Local Flood Risk Management

CITY OF YORK COUNCIL

City of York Council
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Contents

Glossary and terminology

Acronym	Definition
AMP	Asset Management Plan (Yorkshire Water Services)
Defra	Department for Environment, Food and Rural Affairs
CYC	City of York Council
EA	Environment Agency
FDGiA	Flood Defence Grant in Aid
FMfSW	Flood Map for Surface Water
FWMA	Flood and Water Management Act 2010
FRMP	Flood Risk Management Plan
IDB	Internal Drainage Board
LDF	Local Development Framework
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
LRF	Local Resilience Forum
NaFRA2	National Flood Risk Assessment
NbS	Nature Based Solutions
NFM	Natural Flood Risk Management
NPPF	National Planning Policy Framework
NYLRF	North Yorkshire Local Resilience Forum

Acronym	Definition
PFR	Property Flood Resilience
PR24	Price Review 24
RBD	River Basin District
RMAs	Risk Management Authorities
RoFSW	Risk of Flooding from Surface Water
SEA	Strategic Environment Assessment
SFRA	Strategic Flood Risk Assessment
SuDS	Sustainable Drainage Systems
SWMP	Surface Water Management Plan
YNYCA	York and North Yorkshire Combined Authority
YWS	Yorkshire Water Services
YRFCC	Yorkshire Regional Flood and Coastal Committee

Term	Definition
Annual Exceedance Probability (AEP)	The chance of a flood of a given size happening in any one year e.g. a flood with a 1% AEP will happen, on average, once every 100 years.
Catchment	A catchment is the total area draining into a river or other drainage system.
Chance of flooding	The chance of flooding is used to describe the frequency of a flood event occurring in any given year, for example. there is a 1 in 100 chance of

Term	Definition
	flooding in this location in any given year. This can also be described as an annual probability, for example. a 1% annual probability of flooding in any given year. (See AEP).
Climate Change	A long-term change in weather patterns, climate change is predicted to produce more frequent and severe rainfall events.
Exceedance flows	Excess flow that appears on the surface once the capacity of the underground drainage system is exceeded.
Floods Directive (2007)	The EU Floods Directive is designed to help Member States prevent and limit the impact of floods on people, property and the environment.
Fluvial (River) Flooding	Flooding that occurs when a river or stream cannot cope with the water draining into it from the surrounding land (catchment).
Groundwater flooding	Flooding that occurs when levels of water in the ground rise above the surface. It is most likely to happen in areas where the ground contains aquifers. These are permeable rocks that water can soak into or pass through.
Local Flood Risk	The risk of flooding arising from ordinary watercourses, surface water and groundwater.
Main River	Main Rivers are watercourses marked as such on a main river map. Generally main rivers are larger streams or rivers but can be smaller watercourses in critical locations. The Environment Agency has powers to manage such watercourses.
Ordinary watercourse	An ordinary watercourse is any other river, stream, ditch, cut, sluice, dyke or non-public sewer which is

Term	Definition
	not a Main River. The local authority or IDB has powers to manage such watercourses.
Pluvial (surface water) flooding	Flooding that occurs when rainwater does not drain away through the normal drainage system or soak into the ground but lies on or flows over the ground instead. This type of flooding can be difficult to predict and pinpoint, much more so than river or coastal flooding.
Riparian owners	A riparian owner is someone who owns land or property adjacent to a watercourse. Riparian owners have a duty to maintain the watercourse and allow flow to pass through their land freely.
Sewer flooding	Flooding that occurs when sewers are overwhelmed by heavy rainfall or when they become blocked. The chance of flooding depends on the capacity of the local sewerage system and amount of rain that falls. Land and property can be flooded with water contaminated with raw sewage as a result. Rivers can also become polluted by sewers that overflow.
Sustainable Drainage Systems (SuDS)	A sequence of management practices and control measures designed to mimic natural drainage processes by allowing rainfall to infiltrate and by attenuating and conveying surface water runoff slowly, compared to conventional drainage.
Water Framework Directive (2000)	The European Water Framework Directive (WFD) became part of UK law in December 2003. It requires member states to plan and deliver a better water environment, focussing on ecology. The WFD sets environmental and ecological objectives for all inland and coastal waters in the UK. The EA are the lead organisation for WFD.

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Ainsty (2008), Foss (2008) & Ouse and Derwent Internal Drainage Boards

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Kyle & Upper Ouse Internal Drainage Board

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1. Policy framework

1.1 Background to the strategy

- Flood risk is predicted to increase due to climate change and development needs to be managed to ensure that risk is not increased. Flooding is a natural process and while it is not technically, economically or environmentally feasible to prevent all flooding, an adaptive and risk-based approach targets resources to those areas where they can have the most beneficial effect in reducing its impact.

- Several bodies known as Risk Management Authoritieshave responsibility for flood risk management and historically it has been difficult to take a coordinated or strategic approach in its management, particularly at a local level.

- Following the flooding of 2007, which affected over 55,000 homes and businesses across the UK and caused £3 billion worth of damage, the Flood and Water Management Act 2010 (FWMA) was introduced to provide legislation for the management of risks associated with flooding and coastal erosion. This gives City of York Council responsibilities as the Lead Local Flood Authority (LLFA) for its area, with a range of local flood risk management duties.

- Section 9 of the FWMA requires LLFAs to “develop, maintain, apply and monitor a strategy for local flood risk management in its area”. Local flood risk is defined as flood risk from surface runoff, groundwater and ordinary watercourses.

- Responsibility for the management of flood risk from main rivers, the sea and reservoirs remains with the Environment Agency (EA). The EA has published its National Flood Risk and Coastal Erosion Risk Management Strategy for England, which outlines its responsibilities for the management of flood risk from these sources.

- However, as the cause of flooding is often not straightforward, the Strategy deals with risks from all sources and the Council will work in partnership with the EA and other flood Risk Management Authorities (RMAs) in the delivery of the measures detailed in the Strategic Action Plan. (Section 2)

York is at risk from a range of flood sources – a total of 8,478 properties from our rivers and 16,566 from surface water risk which can cause significant disruption to our travel networks, properties and businesses.

We have experienced a wide range of flood events from our rivers - major flooding in 1982, 2000 and 2015 and flooding has occurred in recent years from severe storms and surface runoff.

York is affected primarily by a vast river catchment known as the Swale, Ure, Nidd and Ouse (SUNO). Therefore, any measures to protect and make York more resilient will need to embrace an adaptive catchment wide approach which includes the maintenance of the existing traditional flood defences but also upstream measures such as Nature based Solutions, including Natural Flood Management.

Presently flood defences protect the vast majority of sites from flooding on the Ouse, Foss, Derwent and their tributaries and further work has progressed post 2015 to ensure their effectiveness following climate change. However, a residual risk remains behind flood defences where drainage networks can be overwhelmed and coordinated action from all partners during flood events is vital.

In addition, the standard of protection from the current flood defences for the River Ouse will be reduced in the coming years due to the impacts of climate change owing to increases in rainfall and in turn river levels.

Therefore, holding and/or slowing the flow of water upstream of York will be necessary to maintain a similar standard of protection into the future whilst providing multiple co benefits including enhanced biodiversity, water quality and carbon storage.

The Ousewem project is considering measures which compliment traditional flood protection and providing a number of these co benefits. This innovative flood resilience project is identifying and delivering nature-based solutions (NbS), including natural flood management (NFM), to reduce flood risk in vulnerable North Yorkshire communities, spanning Yorkshire's Swale, Ure, Nidd and Ouse (SUNO) catchments. This project is funded by Defra as part of the £200 million Flood and Coastal Innovation Programmes which is managed by the Environment Agency. The programmes will drive innovation in flood and coastal resilience and adaptation to a changing climate with the aim of not only assisting in making communities more flood resilient but also bring co-benefits such as improvements to water quality, biodiversity and carbon storage.

The project is led by the City of York Council in close collaboration with North Yorkshire Council alongside our delivery partners JBA, Natural England, Yorkshire Dales Rivers Trust and the University of York."

1.2 The National Flood and Coastal Erosion Risk Management Strategy for England

1.2.1 The National Strategy identifies how flood risk should be managed, providing strategic information about the various kinds of flood risk and the organisations responsible for their management to 'progress towards a nation resilient to flooding and coastal change'. The Strategy has three long term ambitions:

- 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 Flood and Water Management Act 2010 requires RMA's (local authorities, internal drainage boards, sewerage companies and highway authorities) to act consistently with the National Strategy in carrying out their flood and coastal erosion risk management functions.

The York Local Flood Risk Management Strategy principles have been developed in line with the principles of the National Strategy.

1.3 The York Local Flood Risk Management Strategy

1.3.1 Principles of the strategy

The principles which inform the Councils overall approach to flood risk management are:

1. Flooding is a natural process that is being exacerbated by the non-natural consequences of man-made climate change and will occur despite all efforts to prevent it. Therefore, the most effective approach is risk management working with communities and

harnessing natural processes at a local and catchment scale to mitigate and adapt to the impacts of flooding.

2. Improving the level of knowledge and understanding about flood risk and in addition the impacts of flooding is a vital process which needs to be continued.

3. As well as focussing on measures to minimise the impacts of flooding it is important to manage the disruption when it does happen, and afterwards.

4. Effective flood risk management can reduce long-term flood damage costs and make homes, businesses and communities more resilient; it is a worthwhile investment for both the public and private sector.

5. Flood risk management can provide other environmental benefits, such as improving or creating new wildlife habitats, sustainable growth in the local and wider economy.

6. York's resilience depends not only on assets within the city but on coordinated, catchment-wide action. Decisions on where local resources are focused should be evidence-based and made against clear criteria, this may be outside of the city boundary to deliver catchment scale solutions.

7. No single organisation can effectively manage flood risk alone and co-operation is needed from public agencies, the private sector and households, including via the planning process.

8. Flood risk management contributes to the Council's priorities for York.

9. An effective communications strategy will be required, raising public and business awareness of risks and potential remedies and opportunities.

Ongoing investment in modelling and upstream nature-based measures will be essential to manage changing hydrology and unlock long-term benefits for communities, water quality, biodiversity and carbon storage.

1.3.2 Aim of the strategy

The aim of the strategy is to better understand flood risk from all sources in the city, reduce its impact on residents and visitors and take the opportunity to improve the city environment. It is a living document which will provide an ongoing comprehensive framework for managing York's flood risk. As new technical information associated with flood risk management evolves, and real events occur, it will need to change to take this new information into account.

The original strategy was published in 2015, this updated strategy has been revised to include recent flooding information and changes to legislation and policy, however, the core document and approach remains consistent to the first strategy.

The strategy has drawn on existing plans and knowledge to form an understanding of the various flood risks, what management is already in place and where risk remains a concern.

As the principal document for managing York's flood risk it:

1. Explains the current understanding of all flood risk affecting the Council's area.
2. Refers and links to key documents.
3. Outlines the legislative framework.
4. Specifies the responsibilities of the Risk Management Authorities in York and their functions.
5. Provides a basis for co-ordinating flood risk management activities in York and the wider catchment.
6. Contributes to securing and prioritising investment.
7. Explains how flood risk management can contribute to environmental objectives.
8. Explains how flood risk management can contribute to the Council's priorities for York.

The strategy seeks to achieve this aim through the following objectives:

1. Ensure that there is an accurate, comprehensive and clearly documented understanding of flooding and flood risk in York and the wider catchment.
2. Work with our partners to identify the areas of focus and priority for flood risk management in York and communicate it to those at risk.
3. Work to secure, prioritise and deliver investment in mitigating flood risk to deliver social, economic and environmental benefits both locally and at a catchment scale.
4. Ensure that planning decisions properly address all aspects of flood risk and that surface water flows are managed and controlled in a sustainable manner.
5. Maintain drainage infrastructure and watercourses to ensure that their operation maximises effectiveness.

The Strategic Action Plan details the measures required to deliver these objectives.

