

Appendix 6 - Cambridgeshire Flood Risk Management Strategy

ACTION PLAN

Introduction

This appendix sets out the actions required to achieve the objectives of this strategy, this Action Plan will be reviewed annually with details being subject to change as project considerations or dependencies influence local priorities and deliverability.

Navigating this Action Plan

The actions in this appendix are listed under the objectives that they look to address. There is a range of information included within each action to describe the ambitions for those actions these include;

- **The objective titles**
- **Titles and reference numbers for each action**
- **Description** – This text box looks to provide an overview of the action with details where they are available. Annual progress will be included here. In some instances the actions are already progressing or nearing completion as such there is a range in the levels of detail provided. This area will also be used to record potential opportunities and barriers to delivery.
- **Timescale** – This box incorporates the approximate period over which the project is expected to be carried out, many of these timescales span to the end of this strategy in 2027, this may be for a number of reasons including instances where multiple interventions are required in a catchment to achieve an action and some elements of these actions require greater preparation work to be delivered.
- **Cost** – Where possible cost brackets have been included, in many instances further investigations will be required before costs can be estimated. Details of what may be required, such as officer time, are highlighted where they can be predicted. If funding is secured it will be noted.
- **Drivers** – This sets out the primary influence in the need for the action or the way in which it will be delivered, more information about these drivers can be found in the Strategy document or through external sources.
- **Lead partner/ Other bodies** – A list of potential stakeholders for that action
- **District** – This will set out the District in which the action is expected to occur, county wide actions will be noted as 'All'
- **Progress** – The progress of a given action will be recorded here and updated annually as; Not started, Progress, Completed, At risk, Some obstacles

Objective 1: Understanding flood risk in Cambridgeshire

1.5A – Investigations into Flood Risk in Huntingdon

Huntingdon has been identified through both the Preliminary Flood Risk Assessment and the development of the Drainage and Wastewater Management Plan as being a priority location for a better understanding of local flood risk and whether there is a need for further interventions in the drainage network, including combined sewers. As described in section 3.3.1, local experience of flooding at these locations has been comparatively low historically. Future risk needs to be reviewed and future interventions prioritised against that risk. This assessment will need to consider asset data, historic flood events and changes to risk that may be brought about by climate change.

Any interventions that are proposed will need to consider the impacts on the natural and historic environment. This action is reflected in the Anglian Flood Risk Management Plan and is anticipated to be included within Anglian Water's Drainage and Wastewater Management Plan. The county council have already been in touch with partners to provide input into strategic work in the area. Delivery of this action will need to be jointly delivered with partner organisations and links closely to 1.10A.

Lead partner: Cambridgeshire County Council **Other Bodies:** Anglian Water, Huntingdonshire District Council

Cost: Officer time plus site investigations/modelling <£50k

Timescale: 2022 – 2027

Drivers: Flood Risk Management Plan, Drainage and Wastewater Management Plans, Local Flood Risk Management Strategy, National Level Measures

District: Huntingdonshire

Progress: Ongoing

1.6A – Updating wet spots and understanding of the impact of changes in climate

As a part of the original Local Flood Risk Management Strategy the county council carried out an assessment to better understand areas of greatest risk in Cambridgeshire based on the national surface water flood risk maps.

Similar to the process carried out as a part of the Preliminary Flood Risk Assessment, this highlights anticipated risk based on flood risk models but does not necessarily incorporate existing knowledge or make allowances for Climate Change. National Flood Risk Assessment 2 (NaFRA 2) is currently underway and due to provide updated maps by 2024. NaFRA2 is anticipated to provide predictive estimates for the impacts of climate change.

In the interim the county council is updating the wet spots to incorporate locations where flooding has been reported and flood risk investigations have taken place, this will provide an updated list of wet spots which will therefore express both the predicted risk and experienced flooding. This updated list is anticipated in 2022 and a review of this will be considered after the release of NaFRA2 in 2024, at which point any further flooding reports and local understanding can also be incorporated. This local understanding is expected to be improved by the delivery of many of the actions within this strategy.

