encourage collaborative working and wider benefits, and targeting the areas at highest risk from flooding across the borough. The process outlining how these objectives, measures and action plan were derived through the LFRMS is outlined in Figure 4-1 below.



Figure 4-1: Process of LFRMS objective development.

4.2.1 Literature review

The first stage in developing the objectives and measures was to undertake a literature review of relevant documentation, including the original LFRMS and the updated national FCERM Strategy. For each document, key outcomes and objectives were pulled out which were then used to inform the development of objectives within this Strategy.

The objectives in the original LFRMS were also reviewed to assessed to what extent they had been met, whether they should be carried forward into the updated Strategy, or whether they needed revising in light of new information or policy updates.

4.2.2 Community Questionnaire

A community questionnaire was undertaken across North East Lincolnshire to identify key areas and mechanisms of flooding, gather information on historic flood events and existing community flood resilience. A total of 109 responses were received.

4.2.3 Hotspot analysis

The hotspot analysis (detailed further in Sections 3.5 and 3.6 above) identified the areas at the most significant risk of fluvial and surface water flooding. This information was then used to inform the objective development to ensure that the objectives are targeting the areas at most significant risk. Potential flood risk management interventions specific to the hotspots identified in hotspot analysis are outlined in Appendix B alongside potential funding options and timescales.

4.2.4 Stakeholder workshop

Initial draft objectives and measures were discussed within a stakeholder workshop with representatives present from the following organisations:

- NELC LLFA.
- NELC Cabinet Portfolio Holder.
- North East Lindsey IDB.
- EA.
- Anglian Water.
- Lincolnshire Wildlife Trust.

This initiated discussions around the draft objectives and measures and allowed for feedback and opinions from different organisations. This collaborative working means that the objectives can address the priorities of different organisations and provide wider benefits.

4.3 Objectives

Climate Resilience Places

Working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change.

1. We will increase our skills, capabilities and understanding of local flood risk through investigations and continually improving data.
2. We will work with development planning to seek opportunities to improve resilience through new and existing development, and to encourage environmental net gain.
3. We will strive for sustainability in all aspects of flood risk management in order to meet NELC's goals of cutting carbon emissions to net zero by 2050.

Today's growth and infrastructure resilient in tomorrow's climate

Making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as infrastructure resilient to flooding and coastal change.

4. We will seek opportunities for innovation in flood risk management duties and schemes to adapt to a changing climate.
5. Plan and adapt to a changing climate through developing longer term adaptive approaches.

A nation ready to respond and adapt to flooding and coastal change

Ensuring local people understand their risk to flooding and coastal change, and know their responsibilities and how to take action.

6. We will build upon and improve existing resilience at a community level through increasing awareness and understanding of flood risk and working together to embed resilience in buildings and planning.
7. We will continue to review preparedness in responding to flood events and update accordingly through working with the Local Resilience Forum and communities so that communities and RMAs alike can better prepare and respond to flooding and coastal change.

5 Monitoring, review, and implementation

This section outlines the processes that NELC will put in place to implement, monitor, and review this Strategy. The Strategy has been developed to support understanding and management of local flood risk in the borough over the next five to ten years and therefore will require periodic review to so that it remains current and in line with local and national policy, changes in climate change science and local flood risk.

5.1 Implementation and monitoring

This Strategy sets out the roles, responsibilities, objectives, and priorities of RMAs across North East Lincolnshire. In partnership with other RMAs and key stakeholders, NELC will use this Strategy to guide their approach to local flooding issues across the borough.

The overarching objective of the Strategy is to reduce local flood risk to residents, businesses, key infrastructure, and communities by increasing resilience in the communities. This will be achieved through the implementation of the Flood Risk Action Plan (see Appendix B). The action plan focuses on the short to medium-term measures identified rather than the longer-term strategic measures. The successful implementation of the Strategy will be influenced by external factors such as funding and resource availability. Potential options for funding opportunities are discussed further in Section 5.2.

In some areas, NELC will look to carry out improvements to flood defence infrastructure to address known local flooding problems from surface water, ordinary watercourses and groundwater. In other areas, the approach may be through the use of early flood warnings and local resilience measures. In these areas, NELC will act as enablers to help communities take action to help themselves and carry out their own riparian responsibilities.

NELC will also seek to reduce flood risk through other actions such as planning and development control, working with landowners and land managers, progressing investment and increasing resilience. They will seek to retain and develop the expertise already present in NELC as well as increasing capacity where required. Through collaborative working and addressing issues at the appropriate authority level, they will make the best use of the resources and funding available. Early engagement with landowners and land managers will be key to the successful implementation of this Strategy.

All applicable RMAs are committed to delivering the objectives of the Flood Risk Action Plan to reduce flood risk to the communities across the borough. NELC, as the LLFA, will continue to take responsibility for implementing the Strategy and will lead on developing and continuing existing relationships with partners and stakeholders.

New information, guidance and the occurrence of future flood events will mean the Strategy may require updating from time to time. Regular reviews of progress against the Flood Risk Action Plan will be conducted so that NELC can monitor the latest flood risk situation and alter actions as and when required.

5.2 Funding opportunities

Funding opportunities for FCERM projects will depend on the type of project and the potential benefits it will offer. The sections below detail some of the potential options for funding FCERM projects but are not exhaustive.

Additionally, NELC will continually seek new sources of funding to support flood risk management objectives.

5.2.1 Grant-in-Aid

In March 2020, the government announced that the six-year investment programme beginning in 2021/22 would provide a capital budget of £5.2 billion for flood defences.

The Environment Agency gets Grant-in-Aid (GiA) funding from the government. Some of this is spent directly on FCERM activities but RMAs can also apply to the Environment Agency for GiA funding for local projects. Funding is assessed based on the public benefits of the project. Often projects will qualify for part-funding which can then be topped up through partnership funding from other, local sources.

5.2.2 Local Levy - Regional Flood and Coastal Committees

The local levy can fund both traditional and natural flood risk management projects, which are not funded by GiA. Funds are raised by a levy on local authorities and projects are selected by committee, appointed from the LLFA and EA. North East Lincolnshire lies within the Anglian Northern RFCC.

5.2.3 Community Infrastructure Levy

The Community Infrastructure Levy is a charge which can be levied by local authorities on the new development in their area and then the funding raised can be used for projects relating to a range of infrastructure, including flood defences.

5.3 Review

The Local Strategy will be reviewed and updated as and when required, specifically when there is a material change to legislation, the National Strategy or the approach to flood risk in the district which may not be compatible to the Local Strategy. The Flood Risk Action Plan will be reviewed annually to check that the actions continue to be appropriate and achievable. It should be noted that this Strategy represents the current situation (at the time of publishing) based on the current evidence base.

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