1.3.3 Other strategies

There are a number of strategies within and outside the council that are complementary with the objectives of the Local Flood Risk Management Strategy (LFRMS) Wherever possible the Council will ensure that the LFRMS is cross cutting with these complimentary strategies. A brief outline of these strategies are detailed below;

City of York Councils 'One City, for all' plan sets out the priorities for 2023 – 2027. Part of this includes a Climate Change Strategy with the aim of being net zero by 2030. A key component of this plan is *'Sustainability: Cutting carbon, enhancing the environment for our future'* with plans to *'Develop an Adaptations Strategy to prepare the city for the impact of climate change'. A range of adaptive measures relating to flood risk such as early warning systems, flood defences and measures within and upstream of York to 'Slow the Flow' will be integral to this plan.*

City of York's Local Transport Strategy sets out a vision in which York is more climate/flood resilient with improved health and well-being through

place shaping. The incorporation of blue green infrastructure, referring to a network of green spaces (and 'blue' water systems) is embodied within the Movement and Places Plan whereby opportunities exist to incorporate blue green infrastructure e.g. Sustainable Drainage Systems (SuDS) as part of improvements to the public realm including parks/open spaces and active travel infrastructure.

York and North Yorkshire Combined Authority have a strategic role within York and North Yorkshire with a key role in terms of investing in projects that contribute to sustainable economic growth which includes their route map to carbon negative with a key pillar being to deliver natural capital. This could, for example, include the implementation of blue green infrastructure both within and upstream of York thereby providing flood protection to York amongst many other projects that ensure York is flood resilient.

1.4 Next step

1.4.1 This is a draft strategy for consultation with internal and external partners prior to public consultation. Public consultation documents will be compiled following review of all comments and a period of public consultation events will follow.

1.4.2 It is proposed to publish the final strategy later in 2025 and it will be fully reviewed in line with the 6-year Flood Risk Regulations cycle.

1.4.3 It is intended that the Strategic Action Plan and the strategy will be considered and endorsed by the Council Executive before publication. Changes and updates to the individual guidance notes (Sections 3-8) would be agreed and endorsed through the relevant committee – Decision Session of the Executive Member for Environment and Climate Emergency.

1.4.4 All RMAs in the Council area work closely together as part of the North Yorkshire Flood Risk Partnership, the Strategy and its action plan will be monitored through the work of this group.

1.5 Structure of the strategy

1.5.1 The York Local Flood Risk Management Strategy comprises a collection of 6 guidance documents which aim to advise and direct the reader to further information to increase knowledge and understanding of flood risk management. These are bound together by the Policy Framework and Strategic Action Plan sections.

The York Local Flood Risk Management Strategy comprises the following elements:

- **Section 1** Policy Framework (this section) - The need for and aspirations of our strategy.
- **Section 2** Strategic Action Plan - The programme of actions and measures, for all Risk Management Authorities, that are able to deliver the aims of the strategy.
- **Section 3** York Flood Risk Overview - A summary of the key flood risk issues in York updated using NaFRA2 data.
- **Section 4** Incident Review Protocol - The way in which we will investigate future flood events to identify effective solutions to reduce their impacts.
- **Section 5** Legislative Framework - Summary of Flood Risk Management legislation and guidance.
- **Section 6** Risk Management Authorities and their Functions - Overview of all Flood Risk Management Authorities and their key responsibilities and functions.
- **Section 7** Development Management - An overview of the legislation and documentation which ensures that developments are built in a manner which is resilient and resistant to flooding.
- **Section 8** Community Action and Resilience - Information on how individuals and communities can be prepared for flooding and take action to reduce its impacts.

The strategy can be read as a complete document or the individual guidance document sections used individually as a resource.

2. Strategic action plan

2.1 Aim

2.1.1 The aim of the strategy is to understand flood risk from all sources in the city, reduce its impact on residents, businesses and visitors and take the opportunity to improve the city environment. As new information associated with flood risk management evolves, and real events occur, it will need to change to take this new information into account.

2.1.2 The Action plan will be reviewed annually with a full review carried out in parallel with the 6-year review cycle defined in the Flood Risk Regulations. The North Yorkshire Flood Risk Partnership will provide a mechanism for all partners to monitor and review the plan as investment strategies develop and change.

Objectives - To achieve this, the strategy has identified the following objectives:

1. Ensure that there is an accurate, comprehensive and clearly documented understanding of flooding and flood risk in York and the wider catchment.
2. Work with partners to identify areas of focus and priority for flood risk management in York and communicate it to those at risk.
3. Work to secure, prioritise and deliver investment in mitigating flood risk to deliver social, economic and environmental benefits both locally and at a catchment scale.
4. Ensure that planning decisions properly address all aspects of flood risk and that surface water flows are managed and controlled in a sustainable manner.
5. Maintain drainage infrastructure and watercourses to ensure that their operation maximises effectiveness.

Outcomes - This will result in:

- A clear understanding of the actions and investment priorities needed to manage flood risk in York and the wider catchment.
- An understanding by those at risk.
- Development that is sustainable and appropriate.
- Drainage infrastructure that is properly maintained and fit for purpose.
- Progress towards meeting the targets in the York Council Plan.

2.2 Measures proposed to achieve the objectives

2.2.1 This section sets out the actions that the Council has identified to achieve the objectives. This will be subject to consultation with internal and external partners and the public.

In proposing these actions, the following points have to be taken into account: There is an increased risk of flooding due to climate change, together with ever increasing financial pressures. This means that schemes and funding need to be looked at critically, and different ways of working need to be investigated to maximise opportunities and value for money.

- Risk Management Authorities have permissive powers with regard to watercourse management, therefore there is no obligation for any organisation to provide flood defence or mitigation schemes to residents or businesses at risk of flooding. However, where appropriate and suitable solutions are identified, and funding can be allocated, the Council will work with partners and local communities to increase flood resilience.
- New developments must be designed to be resilient to flooding and will not receive any government support for flood mitigation schemes in the future.

2.3 Action plan

2.3.1 With reference to the objectives identified above this section sets out: What we plan to do

- How we are planning to do it
- When action is likely to happen
- Who is likely to take the lead

Funding for individual programmes and schemes is likely to be from a variety of sources, Section 2.3.4 highlights potential funding mechanisms which may contribute to delivery of actions.

All actions are linked to the measures identified in Flood Risk Management Plans (2022-2027) as required by the Flood Risk Regulations. This ensures that all partners are developing actions that

can be measured and monitored in their delivery of this primary flood risk legislation.

It is similarly expected that an action plan, aligned with primary legislative drivers and objectives, will support a more effective investment bid for schemes and programmes within the action plan. A summary of the first action plan produced in 2015 and progress made has been included in section 2.6.

2.3.2 The following terms, from the EU Floods Directive[1], are used to group and describe the kind of actions that can be pursued:

- **Prevention of risk:** for example, by not building homes in areas that can be flooded we can prevent risks from arising in the first instance.
- **Protection from risk:** for example, by delivery of flood alleviation schemes, property flood resilience (such as flood door and airbrick covers which reduce damage to properties), or natural flood risk management measures to hold and slow the flow of water in the catchment.
- **Preparing for risk:** for example, by improving awareness of flood risk, or by providing warning and forecasting for floods, people can take precautions to safeguard themselves and their valuables.
- **Recovery and review of risk:** for example, by improving our knowledge and understanding of flood events we can design and develop works to reduce the impacts of future floods.

2.3.3 The actions will take varying timescales to achieve and are dependent on securing funding. The action plan will be reviewed as funding is secured, but the actions have initially been placed in one of the following three categories:

- Short term – up to two years
- Medium term – two to five years
- Long term – over five years

[1] Following Brexit, the UK is no longer legally bound by EU directives, including the Floods Directive. However, the UK initially retained much of the EU environmental legislation through the European Union (Withdrawal) Act 2018, which converted EU law into domestic law on exit day

2.3.4 Potential sources of funding that have been identified are:

- **City of York Council revenue**
- **City of York Council capital**

  The Flood Risk Management Team is funded to ensure essential investigation and maintenance of waterways and highways is carried out to prevent flooding. Strong funding cases are required to ensure the continued provision of revenue monies and capital schemes are, like all other schemes, supported where need is greatest within the funding available to the Council.

- **Planning gain, S106/S278**

  Section 106 (S106) of the Town and Country Planning Act 1990 allows a Local Planning Authority (LPA) to enter into a legally-binding agreement or planning obligation with a landowner / developer in association with the granting of planning permission. The obligation is termed a Section 106 Agreement. These agreements are a way of delivering or addressing matters that are necessary to make a development acceptable in planning terms and often refer to off-site infrastructure works such as highway improvements or new facilities such as play areas or local education improvements.

  Section 278 (S278) of the Highways Act 1980 allows developers to make permanent improvements to a public highway as part of a planning approval. In some circumstances S278 funding may be used to develop improvements to highway drainage or localised drainage assets.

The Environment Agency monitors and administers the delivery of funding and overall programmes are developed and endorsed through the Yorkshire Regional Flood and Coastal Committee (RFCC) and its sub area-based Flood Risk Partnerships (York is part of the North Yorkshire Flood Risk Partnership). The Yorkshire RFCC is the gatekeeper for all Flood Defence Grant in Aid (FDGiA) and local levy in Yorkshire.

- **Defra partnership funding**

  Partnership funding is a way of allocating capital funding to flood and coastal erosion risk management projects for all RMAs in the form of FDGiA. Partnership Funding allocates an element of FDGiA to all schemes according to their benefit realisation, where the FDGiA allocation can only part fund a scheme contributions need to be identified to allow it to progress. It is expected that all schemes, even where they can be 100% FDGiA funded, seek contributions to enable the oversubscribed national FDGiA funding to realise wider benefits.

  Schemes are assessed according to the number of households receiving an improved standard of protection from flooding or coastal erosion, the overall economic benefits of the investment programme and important environmental outcomes, such as creating new habitats.

  The current partnership funding eligibility criteria, as described above, is currently being consulted on and new rules around how and what can be funded will change from April 2026. The current proposal is to look at simplifying the current assessment process to enable more Natural Flood Management and Property Flood Resilience to be funded alongside increased funding for existing flood risk assets. An allocation of £4.3 billion has been allocated nationally for flood risk management projects for the period of 2026 -2029. This will fund both capital, repair and maintenance works.

- **Yorkshire Regional Flood and Coastal Committee local levy**

  The c. £2M local levy money raised each year by direct levies on all 14 Lead Local Flood Authorities in Yorkshire is used as contributions to Partnership Funding schemes or to fully fund schemes that do not fit the criteria required to attract FDGiA Funding. Local levy funding allows some innovative and marginal schemes to be developed.

- **Environment Agency revenue**

  EA revenue funds the delivery of flood forecasting, warning and informing, development control and enforcement and the delivery of mapping, modelling and investigations to underpin future flood

alleviation scheme delivery. EA revenue is essential in the delivery of all asset management practices from inspection, monitoring, operation and maintenance of existing defences and river channels and large scale replacement and renewal of key flood risk management assets. All EA revenue monies are allocated in a prioritised basis according to risk.

- **Water industry**

  - Yorkshire Water Services (YWS) as the water and sewage company in the Council area, works to five year funding cycles or Asset Management Plan (AMP) periods. They have compiled a needs based assessment of all funding for the 2025-2030 period and some flood risk management spending requirements have been included. This has led to a significant increase in spending of £xxxxx over the 2025-2030 period to reduce sewage spills through from their storm overflows in York. A combination of measures to achieve this could include building surface water sewers, underground storage tanks, using nature based solutions, lining sewers and diverting surface water from combined sewers (i.e. those sewers that carry sewage and surface water.)

    Sewer flooding events are assessed according to regulatory guidelines, we work with YWS to identify where their investment can deliver flood resilience alongside their wider objectives. Other funding is available to allow YWS to work with all RMA's to investigate, model and deliver flood risk management operations..

- **Internal Drainage Board (IDB) revenue and grant**

  IDB expenditure is predominantly funded by the local beneficiaries of the water level management work that they provide through collection of drainage rates. A portion of payments to IDBs operating in the City of York area is paid for through a 'Special Levy' (Approximately £990k annually from the City of York Council) as secured via Council tax from householders who live within the Internal Drainage Board areas. Each IDB sets a budget for its planned work in the forthcoming year and any investments it needs to make for wider projects. As a RMA, the IDB has to assess and mitigate flood risks within its area.

- **Other**

  ‘Core’ flood risk management funding is dependent on contributions as required by Partnership Funding, similarly, funding available to RMAs can only be used to address flood risks to existing beneficiaries (where constructed prior to 2012 as there is a presumption that recent developments were built resilient and resistant to flooding) and regeneration economics cannot normally be considered.

  Key funding streams from the York and North Yorkshire Combined Authority, private businesses/investors or other non ‘core’ funders are essential to enable flood risk management interventions to play a role in good place making and the facilitation of sustainable developments.