Should funding opportunities arise the county council will look to improve local modelling which can then be considered within these updates. The list in the strategy would then be updated at the next review point in 2027-2028.

Lead partner: Cambridgeshire County Council **Other Bodies:** All

Cost: Officer time plus site investigations/modelling <£50k

Timescale: 2022 - 2027

Drivers: Local Flood Risk Management Strategy, National Level Measures, Flood Risk Regulations, Climate Change and Environment Strategy

District: All

Progress: Ongoing

1.7A – Developing solutions to improve catchment understanding

Investigations into flood events can highlight gaps in knowledge in areas such as the functionality and connectivity of surface water assets, a part of the investigations is to improve that understand with partners and as such this was identified as National Level Measure.

Whilst there is no statutory function for the county council to explore catchment interactions beyond the investigation there are clear benefits for gathering this knowledge, including sharing that learning with local communities or partners to help coordinate flood risk management activities, support future funding bids and to provide a better baseline of evidence for the Lead Local Flood Authority to respond to planning applications for new developments.

Resources in this are constrained but the county council has looked to proactively secure funding for this purpose, including submissions to Defra’s Resilience Innovation bid.

Previous progress in this area includes successfully obtaining national funding to deliver some localised modelling of flood risk and being a partner in the Anglian Rain Gauge project which will provide an opportunity to better understand how catchments react to differing rainfall events.

The County Council is currently working with partners across the Cambridgeshire and Peterborough Flood and Water Management Partnership to compile improved mapping of assets which is included as a part of the Community Flood Action Programme 3.5A.

<p>Lead partner: Cambridgeshire County Council Other Bodies: All</p>	<p>Cost: Officer time plus site investigations/ modelling <£50k</p>	<p>Timescale: 2021 – 2027</p>
<p>Drivers: Local Flood Risk Management Strategy, National Level Measures, Flood Risk Regulations</p>	<p>District: All</p>	<p>Progress: Ongoing</p>

1.8A – Future Fens: Integrated Adaptation partnership working

Cambridgeshire County Council will continue to work with Anglian Water and other partners on the development of the Future Fens: Integrated Adaptation programme and explore opportunities for projects which can provide flood risk improvements and wider benefits for residents and the environment within the Fens. The nature of the strategic approach to the environment, water resources and flood risk management will result in this work affecting all of Cambridgeshire and is likely to overlap at times with a number of other projects including the Future Fens Flood Risk Management (1.9A) and OxCam Growth Arc strategic work (4.8A)

Projects will be planned and incorporated into future updates of the Local Flood Risk Management Strategy Action Plan.

Anglian Water have introduced this project to partners locally and also as a part of the seminars in COP26.

<p>Lead partner: Anglian Water Other Bodies: All</p>	<p>Cost: Officer time</p>	<p>Timescale: Long term</p>
<p>Drivers: Local Flood Risk Management Strategy, Climate Change and Environment Strategy</p>	<p>District: All</p>	<p>Progress: Ongoing</p>

1.9A – Future Fens: Flood Risk Management partnership working

Cambridgeshire County Council will continue to work with the Environment Agency and other partners to support engagement on and develop, the vision for the Future Fens: Flood Risk Management within the Fens and Lowlands Strategic Area. This helps to deliver National Strategy objectives for the Fens.

The nature of the strategic approach to flood risk management and wider benefits will result in this work affecting all of Cambridgeshire and is likely to overlap at times with a number of other projects including the Future Fens Integrated Adaptation (1.8A) and OxCam Growth Arc strategic work (4.8A). Projects will be planned and incorporated into future updates of the Local Flood Risk Management Strategy Action Plan.

A significant amount of work has already been carried out on baseline evidence for this project which is available on the Association of Drainage Authorities website, this highlights the scale of the challenge that is faced in the future for the fens in the River Great Ouse catchment and the future phases of the project.

In future the intention is for this approach to be rolled out more widely across the fens in the Anglian region which will all face similar challenges.