  Funding to deliver natural flood risk management (NFM) interventions and wider environmental benefits is beginning to influence and support whole catchment programmes of works. This will be essential to our work in York and North Yorkshire during the lifespan of this strategy and beyond.

2.4 Monitoring delivery

2.4.1 The action plan will be monitored by the North Yorkshire Flood Risk Partnership, all RMA’s attend the partnership and the delivery of actions and investment needs will be measured through its work.

The partnership is one of four across Yorkshire that identifies sub regional flood risk priorities and feeds them into the wider work and investment planning of the Yorkshire Regional Flood and Coastal Committee.

The proposed measures in the following tables indicate those required, at this moment in time, to deliver against the identified need and an assessment of the funding is that which is required to deliver them.

All funding sources listed in section 2.3 require detailed assessments of costs and benefits to identify which needs based schemes can be approved for inclusion on future funding programmes. Further work is often then required to confirm formal approval of funding from the programme for the identified measures.

The following coding is used to broadly indicate the status of the funding needs across all sources indicated in section 2.3:

- *Need Identified – but works not in a current funding program*
- Need Accepted – in a current funding programme but funding is not allocated
- **Need Supported – approved funding allocation / works in progress**

2.4 Proposed measures

Sources: Surface Water (SW), Ground Water (GW), Fluvial (F)

Support organisations: Environment Agency (EA), Internal Drainage Boards (IDB), Yorkshire Water Services (YWS), North Yorkshire County Council (NYCC)

Proposed measures - Prevention

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
SW, GW, F	2/3	Ensure that planning decisions properly address all aspects of flood risk and that surface water flows are managed and controlled in a sustainable manner. Development of sustainable places better adapted to manage flood risk. Identification of planning gain opportunities to deliver flood risk management infrastructure delivery	Short term/ ongoing	CYC - Local Planning Authority	EA, IDB, YWS, NYC	Core part of delivery with no capital cost, may require periodic capital costs to develop detail and understanding. *£5k to £10k per study*. (Funding source to be confirmed)

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
SW, GW, F	2/3	Input into strategic planning and strategic development sites to identify sustainable flood risk and drainage solutions.	Short Term	CYC - Local Planning Authority	EA, IDB, YWS, NYC	*£5k to £10k per study.* *(CYC Funded)*
SW, GW, F		.Support the development of any updates to the local plan and Strategic Flood Risk Assessment.	Short/Ongoing	CYC - Local Planning Authority	EA, IDB, YWS, NYCC	**£TBC.** **(CYC Funded)**
SW	2/3	Undertake periodic review of the the CYC Sustainable Drainage Systems Guidance for Developers in accordance with updated national policy and guidance.	Short/Ongoing	CYC	EA, IDB, YWS	*£10k per review.* *(CYC Funded)*
SW	2/3	Produce a SuDS Highway Design Guidance to support the adoption and maintenance of SuDS within the highway and public realm. Promote and communicate the benefits of SuDS (e.g. improvements in amenity/biodiversity/water	Short/ Ongoing	CYC	YWS	£TBC (CYC Funded)

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
		quality/flood risk to residents/developers and stakeholders. This should include linking with and promoting of the council's own policies and plans (e,g, Local Transport Plan/Movement and Places Plan) and exemplar projects located within the public realm and highways.				
SW, F	2/3	Working with York and North Yorkshire Combined Authority and wider funders to identify strategic sites where flood prevention work can act as an enabler to regeneration and development.	Short/Ongoing	CYC	EA, IDB, YWS, Network Rail, DfT, YNYCA, etc	Site dependant £25 to £100k. (Source of funding TBC)
SW, F	1/2	Flood Risk Management Partners will work together to create integrated catchment models based on principal watercourses and drainage network where needed (YWS Drainage and Wastewater Management Plans. IDB	Long	CYC	EA, IDB, YWS	*£50 to £100k per study.* *(Source of funding TBC)*

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
		Programme of works). Opportunities for habitat and ecology improvements will be sought in line with Water Framework Directive (WFD), Local Nature Recovery Strategies The Council will work with the EA and partners to attract funding for studies through the Local Levy and Flood Defence Grant in Aid and with wider partners such as YNYCA for wider funding.				
SW, F	1/2	Seek opportunities to work with Yorkshire Water, land managers and academia to investigate water quality impacts in the city and where possible co-deliver programmes to reduce the impacts of combined sewer overflows and diffuse agricultural pollution. Incorporate water quality modelling outputs from the	Medium	CYC	YWS, EA, Land managers, NFU, NYC, academia	*c. £100k study/model/ appraisal works.* *(Source of funding TBC)*

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
		modelling carried out by Ousewem.				
SW, F	1/2	Deliver Ousewem to provide innovative solutions to better protect York and North Yorkshire Communities.	Medium	CYC	YWS, EA, Land managers, NFU, NYC, academia	**£6m.**
		Work with neighbouring LLFAs and partners to provide catchment-based approaches to tackle flood risk across administrative boundaries. This will include working with landowners in the upstream areas to provide benefits for those downstream. Work with the York and North Yorkshire Combined Authority to support cross boundary working. Develop Ousewem into a legacy/strategic approach to flood risk management to	Medium	CYC	NYC, Land owners, EA, YWS, YNYCA, etc	*c. £100k study/model/ appraisal* *Future operating costs of potential strategic delivery model TBC.* *Ousewem legacy is*

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
		enable a sustained programme of NFM and nature-based interventions beyond the life of the innovation pilot. This could include securing short term funding for Ousewem to develop a pipeline of NFM projects and supporting the development of a long term strategy for NFM/NbS funding and delivery within the Swale Ure Nidd and Ouse catchment. Utilise lessons from the Ousewem project to inform future investment and decision-making. This should include the lessons learned and expertise gained from the project which is supporting peer learning to upskill across the region through knowledge exchange events, shared monitoring practices and active engagement with farmers,				*being funded through current project.*

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
		landowners and community groups.				

Proposed measures - Protection

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
SW, GW, F	2	Develop, maintain and review a prioritised programme of projects, to include Local Levy, for submission and consideration by the Yorkshire Regional Flood and Coastal Committee (RFCC). Contributions from stakeholders and beneficiaries will be sought in line with Defra Partnership Funding requirements.	Ongoing / annual	CYC	EA, RFCC, North Yorkshire Flood Risk Partnership	£25k. (CYC Funded)
SW, GW, F	1/2	Deliver a programme of flood risk management projects to reduce the impacts of local flooding.	Ongoing	CYC	EA, IDB, YWS	*TBC following appraisals.*
F	1/2	Delivery of final phases of York Flood Alleviation Scheme – Clifton Ings, Foss Basin Project, PFR rollout.	Short	EA	CYC	**£TBC**

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
F	1/2	Germany Beck, , Tower Gardens. Deliver a Flood Alleviation Scheme on the Germany Beck	Short Short	CYC CYC	IDB, EA YW, IDB	 £4.6m (CYC £3.484m, Central Government £937k and Local Levy £209k)
F	1/2	Burdyke combined study and appraisal.	Medium	EA/YW	CYC	TBC.
F	4	Delivery of EA maintenance programme to ensure optimal, safe and effective operation of all defences and Main River watercourses and assets in the CYC area and upstream management in the NYCC area. Review and scrutiny by the North Yorkshire Flood Risk Partnership and the RFCC,	Ongoing - annual	EA	CYC, IDB	**£1m p.a.** Needs based assessment, future budget needs may increase with new flood scheme need.

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
		lobbying and pressure from CYC officers and members.				
F	4	Delivery of IDB maintenance programme to ensure optimal, safe and effective operation of all IDB managed watercourses and assets in the CYC area. Review and scrutiny by the North Yorkshire Flood Risk Partnership and the RFCC, lobbying and pressure from CYC officers and members.	Ongoing - annual	IDB	CYC, EA	**Approximately £990k** Council paid Special Levy to support IDB works in our area.

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
SW, GW, F	4	Delivery of CYC maintenance programme to ensure optimal, safe and effective operation of all CYC managed watercourses in the CYC area, with improved biodiversity outcomes where possible as part of routine maintenance	Ongoing - annual	CYC	EA, YWS, IDB	**£200k p.a.** highways investigation /remediation. **£100k p.a.** watercourse maintenance. **£25k p.a.** reservoir management. (All of the above are CYC funded)

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
SW,GW, F	4	Review and where appropriate apply the adaptation pathways approach to climate change impacts and risks associated with flood risk. This could include an assessment of the impacts of flooding damage .e.g. infrastructure, disruption to travel networks, loss of business, damage to property, displacement of people from their homes, risk to safety, increased cost of insurance	Medium	CYC	NYC,YNYCA,EA,IDB,YW	**TBC** **(Funding source TBC)**

Proposed measures -Preparedness

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
SW, GW, F	1/2	Support actions (individually costed in this plan or TBD) within the 2022 Humber River Basin Management Plan that impact on identified Flood Risk Areas in York and the upstream catchment. Review the plan throughout the lifespan of this action plan.	Medium	EA	CYC, NYC, YWS, Land managers, catchment partners	TBC (EA Funded)
SW, GW, F	1/2	Support actions (individually costed in this plan or TBD) within the 2022 Flood Risk Management Plan to deliver Flood Risk Regulations outcomes in the Humber River Basin District. Review the plan throughout the lifespan of this action plan.	Medium	EA	CYC, NYC, IDBs	TBC (EA Funded)

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
SW, GW, F	1/4	Work with the North Yorkshire Local Resilience Forum (NYLRF) and CYC Emergency Planning Unit to support community resilience work such as creation of Community Emergency Plans and public education programmes as set out in the Community Resilience Action Plan, increase flood warning uptake and input into the CYC River Flood Emergency Plan. Encourage local knowledge of community resilience work and volunteering through CYC and ward level communications, including CIO's and ward councillors.	Ongoing	CYC Emergency Planning Unit and EA	CYC, all professional partners	TBC (CYC Funded)
F, SW, GW	1	Work with residents, businesses and insurance providers in the city and lobby Government to ensure affordable and effective flood risk cover is attainable, delivery of workshops with key	Short	CYC	EA	*£10k.* *(CYC Funded)*

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
		stakeholders and insurance providers in the Council area.				
F, SW, GW	1	Develop, improve and maintain the CYC website flood pages to provide an effective resource for residents and businesses wanting information on flood risk management; with relevant information and links to partner organisations/other media outlets and signposting e.g. best practice case studies, success stories, funding opportunities and advice for communities on ways to help/reduce flood risk.e.g. permeable paving, leaky water butts etc	Short	CYC		£2k p.a. (CYC Funded)
F, SW, GW	1	Develop a communications strategy to ensure the delivery of effective media messages and campaigns to enable residents and businesses to become more resilient to flood risk. Work	Short/Ongoing	CYC	EA/YW	TBC

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
		alongside IDBs to to raise awareness of riparian responsibilities.				(CYC Funded)

Proposed measures - Recovery and review

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisations	Estimated Cost
SW, GW, F	1/4	Deliver investigations in accordance with Section 19 of the Flood & Water Management Act and deliver all necessary post flood remedial works and actions. Working with public & businesses to raise awareness of flood risks and to identify community led solutions.	Short/Ongoing	CYC	EA, IDB, YWS, all professional partners	*c. £100k per event*, existing CYC / RMA funding streams.
		Install Improved flood risk signage in the city.	Short/Medium	CYC	EA	£50k

						(CYC Funded).
SW, GW, F	1/2/4	Maintain and improve remote data collection systems for GIS data entry in the field to support drainage investigation work and flood response actions.	Short	CYC		£2k p.a. licences. (CYC Funded)

2.5 Previous Actions and progress made

Prevention

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Progress
SW	2/3	Develop processes and guidance to deliver Schedule 3 of the Flood and Water Management Act following commencement by Defra. All new developments will incorporate sustainable drainage systems unless exemptions apply.	Schedule 3 not enacted by Government, National Planning Policy Framework amended to ensure SuDS are considered in all major applications, National Guidance developed to support this. CYC have developed a guidance document to support developers, Sustainable Drainage Systems Guidance for Developers. All key planning applications are scrutinised by a dedicated Flood Risk Management Engineer.

SW/F	2/3	Working with Local Enterprise Partnership and EU funders to identify strategic sites where flood prevention work can act as an enabler to regeneration and development. York Central site has identified support from the Local Growth Fund and work continues to identify European Structural and Investment Funds opportunities.	The CYC Flood Risk Management Team competed a hydraulic study of Holgate Beck to assess the current and future risks in the catchment and the emerging development site. The outputs showed that future drainage needs could be provided through current planning controls and significant investment in the catchment was not needed to facilitate this, a wider funding bid was not required. The Flood Risk Management Team are working with the project team to identify sustainable drainage solutions for the site.
SW/F	1/2	Flood Risk Management Partners will work together to create integrated sub catchment models based on principal watercourses and drainage network (YWS Drainage Area Plans). Opportunities for habitat and ecology improvements will be sought in line with Water Framework Directive (WFD) and the Local Plan The Council will work with the EA to attract funding for studies through the Local Levy and Flood Defence Grant in Aid and with wider partners such as the LEP for wider funding (i.e. York Central / Holgate Beck study).	Modelling and appraisal works have been carried out throughout the city following the Boxing Day 2015 floods. Some catchment models were already in progress – Holgate Beck, South Beck.

Protection

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Progress
SW/GW/F	2	Develop, maintain and review a prioritised programme of projects, to include Local Levy, for submission and consideration by the Yorkshire Regional Flood and Coastal Committee (RFCC) Contributions from stakeholders and beneficiaries will be sought in line with Defra Partnership Funding requirements	Funding bids from CYC and partners have led to the delivery of a wide range of schemes during the lifespan of the first edition of the strategy – see below.
SW/GW/F	1/2	Deliver a programme of flood risk management projects to reduce the impacts of local flooding	EA & CYC were able to attract >£100m of funding to improve and extend the existing defences in the city and make them resilient to future climate change – see main strategy document. Wider schemes have been developed to manage surface water i.e. Ings Cliff Drain, Nunthorpe Road and investment has continued to manage highways linked issues around the city. Property Flood Resilience measures have been supported through the CYC delivery of Defra Pathfinder funding across Yorkshire. Environmental enhancement schemes have been undertaken in Hull Road Park and the Flood Risk Management Team have attracted c.£6m of funding to incentivise and increase the uptake of Natural Flood Risk Management measures across the River Swale, Ure and Nidd catchments – see main strategy document.

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Progress
F	1/2	City of York Flood Defence Improvement Strategy and works arising to all existing defences Close working between EA and CYC, likely need for similar levels of funding in contributions to enable works to progress	EA & CYC were able to attract >£100m of funding to improve and extend the existing defences in the city and make them resilient to future climate change – see main strategy document. Catchment scale works are required to support the future resilience of the defences in the city, Defra Innovative Resilience funds and EA flood storage schemes will be integrated to deliver this – see current action plan and main strategy document
F	1/2	Foss Barrier Upgrade	Works completed as part of package of delivery following the Boxing Day 2015 floods
F	1/2	Burdyke / Holgate Pumping Station appraisal and Replacements	Holgate Beck appraisal completed, no major works needed to increase the performance of the pumped section of the catchment. Will continue to work with the EA to ensure appropriate investment is available for the effective management of the pumping station Burdyke was appraised as part of the main works in the city following the Boxing Day 2015 event, defence improvements have been carried out but no change to the pumping station. EA & CYC agreed a study is needed to look at all sources of risk, included in latest action plan
F	1/2	Clifton Ings Barrier Bank Restoration	Under construction as part of the York Flood Alleviation Scheme project, works to be completed by the end of 2025

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Progress
F	1/2	Develop and deliver a range of measures to reduce the impacts of flooding in the unprotected areas of York – Bishopthorpe, Acaster Malbis, Fulford, Clementhorpe, Naburn, Kings Staith/Tower Street, Nether Poppleton Close working and coordination is required between EA and CYC, property level resilience measures are likely to be the optimal solution. Work with residents and businesses to deliver collectively funded protection measures.	Works at Bishopthorpe, Acaster Malbis, Fulford, Clementhorpe, and Naburn included in the York Flood Alleviation Scheme programme and completed/under delivery by EA/CYC – see main strategy document Further actions for remaining issues included in current action plan
F	4	Delivery of EA maintenance programme to ensure optimal, safe and effective operation of all defences and Main River watercourses and assets in the CYC area and upstream management in the NYCC area Review and scrutiny by the North Yorkshire Flood Risk Partnership and the RFCC, lobbying and pressure from CYC officers and members	EA continue to deliver maintenance and operation of York's defences, action ongoing and included in current action plan
F	4	Delivery of IDB maintenance programme to ensure optimal, safe and effective operation of all IDB managed watercourses and assets in the CYC area	IDB's continue to deliver maintenance and operation of a range of drains and watercourses in York, action ongoing and included in current action plan

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Progress
		Review and scrutiny by the North Yorkshire Flood Risk Partnership and the RFCC, lobbying and pressure from CYC officers and members	

Preparedness

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisation(s)	Estimated Cost
SW, GW, F	1/2	Create Management Catchment Plans for Flood Risk Regulations – providing a high level assessment of flood risk and risk management actions/measures for each catchment within CYC and neighbouring NYCC authority area	First cycle Flood Risk Management Plans completed, second cycle published in 2022. CYC have inputted and supported throughout.			
SW, GW, F	1/2	Work with neighbouring LLFAs to provide input to Management Catchment Plans for those catchments which cross into other authority	Innovative Flood Resilience Programme NFM scheme developed with all upstream partners, delivery commencing			

		areas – NYCC to ensure collaborative upstream actions and ERYC regarding the River Derwent	summer 2022 through to 2027, action ongoing and included in current action plan.
SW, GW, F	1/4	Work with the North Yorkshire Local Resilience Forum (NYLRF) and CYC Emergency Planning Unit to support community resilience work such as creation of Community Emergency Plans and public education programmes as set out in the Community Resilience Action Plan, increase flood warning uptake and input into the CYC River Flood Emergency Plan	The LRF continues to promote effective working across all partners. Reviews and investigations following the Boxing Day 2015 floods and a number of events in recent years continue to test and improve the plans of all partners, action ongoing and included in current action plan.
F, SW, GW	1	Work with residents, businesses and insurance providers in the city and lobby Government to ensure affordable and effective flood risk cover is attainable Delivery of workshops with key stakeholders and insurance providers in the Council area	CYC and partners have worked with a number of residents and businesses following the Boxing Day 2015 and more recent flood events to support their discussions with insurance providers. More specific work in this area is required, action ongoing and included in current action plan.
F, SW, GW	1	Develop, improve and maintain the CYC website flood pages to provide an effective resource for residents and businesses wanting information on flood risk management.	Currently in progress, action ongoing and included in current action plan.
F, SW, GW	1	Develop a communications strategy to ensure the delivery of effective media messages and campaigns to enable residents and businesses to become more resilient to flood risk	Completed early in the lifespan of the last action plan, requires refresh and updating, action ongoing and included in current action plan.

Recovery and review

Source	Local Flood Risk Strategy Objective (Section 2.1)	Action	Timescale	Lead Organisation	Support Organisation(s)	Estimated Cost
SW, GW, F	1/4	Deliver investigations in accordance with Section 19 of the Flood & Water Management Act and deliver all necessary post flood remedial works and actions Working with public & businesses to raise awareness of flood risks and to identify community led solutions	A series of flood investigations have been published following significant flood events and are Badger Hill/Hull Road – 10th June 2012 Leeman Road – 26/27th September 2012 Various locations – 26th December 2015 City Wide - 13th August 2018			
		Install Improved flood risk signage in the city, procure a rainfall monitoring system able to analyse future events and support event investigations.	A number of signs have been improved throughout the city were there is an identified need.			
SW, GW, F	1/2/4	Maintain and improve remote data collection systems for GIS data entry in the field to support drainage investigation work and flood response actions	The Council utilise an integrated software package and regularly update asset and flood event information to inform the operational and planning elements of the Council's functions.			

3. Flood risk in York

3.1 Introduction

3.1.1 The city of York is located in the Vale of York on the confluence of the rivers Ouse and Foss. Centred on this urban core, the administrative area extends to include villages of varying sizes and largely rural land with the River Derwent forming the eastern boundary. While these main rivers drain two separate catchments they are both included in the area covered by the EA's River Humber Basin Management Plan.

3.1.2 The York Local Flood Risk Management Strategy takes a catchment wide approach to addressing the risks of flooding for the York area. The strategy covers the risk of flooding from the Rivers Ouse, Foss and Derwent as well as local flood risk from minor watercourses and surface water.

3.1.3 Predictions indicate that the country will experience warmer, wetter winters and hotter, drier summers resulting in more extreme rainfall events. As a result, flooding of greater magnitude and frequency from all sources is expected. City of York Council have developed a wide range of climate change adaptation and mitigation ambitions, this will support and inform our flood risk management approaches City of York Climate Change.

3.1.4 This section provides an overview of the sources of flood risk affecting the council's area, based on the range of documents that have been produced both by the Environment Agency and the Council.

3.2 Flood risk from rivers

Flood risk from main rivers

3.2.1 Being on the confluence of the Rivers Ouse and Foss, York is well known for flooding from those rivers. There are 8,478 properties at risk from main rivers as confirmed by the updated flood maps as of March 2025 (National Assessment of Flood Risk 2- NaFRA2) The EA leads in the management of flood risk from this source.

3.2.2 Although the upstream Yorkshire Dales rivers, the River Swale, Ure and Nidd, which form the Ouse, rise and fall rapidly, by the time the flows reach York the river is meandering and slower flowing. The EA's well established catchment wide monitoring enables warnings

for York to be issued ahead of the peak flood level through the city. River flood events are therefore predictable, and rises in river levels are relatively slow and always affect the same areas. This allows a consistent and effective multi-agency response to be provided in accordance with the Council's Emergency Flood Plan and also a post event recovery operation targeted at known risk areas.

3.2.3 Many areas in the City benefit from flood defences constructed following flooding in 1978. This event triggered a defence building programme and the first scheme to be constructed, protecting the Leeman Road area, was completed in the early 1980s. This successfully protected 225 properties against flooding in March 1982, the highest on record at the time, subsequent defences were built to protect other areas of the city.

3.2.4 Further significant floods occurred in 2000 (highest on record), and 2012 in September and November. The September level equalled that reached in 1982. The defences performed successfully with no property flooding within the defended areas, but approximately 50 – 60 properties in unprotected areas were affected. Large scale flooding from the sewage system behind flood defences in the Leeman Road area was avoided following emergency operations by all partners.

3.2.5 Although the cities defences were originally designed for a 1 in 100 year event (a flood event with a 1% chance of occurring in any one year), the standard of protection was perceived to have fallen to 1 in 50 years as data from subsequent flood events and a better understanding of catchment hydrology and climate change were gained over recent years.

3.2.6 Significant flooding occurred in the city on Boxing Day 2015 which saw 627 households and businesses affected. Intense rainfall gave rise to record flows on the River Foss which overwhelmed the Foss Barrier and equalled the second highest historic levels observed on the River Ouse, significant disruption occurred and many communities were displaced for many months afterwards. An independent flood review investigated the causes, impacts and responses - York Flood Inquiry.

3.2.7 The 2015 Boxing Day floods followed closely after the 2012 events, all had tested the cities River Ouse defences significantly. Similarly it was accepted that the standard of protection provided by the cities defences would continue to further reduce over time due to increases in flood risk from climate change.

The EA and CYC were successful in developing a case to attract more than £100m of funding to improve the future resilience of the cities defences.

The Environment Agency has been working with CYC on the York Flood Alleviation Scheme, an extensive programme of works to ensure that existing flood defences meet the challenges of a changing climate and to build new assets in places that were previously undefended. This included raising walls and embankments, building new walls, extensively upgrading the Foss Barrier and a programme of Property Flood Resilience works. A new flood storage area on the Foss will further attenuate flows, York Flood Alleviation Scheme .