Lead partner: Environment Agency Other Bodies: All	Cost: Officer time	Timescale: Long term
Drivers: Flood Risk Management Plans, National Strategy Objectives, National Level Measures	District: All	Progress: Ongoing

1.10A – Drainage and Wastewater Management Plan partnership working

As discussed in this strategy the Drainage and Wastewater Management Plan will help to inform future investment in infrastructure that will support future development and improve the resilience against existing flood risk. These plans have considered the development areas set out in the District and City Councils Local Plans. At the time of writing there is no statutory requirement for Risk Management Authorities to be involved in the development of these plans but by doing so Risk Management Authorities can provide local knowledge and share ambitions so solutions can potentially provide multiple functions where necessary. This work will include consideration of the impacts on combined sewers.

Cambridgeshire County Council has been contributing to the development of Anglian Water’s Drainage and Wastewater Management Plan alongside other local Risk Management Authorities to share local knowledge.

A draft of this plan is anticipated to be released for public consultation in the summer of 2022 with a final version later in the year, that plan will cover the period 2025-2050. More information on this can be found on Anglian Water’s website.

Lead partner: Anglian Water Other Bodies: All	Cost: Officer time	Timescale: 2022
Drivers: Local Flood Risk Management Strategy	District: All	Progress: Ongoing

1.11A – IDB catchment modelling

Internal Drainage Boards use models and live data to manage their catchments. North Level District Internal Drainage Board are currently looking at updating some of the models for their district catchments.

Lead partner: North Level IDB Other Bodies: Anglian Water, Internal Drainage Boards and LLFA partners	Cost: Officer time <£50k	Timescale: 2022 - 2027
Drivers: Partnership scheme	District: Fenland	Progress: Ongoing

1.12A – Completion of Anglian Rain Gauge project

Cambridgeshire County Council is working in partnership with a number of other Lead Local Flood Authorities, Anglian Water and the Environment Agency to install a network of rain gauges and supporting software that can provide data to support future projects and flood investigations.

This project will incorporate data from existing partners assets and be hosted on a platform shared by partner organisations. Locations for the rain gauges have been identified to ensure a spread of gauges that considers the location of existing rain gauges and access to secure sites owned by partners that could sustainably host those gauges.

The project is nearing completion with installations anticipated during 2022.

Opportunities to share the data will be explored following installation.

Lead partner: Essex County Council and Cambridgeshire County Council Other Bodies: Four other Lead Local Flood Authorities, Anglian Water, Internal Drainage Boards and the Environment Agency	Cost: Installations funded by Great Ouse Regional Flood and Coastal Committee. Officer time plus maintenance costs <£50k	Timescale: 2021-2022
Drivers: Local Flood Risk Management Strategy Objectives	District: All	Progress: Ongoing

1.13A – Integrated model for March

Following the delivery of a surface water management plan for March in 2014 the council have been working with partners to deliver the actions in that plan, however, significant barriers to delivery have consistently hindered progress. Project viability means progress as part of the normal capital programme is not always feasible.

Comprehensive modelling of all flood risk is needed to fully quantify the flood risk in the town, identify innovative solutions, and unlock more funding for the projects.

March is highlighted as a nationally significant Flood Risk Area, has experienced repeated flooding and is also a priority catchment for the Drainage and Wastewater Management Plans. Success with securing funding and the ability to deliver projects has been mixed.

The county council and its partners continue to look for opportunities to improve the resilience to flood risk in March.

Outputs from the Integrated model will be used to inform future proposals under 2.10A

Lead partner: Anglian Water Other Bodies: Cambridgeshire County Council	Cost: Officer time, site investigations, modelling <£50k	Timescale: 2021-2027
Drivers: Flood Risk Management Plan, Surface water management plans and Section 19 investigations	District: Fenland	Progress: Ongoing

1.14A – Ground water investigations/ studies

With all sources of flood risk there are gaps in knowledge which the county council and its partners will continually work to improve on. One of the more notable areas where improvements could be made is in relation to understanding of ground water across the county. This knowledge is incrementally developed through data provided by flood risk projects, new developments and flood investigations.