The City's flood defences include:

- The Foss Barrier, originally built in 1986/7, a gate which when lowered in place, cuts the Foss off from the Ouse stopping water from passing back upstream. Flow from the Foss is pumped through the barrier into the Ouse. It underwent a refurbishment following the Boxing Day floods in 2015.
- North Street: a series of flood gates and walls installed in 1992/3,
- Lower Ebor Street: concrete flood walls with valves to isolate sewage,
- Holgate Beck: Upstream tributaries of the beck were diverted to empty directly into the Ouse, and a pumping station was installed to pump flows into the Ouse,
- Lower Bootham: a 650m earth flood bank and 280m concrete flood wall,
- Acomb Landing: a reinforced retaining wall was added to existing embankments after the 1982 floods to protect York's drinking water abstraction at this point,
- Clifton Ings: modified natural flood-plain which can hold 2.3 million cubic metres of water - impounding within raised flood banks can lower the peak flood level in the city by almost six inches.
- Leeman Road: A flood bank was built in 1980, following the 1978 floods, and raised in 1982, following further floods. The defences have now been upgraded again in a £4 million project that has included raising the banks further and adding a flood wall at Water End.
- Also a flood gates at Almery Terrace (x 13), 2x flood gates at Clementhorpe, 1x new flood gate at Bishopthorpe,13 on Earlsborough Terrace (including Marygate) and 2 sets of demountable defences at the Memorial Gardens (North St)

- Approximately 100 glass panels

3.2.8 All of the defences are now designed to mitigate the impacts of a 1 in 100 year flood and some defences have been raised to a level able to manage climate change impacts for the next 100 years. However, in many locations this would have led to defences of a height that would sever riverside communities from our rivers and impact on the enjoyment and usage of our waterways for residents and visitors, in these locations the defence level is set slightly lower.

3.2.9 In these locations further work will be required to mitigate the impacts of climate change after 2039, projects are being developed to assess options for reducing peak flows on the Ouse through activity upstream of the city. These catchment scale works could entail natural flood risk management, flood storage or changes to land management regimes.

3.2.10 The EA is responsible for the flood walls, gates, embankments and Foss Barrier flood defences.

3.2.11 All of the areas protected from the Rivers Ouse and Foss are susceptible to floodwater by-passing the defences, both through the sewerage and surface water outfalls. To manage this, many protected areas have a pumping station on the sewerage system and penstocks to close off the flows from the river. These are closed as the river rises, and the stations are switched on, pumping flows forward to a point outside the protected area. These are owned and operated by YWS.

3.2.12 The protection of these areas is reliant on co-ordinated action by the Council, EA and YWS as the river rises.

3.2.13 The eastern boundary of the Council's area is formed by the River Derwent which drains the North York Moors.

It is also a slow rising and falling river, and the village of Elvington is the only significant settlement in the City of York Council boundary which can be affected by this river. Works carried out in 2009 provide protection to a standard of 1 in 100. This includes a pumping station, operated by the Ouse and Derwent IDB, which pumps flows from the Elvington Beck catchment to the River Derwent at times of high river levels.

3.2.14 The urbanised lengths of Blue Beck, Burdyke and Holgate Beck (tributaries of the River Ouse) and Tang Hall Beck and Osbaldwick Beck (tributaries of the River Foss) are also Main Rivers. Holgate Beck and Burdyke have pumping stations, owned and operated by the EA, near their confluences with the River Ouse, which prevent the river flooding areas remote from the river in Holgate and Clifton.

Flood risk from ordinary watercourses

3.2.15 The majority of ordinary watercourses in the Council's area are in the permissive management of 4 Internal Drainage Boards which have responsibility for a defined network of watercourses within their districts, all of which extend well beyond the CYC boundary into adjoining authority areas.

These are:

- Ainsty (2008) IDB covering the west and south west of York, extending into the former Harrogate Borough and Selby District Council areas of North Yorkshire Council, with the River Ouse as its eastern boundary. It includes Holgate Beck upstream of the length designated as Main River.

- Foss (2008) IDB covering an area centred on the River Foss north of York extending into the North Yorkshire Council area. It includes Tang Hall and Osbaldwick Becks upstream of the lengths designated as Main River, and also non-main river watercourses Westfield Beck and part of South Beck.

- Kyle and Upper Ouse IDB covering the north west of York extending into the former Hambleton District Council area of North Yorkshire Council with the River Ouse as its western boundary. It includes Burdyke and Blue Beck upstream of the lengths designated as Main River.

- Ouse and Derwent IDB covering an area south and east of York extending into the former Selby District Council area of North Yorkshire Council with the River Ouse forming its western boundary and the River Derwent its eastern boundary. It includes non-Main River watercourses Elvington Beck, Germany Beck and Tunnel Drain.

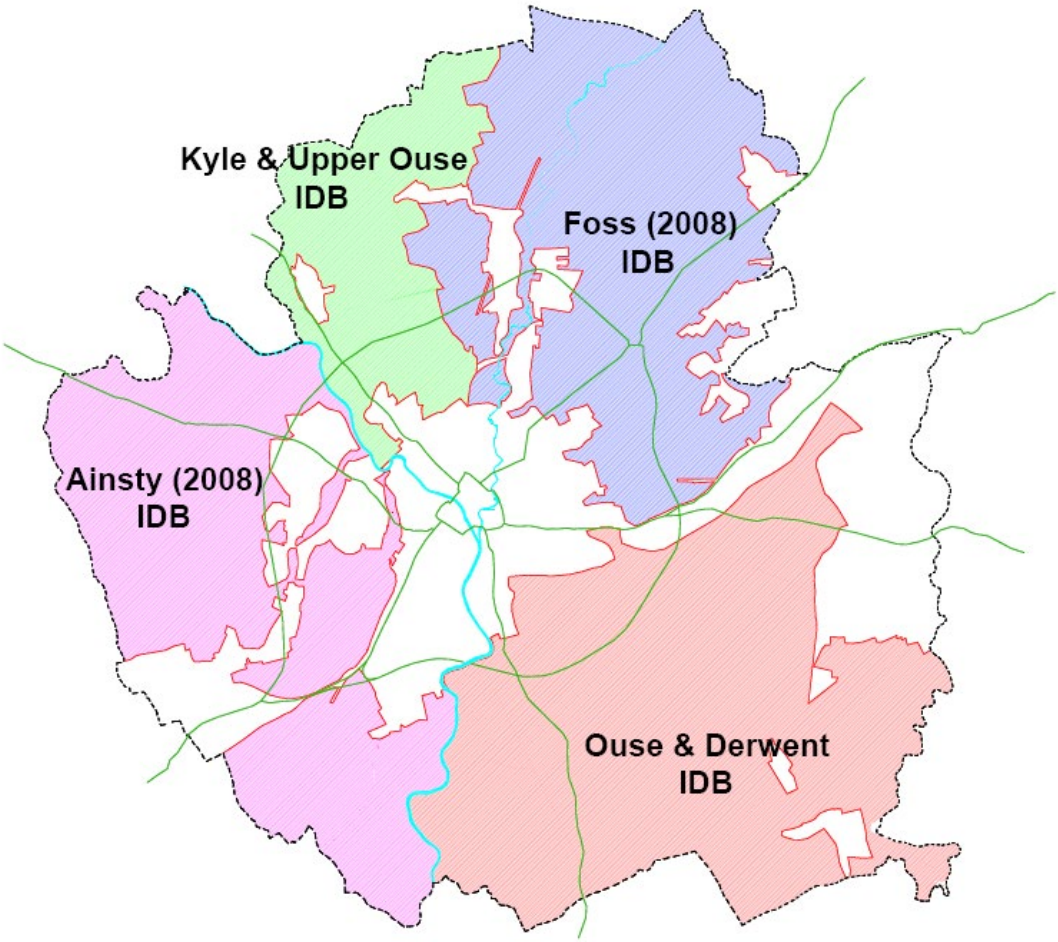

Figure: Internal Drainage Boards Districts within the York boundary

3.2.16 The Council is the land drainage authority for the areas not in IDB districts. Although the EA has powers to maintain the main rivers within this and IDB districts, its routine maintenance regime only includes the cleaning of trash screens at culvert inlets. Responsibility for any watercourse remains that of the riparian owners to ensure that flows are not obstructed. This may be the Council's responsibility where it is the owner of land through which these watercourses pass.

Flood Risk from Local Sources

3.2.17 Local flood risk is defined as flooding from ordinary watercourses, surface water and groundwater. The Council, as LLFA, is responsible for the management of flood risk from these sources.

3.2.18 Two versions of a Preliminary Flood Risk Assessment (PFRA) have been carried out for York - in 2011 and the latest to support the Humber Flood Risk Management Plan (2022-2027), both have been developed in response to the requirements of the Flood Risk Regulations

2009. The plans are a high level screening exercise to compile information on 'nationally significant' local flood risk from past and predicted future floods using available information about historic flooding, and the surface water mapping provided by the EA. In relation to 'Flood Risk from Local Sources' it concluded that York does not exceed the nationally defined local flood risk threshold and therefore has no local flood risk area for further investigation under the regulations.

3.2.19 On the basis of past flooding data, the PFRA also concluded that no historical events from local flood risk sources are considered to have had "significant harmful consequences" (following the definition laid down in the regulations). Future events will be added to support future PFRAs and this Strategy.

3.2.20 The PFRA also concluded that the available surface water mapping provides the best available overview of the future flood risk from surface water across York and is considered to be the most appropriate source of information for this purpose.

Flood risk from Surface Water

3.2.21 Surface water flooding occurs when rainfall exceeds the capacity of piped systems or cannot soak into the ground. It typically occurs as a result of high intensity rainfall and can be aggravated by pipe or channel blockage.

3.2.22 Detailed knowledge of the effects of surface water flooding in York is limited. Such flooding is difficult to predict and record due to its very localised effects and usually brief duration. The effect of events that have been recorded, notably in the summer of 2007, 2012, 2013 and 2019 are of localised flooding at various locations, different on each occasion, across the city. This pattern is typical in the Council's area as a whole and is considered to be due to the flat topography which does not cause rapid runoff on a large scale.

3.2.23 The EA produced the Risk of Flooding from Surface Water (RoFSW) map to assist LLFAs in assessing surface water flood risk for their PFRAs. These maps had previously been updated in 2013 and more recently in January 2025 as part of the National Flood Risk Assessment (NAFRA2).

3.2.24 The Risk of Flooding from Surface Water maps shows predicted flood effects of three likely events for High:3.3% (1 in 30), medium: 1% (1 in 100) and low: 0.1% (1 in 1000 year) in any given year at a variety of depths. The mapping represents the impact in terms of extent, depth and also future impacts of climate change from 2040 to 2060. The updated mapping (2025) has shown that the number of properties in total at risk from these surface water events are over 16,000 (3 times as many as previously estimated under the previous mapping).

3.2.25 Whilst the updated flood risk maps show a large increase in properties within York at risk from surface water flooding the properties were largely already at risk and the data is just better able to highlight this risk. Therefore, the increase in properties at risk is largely based on improvements in modelling, rainfall data etc and does not indicate a change in the characteristics or nature of surface water flood risk in York.

3.2.26 It is extremely unlikely that this number of properties would be affected simultaneously as the rainfall that causes this type of flooding is usually very localised.

Similarly, the likelihood of a medium or low risk event occurring anywhere in the Council area - a 1% or 0.1% chance of happening in any one year is very limited. On the basis of observed events, it has been found that the RoFSW is a reliable indicator of surface water flood risk locations.

3.2.27 Analysing information from investigations at known flood locations, the EA mapping and site specific modelling, it established that there is a lack of knowledge of the location, extent and condition of surface water drainage infrastructure throughout the Council's area. It identified that minimal maintenance has resulted in problems with blocked drains, compounded by the adverse effect of development on natural flow paths and the flatness of the Council's area, all of which can increase surface water flood risk on a local scale. It also concluded that the areas that have been affected by surface water are unconnected with those suffering fluvial flooding and that, throughout the Council's area, there is not considered to be a link between the two types of event.

Surface water flooding in 2012, 2013 and 2019 further confirmed this conclusion.

3.2.28 It is considered that, while the updated RoFSW indicates potential locations of surface water flooding it is not currently proposed to carry out any further site specific modelling but as extreme rainfall events occur in the future the effects will be recorded and modelled if it is considered to be of benefit in understanding the cause and delivering projects to better protect properties.

Flood Risk from Sewers

3.2.29 Rainwater falling on impermeable surfaces in developed areas drains into either surface water or combined sewers (which convey both surface water and sewage). Until approximately ninety years ago the use of combined sewers was standard practice, with excess flow in times of storm discharged through combined sewer overflows to an adjacent watercourse. A large part of the central core of the city of York is drained in this way. Post 1930s development is largely drained by separate sewerage systems with surface water sewers ultimately discharging to local watercourses. Flooding can result when the sewers are overwhelmed by intense rainfall and this can be aggravated by inadequate capacity or blockage.

3.2.30 Yorkshire Water Services (YWS) is the water and sewerage company serving the York area. Overall the sewerage system has remained largely unchanged over the years, but at some locations schemes have been implemented to address local flooding issues.

3.2.31 Reduced hydraulic capacity from siltation is a particular problem in York due to the flatness of the area and the difficulty in designing sewerage systems that are self-cleansing i.e. provides sewer flow velocities sufficient to pick up and disperse solids. This is also the case with piped and open systems in other ownerships and has been highlighted in the SWMP.

3.2.32 Further problems can occur where sewerage systems are isolated behind flood defences in times of raised river levels. Systems are in place to manage these occurrences (pumping stations or sluices), but they can be compromised and present risks to areas that are defended – i.e. Leeman Road in 2012.

- Yorkshire Water have an investment programme from 2025-2030 aimed at reducing the amount of wastewater (sewage)

being discharged into the rivers and watercourses from their storm overflows. CYC are working closely with YWS to identify opportunities to reduce flooding alongside reducing the wastewater from storm overflows.

3.2.33 Waste Water Management Plans

Flood Risk from Groundwater

3.1.32 Groundwater flooding occurs as a result of water rising up from the underlying aquifer or from water flowing from abnormal springs. This tends to occur after long periods of sustained high rainfall, and the areas at most risk are often low-lying where the water table is more likely to be at shallow depth. Groundwater flooding is known to occur in areas underlain by major aquifers, although increasingly it is also being associated with more localised floodplain sands and gravels.

3.1.33 The EA has produced groundwater susceptibility mapping which suggests that there may be a potential for groundwater flooding in the south of the Council's area, as noted in the PFRA. However, there is no experience of flooding from this source, and it is considered to be a very low risk.

3.1.34 Due to the predominance of clay across the area, drainage of land is often very poor, and there are many areas where standing water is evident after prolonged rainfall. This is not groundwater flooding, but a characteristic of the geology of the area where water cannot soak into the ground from above.

4. Investigation of flooding incidents

4.1 Overview

4.1.1 CYC as the LLFA has a responsibility to record and report flood incidents as detailed within Section 19 of the FWMA:

> **Section 19**
>
> **(1)** On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate:
>
> (a) which risk management authorities have relevant flood risk management functions, and
>
> (b) whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.
>
> **(2)** Where an authority carries out an investigation under sub-section (1) it must:
>
> (a) publish the results of its investigation, and
>
> (b) notify any relevant risk management authorities.

4.2 Section 19 investigation triggers

4.2.1 The decision as to whether a flood event is significant and merits a formal investigation or not is at the discretion of the LLFA. Following reports of flooding, an initial response will highlight the issues and where the following two criteria are met a formal investigation may be initiated under these powers:

- The incident resulted in internal flooding of the habitable area of a property or of a business premises.
- There is ambiguity surrounding the source or responsibility of the flood.

The investigation will bring all relevant information together to identify those authorities with relevant flood risk management functions and what actions they have taken and propose to take.

The report will provide the details of the conditions leading to the flooding, the impacts of the flooding, and the roles and responsibilities of all operating authorities in the area. Recommendations and conclusions will be given in full cooperation with all relevant risk management authorities and other partners.

4.2.2 Following approval by the Council the report on the investigation will be published on our website.

The Section 19 report does not compel all involved to take action and is no guarantee that similar issues will not occur again in future. All recommendations will be subject to funding and priority consideration by each responsible authority. It is recommended that the reports are considered by the North Yorkshire Flood Risk Partnership to enable recommendations to be included in formal funding programmes as necessary.

4.2.3 Three previous S.19 reports have been produced and published at:

- City Wide - **13th August 2018**
- Badger Hill/Hull Road – 10th June 2012
- Leeman Road – 26/27th September 2012
- Various locations – 26th December 2015

4.3 Informal investigations

4.3.1 Many drainage problems and minor flood events will be of a localised nature or they may be of a recurring nature from a well-known source of flood risk. In such cases the Section 19 report trigger may not be relevant, and a formal report may not be initiated.

4.3.2 The day-to-day work of the CYC Flood Risk Management team and the flood risk management functions of all Risk Management Authorities will be called upon in such situations to assess the impacts of an event and to ensure the issues are understood, prioritised and acted upon as necessary.

5. Legislative framework and context of the strategy

5.1 Introduction

5.1.1 This section provides a guide to the legislative context of the strategy and how it fits in the Council's corporate strategy.

The legal and regulatory framework

5.2 The Pitt Flooding Review (June 2008)

5.2.1 In June 2008, Sir Michael Pitt published his report "Learning Lessons from the 2007 Floods", which called for urgent and fundamental changes in the way the country is adapting to the increased risk of flooding. The report includes 92 recommendations, of which 21 are specifically designated to local authorities.

5.2.2 The report identified that there were significant gaps in the powers held by various bodies in trying to reduce and respond to the risk of flooding. The Government response to the Pitt Review was the Flood and Water Management Act 2010 which is the principal legislation overseeing flood risk management in England.

5.3 The Flood and Water Management Act 2010

5.3.1 The Flood and Water Management Act 2010 (FWMA) requires flood risk to be managed by a National Strategy for England and Wales, prepared by the EA, with Local Strategies prepared by LLFAs.

5.3.2 LLFAs have significant roles and responsibilities to manage and reduce flood risk in a co-ordinated way by:

- Defining who is responsible for managing the various sources of flood risk.
- Enabling effective partnerships to be formed.
- Encouraging more sustainable forms of drainage in new development.

5.4 The National Flood and Coastal Erosion Risk Management Strategy for England (FCRM), 2020

5.4.1 The FWMA requires the Environment Agency to 'develop, maintain, apply and monitor a strategy for flood and coastal erosion risk management in England'.

The Agency has updated its national strategy and has published the National Flood and Coastal Erosion Risk Management Strategy for England 2020 (the National Strategy), the strategy was developed following a period of extensive consultation with all RMA's and stakeholders.

5.4.2 The Strategy sets a challenging long term vision: 'A nation ready for, and resilient to, flooding and coastal change – today, tomorrow and to the year 2100.' The National Strategy provides strategic information about the various kinds of flood risk, sets out the principles for how flood risk from all sources should be managed and identifies the organisations responsible for their management.

5.4.3 The Strategy has three long-term ambitions:

- **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

5.4.4 The FWMA requires risk management authorities (Environment Agency, local authorities, internal drainage boards, sewerage companies and highway authorities) to act consistently with the National Strategy in carrying out their flood and coastal erosion risk management functions.

The national strategy is available to view at: National Flood and Coastal Erosion Risk Management Strategy for England.

5.4.5 The York Local Flood Risk Management Strategy has been developed around these guiding principles to ensure that communities in York and the wider North Yorkshire catchment benefit from a coordinated and fully aligned approach. All aspects of the York and North Yorkshire Strategies have been coordinated to achieve this aim.

5.5 The 25 Year Environment Plan

Governments 25 Year Environment Plan was published in 2019 and set out the vision for a greener future to improve the environment, this also provided much of the wider strategy context for the National Strategy.

The 25 Year Environment Plan identifies a number of areas that relate to this strategy:

- Thriving plants and wildlife.
- Reduce the risk of harm from environmental hazards.
- Enhance the natural environment.
- Mitigate and adapt to climate change.

5.6 Local Flood Risk Management Strategies

5.6.1 The FWMA designates CYC as the Lead Local Flood Authority (LLFA) for its area. This gives it duties and powers to lead the co-ordination of flood risk management as well as the specific role of managing flood risk from local sources, which are identified as:

- Surface water
- Ordinary watercourses
- Groundwater

5.6.2 The EA is responsible for managing the risk of flooding from the main rivers and reservoirs. YW owns and manages the public sewer network and is responsible for managing its flood risk. Ainsty (2008), Foss (2008), Kyle and Upper Ouse, and Ouse and Derwent IDBs are responsible for managing flood risk within their defined districts. Further information is in Sections 3 and 6.

5.6.3 The FWMA places a duty on all risk management authorities to act in accordance with the relevant local flood risk management strategy when carrying out their flood risk management functions. These functions are subject to scrutiny in accordance with the LLFA's democratic processes.

5.6.4 The FWMA gives CYC responsibilities as a LLFA:

- Maintain a register of drainage and flood assets
- Investigate flooding incidents
- Prepare a local flood risk management strategy
- Power to designate flood risk management structures
- Power to undertake works
- Consenting to works on ordinary watercourses

5.6.5 The powers are permissive and can be used at the discretion of the LLFA.

5.7 The EU floods directive and the flood risk regulations 2009

5.7.1 The Flood Risk Regulations 2009 came into force on 10 December 2009, transposing the EU Floods Directive into UK law.However, following Brexit, the UK is no longer legally bound by EU directives, including the Floods Directive. None the less, the UK initially retained much of the EU environmental legislation through the European Union (Withdrawal) Act 2018, which converted EU law into domestic law on exit day

5.7.2 A requirement of the EU Directive was for the EA to assess, map and manage flood risk from the sea, main rivers and reservoirs, and require LLFAs to do so for other flood risks. The approach is based on a 6 year cycle of planning which begins with the publication of Preliminary Flood Risk Assessments (PFRA), Hazard and Risk Maps and Flood Risk management Plans. Second cycle plans were published in 2022 and will be in place until 2027

5.7.3 The PFRA is a high level screening exercise bringing together information on past and future significant local flood risk based on readily available information, it identifies significant flood risk areas. The Council

has worked with the Environment agency on two PFRA submissions across both cycles, both have concluded that York does not exceed the national local flood risk threshold and therefore no further action is required to assess these local risks.

5.7.4 The EA has published second cycle Flood Risk Management Plans for Main Rivers and the sea as part of the requirements of the Flood Risk Regulations. The Council has cooperated with the EA in the preparation of plans for the Humber River Basin District to ensure flood risks from local sources are included in the plans. The plan has been widely consulted, actions from the Flood Risk Management Plan have been included in the Strategic Action Plan in Section 2 of this report.

5.8 National Planning Policy Framework

5.8.1 The National Planning Policy Framework (NPPF) was introduced in 2012 by the government to make the planning system less complex and more accessible, it was revised on 20 July 2021 and again in December 2024. Further detail on flood risk management requirement in planning policy and delivery can be found in Section 7: Development Management.

5.9 Emergency Flood Planning

5.9.1 Emergency planning and incident management are vital to reduce the impact of flooding on people and property. Appropriate and timely action can minimise its consequences and can have a positive effect on the wellbeing of individuals and the resilience of communities.

5.9.2 The Civil Contingencies Act 2004 is the main piece of legislation governing emergency planning which includes flooding. It formalises duties on local authorities, the emergency services and other organisations.

5.9.3 The Council River Flood Emergency Plan provides a co-ordinated multi-agency response to river flooding with the aim of minimising its impact on the public and key infrastructure. It is prepared, maintained and updated by the Council's Emergency Planning Unit and is updated every 3 years.

Where required CYC will work alongside NYLRF partner agencies to respond to surface water incidents and elements of the Emergency Plan may be used during the response.

Land drainage and water quality

5.10 Land drainage law and regulation

5.10.1 The Land Drainage Acts 1991 and 1994 give CYC permissive powers to maintain the flow in ordinary watercourses within the City boundary and to ensure they are free from obstruction. The Council can require landowners to carry out work to remove obstructions and maintain flow. It can also carry out works on ordinary watercourses and undertake works on private land to prevent flooding. The IDB has similar powers within its districts in York. The EA also has similar powers in respect of ordinary watercourses and main rivers.

5.10.2 Although CYC and the EA have permissive powers relating to the maintenance of flow in watercourses they are only legally responsible for the physical maintenance of the watercourses where they themselves are the landowner.

5.11 Riparian ownership

5.11.1 Owners of land or buildings next to a watercourse, or with a watercourse running through their land or buildings are defined as riparian owners under common law. The EA have developed guidance for those who live and own land adjacent to a watercourse, this informs riparian owners' of their responsibilities and rights. In summary, these responsibilities relate to the upkeep of watercourses and allowing water to flow unhindered and free from pollution, this can be found at the following link: Owning a Watercourse.

5.11.2 RMA's will seek to ensure riparian owners carry out appropriate works to ensure they deliver their responsibilities, however, there will be times where this is not possible and in such occasions RMA's permissive powers may be used where risks justify action. This will be addressed on an individual case by case basis.