The county council will continue to work with partners to gather information to inform this area. Particular areas where future progress is anticipated include;

- Links between ground water levels and flood risk in chalk stream catchments such as the Granta;
- Investigative works into the impacts of surface and ground water ingress into sewers
- Flood investigations where high water tables have exacerbated flooding, such as in the Fens and areas with sand and gravel deposits

Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and surveys <£50k	Timescale: Long term
Drivers: Local Flood Risk Management Strategy Objectives	District: All	Progress: Ongoing

1.15A – Anglian Water to investigate capacity issues in Alconbury and consider mitigation measures

To investigate capacity within public sewers and the impact associated with high water levels in the adjacent brooks. Connectivity between this and other projects within the Alconbury area will be explored where appropriate.

Lead partner: Anglian Water Other Bodies: Cambridgeshire County Council	Cost: Officer time plus project costs	Timescale: 2022-2027
Drivers: Flood Risk Management Plan	District: Huntingdonshire	Progress: Not started

1.16A – Brampton: Explore opportunities for flood resilience schemes

Identification and delivery of flood alleviation schemes following outcomes of the area Flood Investigation Report. These measures would be in addition to any investigative or enforcement activities carried out by the county council following flood events.

Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Huntingdonshire	Progress: Ongoing

1.17A – The Offords: Explore opportunities for flood resilience schemes

Identification and delivery of flood alleviation schemes following outcomes of the area Flood Investigation Report. These measures would be in addition to any investigative or enforcement activities carried out by the county council following flood events.

Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Huntingdonshire	Progress: Ongoing

1.18A – Swavesey: Explore opportunities for flood resilience schemes		
Investigative or enforcement activities carried out by the county council following flood events to improve catchment understanding and potentially identify options to improve flood resilience.		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: South Cambridgeshire	Progress: Ongoing
1.19A – Broughton: Explore opportunities for flood resilience schemes		
Investigative or enforcement activities carried out by the county council following flood events to improve catchment understanding and potentially identify options to improve flood resilience.		
Partners are initially working together to explore Natural Flood Management opportunities within the catchment.		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Huntingdonshire	Progress: Ongoing
1.20A – Godmanchester: Explore opportunities for flood resilience schemes		
Investigative or enforcement activities carried out by the county council following flood events to improve catchment understanding and potentially identify options to improve flood resilience.		
Previous projects proposed to manage the local flood risk issues within the catchment have struggled to be viable against existing funding mechanisms. As such alternative funding arrangements and alternative solutions for the catchment will need to be considered in future where the opportunities arise.		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Huntingdonshire	Progress: Ongoing
1.21A – Ramsey: Explore opportunities for flood resilience schemes		
Investigative or enforcement activities carried out by the county council following flood events to improve catchment understanding and potentially identify options to improve flood resilience.		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Huntingdonshire	Progress: Ongoing

1.22A – Sawtry: Explore opportunities for flood resilience schemes		
Investigative or enforcement activities carried out by the county council following flood events to improve catchment understanding and potentially identify options to improve flood resilience.		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Huntingdonshire	Progress: Ongoing
1.23A – Buckden: Explore opportunities for flood resilience schemes		
Investigative or enforcement activities carried out by the county council following flood events to improve catchment understanding and potentially identify options to improve flood resilience.		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Huntingdonshire	Progress: Ongoing
1.24A – Wimblington: Explore opportunities for flood resilience schemes		
Investigative or enforcement activities carried out by the county council following flood events to improve catchment understanding and potentially identify options to improve flood resilience.		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Fenland	Progress: Ongoing
1.25A – Chatteris: Explore opportunities for flood resilience schemes		
Investigative or enforcement activities carried out by the county council following flood events to improve catchment understanding and potentially identify options to improve flood resilience.		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and Project Contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Fenland	Progress: Ongoing

1.26A – Cambridgeshire Lodes

The Anglian Flood Risk Management Plan includes a measure for the Environment Agency and County Council to work in partnership to investigate catchment wide opportunities to within the areas served by Beck Brook, Bar Hill Brook, and Cottenham Lode to reduce flood risk from all sources for Bar Hill, Oakington, Girton and Cottenham.

This will include investigating opportunities for attenuation, in providing more space for water in the catchment and slowing flows, through measures such as natural flood management.

The extent and source of funding needs to be identified, delivery of interventions could potentially be spread across a number of locations and over a period of time and this is reflected in the timescale.

Some investigative work in Bar Hill was carried out as a part of previous flood investigations and an action for the delivery of this work is incorporated as 2.12A in this Action Plan. Similarly, options are being explored through 2.20A in relation to surface water flooding in Cottenham.

In addition to this, partners will continue to monitor for opportunities associated with the wider network of the Cambridgeshire Lodes.

Lead partner: Environment Agency Other Bodies: Cambridgeshire County Council	Cost: Officer time and project costs	Timescale: 2021 - 2027
Drivers: Flood Risk Management Plan	District: South Cambridgeshire and East Cambridgeshire	Progress: Not started

1.27A – Identifying new opportunities to improve flood resilience

The Anglian Flood Risk Management Plan identifies a measure for the county council to investigate flooding events and identify new opportunities for improving resilience in the catchment.

Investigations by the county council and its partners will help to highlight areas of flood risk where steps could be taken to improve the resilience of that community. This could come from sources such as Section 19 reports or operational findings and any proposed actions will be discussed with partners and possible funding bodies.

Where schemes are identified for delivery they will be incorporated into this Action Plan in future assigned to the appropriate objective. In some instances there will be overlaps between this action and 1.28A.

Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time, investigative costs and project costs	Timescale: Long term
Drivers: Local Flood Risk Management Strategy Objectives and Flood Risk Management Plan	District: All	Progress: Ongoing

1.28A – Explore opportunities for Nature Based Solutions across Cambridgeshire

The Anglian Flood Risk Management Plan includes a measure to work in partnership across the Cam catchment to explore opportunities for Natural Flood Management schemes and alternative land management practices to benefit the water environment.

This measure has been expanded to incorporate all catchments across Cambridgeshire and to include both Natural Flood Management and Sustainable Drainage Systems to increase resilience, these are often collectively known as Nature Based Solutions.

Investigations by the county council and its partners will help to highlight areas of flood risk where steps could be taken to improve the resilience of that community. This could come from sources such as Section 19 reports or operational findings and any proposed actions will be discussed with partners and possible funding bodies.

Where schemes are identified for delivery they will be incorporated into this Action Plan in future assigned to the appropriate objective. In some instances there will be overlaps between this action and 1.27A.

Examples of this could also include exploring the expansion or improvement of existing schemes such as the balancing ponds serving Histon and Impington.

<p>Lead partner: Environment Agency and Cambridgeshire County Council Other Bodies: LCs and Districts and Catchment Partnerships</p>	<p>Cost: Officer time, investigative costs and project costs</p>	<p>Timescale: Long term</p>
<p>Drivers: Flood Risk Management Plan and Local Flood Risk Management Strategy Objectives</p>	<p>District: South Cambridgeshire, East Cambridgeshire, and Cambridge</p>	<p>Progress: Ongoing</p>

1.29A – Catchwater Drains Study

A study of Catchwater Drains in the Ely Group Internal Drainage Boards catchment

<p>Lead partner: Ely Group of Internal Drainage Boards Other Bodies: Environment Agency</p>	<p>Cost: Officer time and project contributions</p>	<p>Timescale: 2025</p>
<p>Drivers: Partner Scheme</p>	<p>District: East Cambridgeshire</p>	<p>Progress: Ongoing</p>

Objective 2: Managing the Likelihood of flooding

2.7A – St Neots: Explore opportunities for flood resilience schemes

There have been a number of flood events in St Neots historically, investigations into more recent events in August and December 2020 led to flood investigation reports being generated. The flooding experienced was from both surface water and main river sources.

A number of maintenance activities and remedial actions were required following the investigations with findings also highlighting capacity issues and pinch points where potential measures may be required both in St Neots and on tributaries upstream of St Neots to reduce future flood risk.

Initially priority will be given in pursuing opportunities associated with existing projects around the town and the potential for partnership working will be explored as a priority. This includes looking for opportunities to increase drainage attenuation capacities as a part of the St Neots Future High Streets project and also in slowing flows from upstream as a part of A428 improvements.