5.12 The Water Framework Directive 2000

5.12.1 The EU Water Framework Directive (WFD) came into effect in 2000 and was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003. Member States must aim to reach good chemical and ecological status in inland and coastal waters.

5.12.2 The Water Framework Directive establishes new and better ways of protecting and improving rivers, lakes, groundwater, transitional (where freshwater and sea water mix) and coastal waters. It is designed to:

- prevent deterioration in the classification status of aquatic ecosystems, protect them and improve the ecological condition of waters;
- achieve at least good status for all waters by 2021 or 2027;
- promote sustainable use of water as a natural resource;
- conserve habitats and species that depend directly on water;
- progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and
- contribute to mitigating the effects of floods and droughts.

5.12.3 To deliver this the EA, as the responsible authority, has embarked on River Basin Management planning to develop new and better ways of protecting and improving the water environment. York is located in the Humber River catchment and is part of the Swale, Ure, Nidd and Upper Ouse sub-catchment with the Yorkshire Derwent sub-catchment forming its eastern boundary. The second cycle of plans were published in 2022, a 6-year cycle of planning is also in place for these plans.

5.12.4 It is important that measures to manage local flood risk do not cause deterioration of water bodies and the activities of all of the RMAs can contribute to achieving WFD targets and objectives.

Opportunities for this should be considered as an integral part of any flood risk management activities, and examples of these are:

- Consenting works on watercourses
- Maintaining flow in watercourses

- Promoting the use of SuDS with developers and the highway authority
- Approving, and when required adopting, SuDS which comply with agreed standards of design and construction
- Planning policies relating to environmental issues
- Exclusion of foul sewage from watercourses and surface water drains and sewers

5.13 York Council Plan known as 'One City, for all'

5.13.1 The Council has set out its programme for the years 2023 to 2027. The targets it is committed to meet are in 8 priority areas:

- Health and wellbeing
- Education and Skills
- Economy and good employment
- Transport
- Housing
- Sustainability
- How the council operates

5.13.2 The Strategy will be updated in line with revised corporate plans. It is worth noting that in 2024 the government revised the existing housing targets for local authorities with an increased target of 1,251 (up from 1,020) over a 5 year period. Flood risk management interventions are well placed to facilitate, safeguard and enhance many features of the current plan and are likely to be key contributors to the aspirations of future Council plans.

5.13.3

6. Risk management authorities and their functions

6.1 Partnership Working and the Functions of Risk Management Authorities

6.1.1 The FWMA defines certain organisations as risk management authorities (RMAs) to work with the LLFA in managing flood risk. In York these are:

- The LLFA (City of York Council)
- The Highways Authority (City of York Council)
- National Highways (A64)
- The Environment Agency
- Yorkshire Water Services as sewerage undertaker
- Ainsty (2008), Foss (2008), Kyle and Upper Ouse, and Ouse and Derwent Internal Drainage Boards as bodies responsible for land drainage in their respective districts
- Adjacent LLFAs – North Yorkshire Council (NYC) and East Riding of Yorkshire Council (ERYC)

6.1.2 As well as having specific responsibilities and functions relating to flooding, the RMAs have shared duties and powers under the Act, which are:

- A duty to act consistently with the Local Flood Risk Management Strategy when carrying out their flood risk management functions
- A duty to work in partnership to manage flood risk in the York area and to co-ordinate flood risk management activities
- A duty to share information and data relating to their flood risk management activities
- A duty to be subject to the scrutiny of the LLFA's democratic processes in respect of their flood risk functions
- The power to delegate flood risk management functions to other RMAs, subject to mutual agreement

6.2 City of York Council as Lead Local Flood Authority

6.2.1 CYC has an important role as LLFA in delivering local flood risk management in its area and in co-ordinating the activities of the relevant agencies. As well as this general responsibility, the LLFA has specific management functions relating to local flood risk. This is defined as flooding from surface water, groundwater and ordinary watercourses.

6.2.2 Risk management functions are expressed as duties or permissive powers. A duty is a legal obligation, and the use of a power is discretionary.

6.2.3 CYC's risk management duties under the FWMA are:

- A duty to develop, maintain and apply a Local Flood Risk Management Strategy
- To develop and maintain information on flooding from surface water, ordinary watercourses and groundwater
- A duty to investigate incidents of flooding in its area where appropriate and necessary and to publish reports
- To maintain a register of structures and features which have a significant effect on flood risk

6.2.4 CYC's permissive powers are:

- To designate any structure or feature that affects flooding (Schedule 1 of the FWMA)
- To decide whether third party works on ordinary watercourses can take place and, where appropriate, grant consent to the works in accordance with the Land Drainage Act 1991
- To carry out works to manage flood risk from surface water and groundwater (Section 14A, LDA).

6.2.5 In addition to this CYC has powers under the Land Drainage Act 1991 to:

- Maintain and improve ordinary watercourses and build new worksServe notice on any person or body requiring them to

carry out necessary works to maintain flow in ordinary watercourses(Sections 21, 24 & 25 LDA).

- Powers to make byelaws (Section 66, LDA) to secure the efficient working of a drainage system; regulate the effects on the environment of a drainage system; secure the effectiveness of works (section 14A and Section 39 of the FWMA.

6.2.6 Although CYC has powers to work in Ordinary watercourses it is only responsible for the maintenance of watercourses where it is the riparian owner.

6.3 Investigation of flooding incidents

6.3.1 As LLFA, the Council has a responsibility to investigate any significant flood event and publish a report (S19 of the Flood and Water Management Act 2010). This is to determine:

- which risk management authorities have relevant flood risk management functions, and
- whether each of those risk management authorities has exercised, or is proposing to exercise, those functions in response to the flood.

6.3.2 The decision as to whether a flood event is significant or not is at the discretion of the LLFA. The Council approach to flood risk management investigations is detail in Section 4: Incident Review Protocol.

6.4 Maintaining a register of assets

6.4.1 The register of assets will contain details of structures and features which have a significant impact on flood risk. This will include information on its ownership and state of repair. The register will include assets which are primary defences against flooding such as embankments and flood walls, and features such as watercourses and culverts which are critical to the conveyance of water. This register will be available for public inspection.

6.4.2 The purpose of the register is to:

- Raise awareness of the important flood risk structures and features
- Help identify suitable maintenance regimes
- Inform investigations into flooding incidents

6.5 The council as highway authority

6.5.1 CYC has a duty to maintain the public highway network, the only exception being the A64 which is a trunk road. It has a responsibility under the Highways Act 1980 to drain the highway of surface water and maintain highway drainage systems. The Highway Authority may undertake works on the highway or the adjoining land for the purpose of draining the highway, or to prevent surface water flowing on to it and causing flooding.

6.5.2 Highway gully locations are recorded on the CYC highway management systems, but there are limited records of the drainage system serving them or details of connectivity. The YWS statutory sewer records provide some guidance where public sewers may serve the gullies, but there is no information in many areas of the City regarding the location of any highway drainage network. The SWMP established that a large number of major arterial roads around York have no records of drainage infrastructure. Significant investment has been targeted in this area over the lifespan of the previous strategy and a field based remote data management system has been adopted and the dataset has been increased, this information is used to inform investment bids and a prioritised delivery of work programmes.

6.6 The council as planning authority

6.6.1 The City of York Council Local Plan sets out:

- At a strategic level what is going to happen where, and how it is going to happen
- The preferred and acceptable uses for land in the Council's area
- Criteria and policies for determining planning applications

6.6.2 The role of the planning authority in flood risk management is:

- To avoid inappropriate development in areas at risk of flooding
- To mitigate the impacts of surface water runoff from new development

6.6.3 CYC takes a risk-based approach when determining planning applications in accordance with the National Planning Policy Framework. This assesses both the vulnerability to flooding and the risk of causing flooding. The SFRA contains guidelines for developers and planners. Further information is available in Section 7 of this strategy.

6.7 The council as riparian owner

6.7.1 As a landowner, CYC is the riparian owner of Main River and ordinary watercourses passing through its land. Its duties as a riparian owner are:

- To let water flow over its land without any obstruction, pollution or diversion which would affect the rights of others
- To accept flood flows through its land, even if these are caused by inadequate capacity downstream
- To maintain the bed and banks of the watercourse free of obstructions which may affect the flow of water

6.8 The Environment Agency

6.8.1 The Environment Agency (EA) and the Department of the Environment and Rural Affairs (DEFRA) have jointly developed and implemented a National Flood and Coastal Erosion Risk Management Strategy for England. The EA has a strategic overview role for all sources of flooding as well as an operational role in managing flood risk from main rivers and reservoirs.

6.8.2 The National Strategy outlines the EA's strategic functions as:

- Providing an overview of the current and future risks from all sources of flooding and coastal erosion
- Advising government on the management of risks from all sources of flooding and coastal change, including the impacts

on people, businesses, infrastructure and the environment, as well as the future investment needs

- Providing data and evidence – through risk mapping, modelling and assessment – to help inform the decisions made by risk management authorities at a range of spatial scales

- Providing advice and guidance on improving information sharing and collaboration between risk management authorities and between the owners of flood and coastal defences

- Facilitating effective partnerships in local places where there is local support that partnership working will help to reduce risk from flooding and coastal change

- Providing evidence and advice to inform risk management authorities, planning authorities and national infrastructure providers on how they can plan and adapt to all sources of flooding and coastal change in the face of a changing climate

- Providing advice to risk management authorities on how investments to manage flooding and coastal change projects can deliver integrated nature-based solutions that protect and enhance the environment

- Providing advice on the skills risk management authorities need to effectively address flooding and coastal change

- Coordinating risk management authority investments in managing all sources of flooding and coastal change through regional programmes, which are approved by regional flood and coastal committees

- Administering national grants and local levies to support the delivery of regional programmes, with the consent of regional flood and coastal committees

6.9 The Environment Agency's operational role

6.9.1 The EA's operational functions are:

- Risk based management of flooding from main rivers – the Ouse, Foss and Derwent together with lengths of Burdyke,

Blue Beck, Holgate Beck, Tang Hall Beck and Osbaldwick Beck. This includes permissive powers to carry out works including flood defences

- Regulation of works in main rivers through the consenting process
- Regulation of reservoirs with a capacity exceeding 25,000m^3
- Emergency planning, working with the Met Office to provide forecasts and warnings of flooding from main rivers
- The maintenance and operational management of main river assets including flood defences throughout the Ouse, Derwent and Foss catchments in the city through the management of critical infrastructure such as raised flood defence walls, banks and pumping stations.
- Statutory consultee to the development planning process
- The power to serve notice on any person or body requiring them to carry out necessary works to maintain the flow in main rivers.

6.10 Yorkshire Water

6.10.1 Yorkshire Water is one of eleven water and sewage companies responsible for water supply and disposal in England and Wales. Their activities are regulated by OFWAT through the Water Industry Acts 1991 and 1999, and the Water Act 2003 to ensure that consumers' interests are protected. Their flood risk management responsibilities relate to their operations as sewerage undertakers, reservoir owners and providers of infrastructure to new development.

6.11 Yorkshire Water services and their flood risk management functions

6.11.1 Most rainwater falling onto properties and roads drains into the public sewer system, which in York is owned by Yorkshire Water Services. It enters either:

- The combined sewer networks and on to sewage treatment works, or

- Surface water sewer networks and discharged to rivers and streams

As the sewerage undertaker for York, YWS are a risk management authority under the FWMA, responsible for managing the risk of flooding due to storm water from its sewers.

6.11.2 YWS have the following risk management functions in relation to its sewerage services:

- To operate, maintain and upgrade the sewer system to agreed standards advised by Ofwat and DEFRA
- To assess the vulnerability of assets to flooding and prioritise investment
- To maintain a register of properties affected by, or at risk of flooding
- To enhance the sewer system in accordance with asset management plans approved by Ofwat
- To respond to flooding from sewers
- To co-operate with the LLFA in investigating significant flooding incidents
- To adopt private sewers where appropriate
- To be subject to scrutiny from LLFAs as part of their democratic process
- To act consistently with the national flood risk management strategy and have regard to the local strategy

6.11.3 YWS have an important role to play in the drainage of new development. These will usually drain, with discharge rates controlled, to separate surface water sewers either constructed or adopted by YWS in accordance with powers under the Water Industry Act 1991.

6.12 Internal Drainage Boards

6.12.1 Internal Drainage Boards (IDBs) manage land drainage and flood risk in their defined districts. They have a duty to exercise general

supervision over all matters relating to the drainage of land, and their powers are set out in their byelaws which are approved by Defra.

6.12.2 Membership and financial matters are covered by the Land Drainage Act 1991. They are funded by landowners as direct ratepayers and local authorities who pay a special levy in respect of non-agricultural land.

6.13 Internal Drainage Boards and their flood risk management functions

6.13.1 Internal Drainage Board functions include the supervision of land drainage and flood defence works on ordinary watercourses or other flood sources as requested by local authorities or the Environment Agency.

6.13.2 Each IDB has permissive powers to undertake work to provide water level management within their Internal Drainage District (IDD), undertaking works to reduce flood risk to people and property and manage water levels for local needs. Much of their work involves the maintenance of rivers, drainage channels, outfalls and pumping stations, facilitating drainage of new developments and advising on planning applications. They also have statutory duties with regard to the environment and recreation when exercising their permissive powers.

6.13.3 There are four IDBs which overlap into the CYC area, their boundaries can be seen in figure 3.1:

- Ainsty (2008) Internal Drainage Board
- Foss (2008) Internal Drainage Board
- Kyle and Upper Ouse Internal Drainage Board
- Ouse and Derwent Internal Drainage Board

6.14 Adjacent LLFAs

6.14.1 The two adjacent LLFAs, North Yorkshire Council (NYC) and East Riding of Yorkshire Council (ERYC), have the same duties and responsibilities as the Council.

6.14.2 With the River Derwent forming the boundary between ourselves and ERYC, we work closely with themselves and the EA to ensure the effective management of this watercourse.

6.14.3 Our links, partnerships and joint working with NYC is fundamental to an effective delivery of our Flood Risk Management service. Both authorities and other RMAs need to understand the impact of upstream management practices on communities downstream. This is essential not just for York with NYC or EA activities on the River Swale, Ure or Nidd catchments, but also for the former Selby DC area of NYC downstream of York.

6.14.4 These relationships are strong and we share views and approaches to strategic flood risk management. Our Local Flood Risk Management Strategies have been aligned and will be monitored through the North Yorkshire Flood Risk Partnership. A number of actions in the action plan will further develop catchment scale solutions and partnership delivery during the lifespan of the strategy.

6.15 Yorkshire Regional Flood and Coastal Committee

6.15.1 The Yorkshire RFCC comprises appointed members from the 14 Lead Local Flood Authorities in the Yorkshire area with 5 independent members from the wider industry or academia. The committee has three main purposes:

- to ensure there are coherent plans for identifying, communicating and managing flood and coastal erosion risks across catchments and shorelines
- to encourage efficient, targeted and risk-based investment in flood and coastal erosion risk management that represents value for money and benefits local communities
- to provide a link between the Environment Agency, LLFAs, other risk management authorities, and other relevant bodies to build understanding of flood and coastal erosion risks in its area

6.16 North Yorkshire Flood Risk Partnership

6.16.1 The Yorkshire RFCC area represents a wide range of geographic, social and environmental challenges, similarly the type and extent of flood risks across the area change significantly. Four flood risk partnerships have been set up based on the sub-regional pattern. CYC sits on the North Yorkshire Flood Risk Partnership with North Yorkshire Council, Internal Drainage Boards, Yorkshire Water Services and the Environment Agency.

6.16.2 The two LLFA's alternate the chairing of the meeting and all RMA's contribute to the makeup and content of the meetings. One of the key outcomes from the meeting is a locally prioritised programme of flood risk management works which are used to influence and develop the regional programme developed by the RFCC.

7. Development management

7.1 National Planning Policy Framework

7.1.1 The National Planning Policy Framework (NPPF) was introduced in 2012 by the government to make the planning system less complex and more accessible, the framework was revised on 20 July 2021. It has simplified the number of policy pages about planning and has enhanced detail relating to flood risk management from the earlier Planning Policy Statement 25.

7.1.2 The York Strategic Flood Risk Assessment provides more detailed information on the main rivers and associated flood risk. It supports the management of flood risk in future development and was produced in response to the NPPF which is current Government policy on planning for flood risk. It assesses the different levels of fluvial flood risk in the York area and maps these to assist with statutory land use planning.

7.1.3 The NPPF policy on flood risk states that:

> "Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere. All plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property. They should do this, and manage any residual risk, by:
>
> - Applying the sequential test and then, if necessary, the exception test as set out below
> - Safeguarding land from development that is required, or likely to be required, for current or future flood management
> - Using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding, (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management); and

- Where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations."

7.1.4 The government requires that the NPPF is taken into account in the preparation of local plans and is a material consideration in planning decisions. It supports a positive approach that reflects the presumption in favour of sustainable development when considering development proposals, CYC will take full consideration of the SFRA requirements.

7.1.5 City of York Council have developed wider guidance to support applicants through flood risk and drainage requirements for all new developments and redevelopment proposals. The document outlines the data needed and assessments required to be submitted through the planning process for approval by the Flood Risk Management Team - Sustainable Drainage Systems Guidance for Developers, the document should be used alongside the Strategic Flood Risk Assessment.

7.1.6 Further planning approvals and consents may be required by the Environment Agency or Internal Drainage Boards, the guidance document outlines these requirements but direct consultation with the relevant organisation may be required. Byelaws and consents are in place to ensure drainage works do not overwhelm receiving watercourses, maintain their water quality and ecological status and to ensure that the maintaining authority can access the channel for future maintenance and operational works.

7.2 Local Plan

7.2.1 The Local Plan is the development plan for CYC drawn up in accordance with Section 20 of the Planning and Compulsory Purchase Act 2004 and the NPPF. It addresses the spatial implications of economic, social and environmental change and set out the opportunities for development and clear policies on what will or will not be permitted and where.

7.2.2 The current Local Plan, published in February 2025, was approved for development management purposes and underpins our development management decisions.

7.2.3 Two policies contained within the local plan detail the requirements with regards to flood risk and drainage when determining building and development:

- **ENV4: Flood risk**

  New development shall not be subject to unacceptable flood risk and shall be designed and constructed in such a way that mitigates against current and future flood events.

  An assessment of whether proposed development is likely to be affected by flooding and whether it will increase flood risk locally and elsewhere in the catchment must be undertaken. The assessment of proposed development against its flood risk vulnerability and its compatibility with this vulnerability, as defined in the most up to date Strategic Flood Risk Assessment (SFRA), will determine whether development is appropriate, what detailed policies for the resultant flood zone classification, as stated in the SFRA will apply, and whether a further Exception Test (that makes provision for sites in a zone with a higher probability of flooding to be assessed against wider sustainability benefits, provided that the flood risk posed is controlled and mitigated to an acceptable level) is subsequently required.

  Where flood risk is present, development will only be permitted when the local planning authority is satisfied that any flood risk within the catchment will be successfully managed (through a management and maintenance plan for the lifetime of the development) and there are details of proposed necessary mitigation measures.

  A flood risk assessment must be submitted with any planning application where flood risk is an issue, regardless of its location within the flood zones. In addition, a site specific flood risk assessment that takes account of future climate change must be carried out for all planning applications of 1 hectare or greater in Flood Zone 1 and for all applications in Flood Zones 2, 3a, 3a(i) and 3b. Areas of greater flood risk may be utilised for appropriate green infrastructure spaces.

- **ENV5: Sustainable drainage**

  For all development on brownfield sites, surface water flow shall be restricted to 70% of the existing runoff rate (i.e. 30% reduction in existing runoff), unless it can demonstrated that it is not reasonably practicable to achieve this reduction in runoff.

  Sufficient attenuation and long term storage should be provided to ensure surface water flow does not exceed the restricted runoff rate. Such attenuation and storage measures must accommodate at least a 1 in 30 year storm. Any design should also ensure that storm water resulting from a 1 in 100 year event plus the recommended additional flows from the latest climate change advice, to account for climate change and surcharging the drainage system, can be stored on the site without risk to people or property and without overflowing into a watercourse or adjacent areas.

  Where these surface water run-off limitations are likely to be exceeded development may be approved provided sufficient facilities for the long-term storage of surface water are installed within the development or a suitable location elsewhere. Long term surface water storage facilities must not cause detriment to existing heritage and environmental assets.

  For new development on greenfield sites, surface water flows arising from the development, once it is complete (and including any intermediate stages), shall be no higher than the existing rate prior to development taking place, unless it can be demonstrated that it is not reasonably practicable to achieve this.

  Sustainable Drainage System (SuDS) methods of source control and water quality improvement should be utilised for all new development, to minimise the risk of pollution and to attenuate flood volumes. Such facilities should be provided on-site, or where this is not possible, close to the site.

8. Community Action and Resilience

8.1 Community Resilience

8.1.1 We cannot always prevent floods from happening. It is therefore essential that our communities have an understanding of their flood risk so that they can prepare and take appropriate action before, during and after a flood. This action, along with any action of the Council can help to minimise the impacts of flooding. City of York Council, as the Lead Local Flood Authority and all supporting RMAs will aim to build knowledge of flood risk in the Council area through the delivery of the Strategy.

8.1.2 A wide range of information is available to inform residents and businesses what can be done to prepare for flooding and other emergencies. This is predominantly managed through the work of the North Yorkshire Local Resilience Forum (NYLRF) and the City of York Council Emergency Planning Unit.

8.1.3 Communities are strongly encouraged to engage with the risk management authorities by reporting flood incidents or blocked drains/watercourses, this helps RMAs to respond to incidents before problems arise and to learn from flood events to develop interventions to reduce their future impacts.

8.1.4 There are a number of preparations and actions that individuals and communities can take to make themselves more resilient:

8.1.5 Household and Community Emergency Plans

It is recommended that both personal and community emergency plans are prepared. Creating a plan enables families and communities to identify their risks and actions they may need to take should certain criteria be met.

Simply by creating plans, people automatically become more aware of risk.

Parish/Ward Councils usually take on the responsibility of creating a community emergency plan, however any community group can create one should they wish to do so.

For more information on emergency plans, communities should contact the Emergency Planning team.

Templates and information are also available on the NYLRF website:

- Community Plans
- Household Plans

8.1.6 Grab Bags

Along with an emergency plan, it is recommended that a Flood Grab Bag is created. Preparing a few essential items such as water and a torch, along with copies of important documents such as house insurance can reduce a lot of stress and time wasted should people need to be evacuated from their property. Further information can be found here.

8.1.7 Flood and Weather Warnings

The EA have a Flood warning system that is available for the public to sign up to receive by phone, text or email. This is an advance warning system which warns people of rising risks and river levels.

Details of the EA Flood Warnings Direct service and how to sign up can be found here: Sign up for Flood Warnings. The EA website also has a page where river levels can be monitored in real time (updated every 15 minutes in a flood): River, Sea, Groundwater and Rainfall Levels

The Met Office provide severe weather warnings for the public. They can either be accessed via their website, via an app or via email when signed up for alerts. These warnings cover a range of weather types, not just rain and storms. Details of the Met Office weather warnings and how to sign up for them can be found here: www.metoffice.gov.uk.

Yorkshire Ready Together it is an accessible, free, and real time conversational tool that helps users prepare for major risks in their own time. The intention was to create a way for businesses, communities, and individuals to talk to an expert about any major risks or emergencies that might affect them. It has been developed by the Local Resilience Forums that cover Yorkshire and the Humber.

8.1.8 Property Flood Resilience

A range of flood resilience products are available to prevent water from entering properties and reduce its impacts. A range of door barriers and airbrick covers prevent flood water access into the fabric of the building and sewer pipe valves and bungs can prevent sewerage ‘backing up’. More complex arrangements of pumps or the ‘tanking’ of basements to

prevent groundwater penetration can be carried out where the flood water sources are more difficult to manage.

It is important to understand the type of flood risk that properties face and the limitations and advantages of using property level resilience measures, the EA and council can provide a wide range of information in this respect and, whilst advice can be sought from both, recommendations or endorsement of any specific product cannot be offered.

It is ultimately the responsibility of the home or premise owner to consider the ways in which they can make their property more resilient to flooding. The National Flood Forum 'Blue Pages' has advice and suggested supplies of property flood resilience products: www.bluepages.org.uk.

8.1.9 Flood Wardens

York has a small number of flood wardens who work with the EA to report any flooding issues in their area. They are also asked to report any issues which may cause a flood risk e.g. blocked drains, culverts or trash screens.

Flood wardens are recruited and trained by the EA in conjunction with the local authority.