Additional activities such as raising awareness of riparian responsibilities (3.6A), greater support of community groups (3.5A) and promotion of property flood resilience measures (3.4A) will continue alongside this, building on the community engagement event of October 2021.

As investigations continue additional opportunities for increasing resilience will be explored.

Lead partner: Cambridgeshire County Council and Environment Agency Other Bodies: Anglian Water, National Highways, Network Rail, Developers, Huntingdonshire District Council, St Neots Town Council and Local Communities	Cost: Officer time and project contributions £100-500k partnership funding to be secured	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Huntingdonshire	Progress: Ongoing

2.8A – St Ives: Explore opportunities for flood resilience schemes

Following flood events in August and December 2020, flood investigation reports were generated. The flooding experienced was from both surface water and main river sources.

A number of maintenance activities and remedial actions were required following the investigations with findings also highlighting capacity issues and pinch points where potential measures may be required to reduce future flood risk. Interactions between surface runoff, sewers, watercourses and main rivers were exacerbated by saturated ground conditions.

Extensive maintenance and remedial work has been carried out following flood events. The Environment Agency have commissioned modelling to assess the impact of blockages on the local river network and provide an evidence base for reviewing maintenance operations. An independent report into the potential impacts on commercial and industrial areas has been commissioned locally. That report highlights the need for maintenance across the catchment, the potential impact of landscape management upstream and the exacerbation of the flooding caused by saturated ground.

The need for interventions and potential opportunities is being explored, the county council is working in partnership with other parties to identify potential interventions and ensure that those interventions do not have any detrimental impacts on other sources of risk.

Additional activities such as raising awareness of riparian responsibilities (3.6A), greater support of community groups (3.5A) and promotion of property flood resilience measures (3.4A) will continue alongside this, building on the community engagement event of November 2021.

Lead partner: Anglian Water, Cambridgeshire County Council and Environment Agency Other Bodies: Huntingdonshire District Council, St Ives Town Council and Local Communities	Cost: Officer time and project contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: Huntingdonshire	Progress: Ongoing

2.9A – Cambridge: Explore opportunities for flood resilience schemes

Historic flood events in Cambridge have led to the development of a series of interventions in the city being investigated and delivered by both the city and county councils. Some of these are specifically mentioned later in this Action Plan (2.16A and 2.17A).

As set out in the Anglian Flood Risk Management Plan, the county council will continue support Cambridge City Council in the development and delivery of flood resilience measures.

<p>Lead partner: Cambridgeshire County Council and Cambridge City Council Other Bodies: Anglian Water and Local Communities</p>	<p>Cost: Officer time and project contributions</p>	<p>Timescale: 2021 - 2027</p>
<p>Drivers: Flood Risk Management Plan, Section 19 Investigations</p>	<p>District: Cambridge</p>	<p>Progress: Ongoing</p>

2.10A – March: Explore opportunities for flood resilience schemes

March has suffered from multiple flood events in recent years, details around the extent of those events and the locations around March experiencing those issues can be found in the March Section 19 reports available online. A previous surface water management plan for March also highlighted potential solutions.

A range of interventions will be required at multiple locations around March, whilst some have already been identified, there has been a number of difficulties in delivery for historic projects in the town, challenges include progressing legal agreements, an absence of infrastructure, difficulties securing of partnership funding or connectivity of assets on the ground have slowed or halted projects in the past. Many of the more historic areas in March are served by combined sewers which carry both the foul water from the town and the surface water from rainfall and can be prone to intense rainfall.

Exploring how to overcome these barriers will require innovation in areas such as funding. Funding previously secured is anticipated to be available for future projects if deliverable schemes can be identified.

March is highlighted as a nationally significant Flood Risk Area, has experienced repeated flooding and is also a priority catchment for the Drainage and Wastewater Management Plans. Future partnership working is anticipated to increase the delivery potential of projects.

Progress against 1.13A will work to inform this action.

Additional activities such as raising awareness of riparian responsibilities (3.6A) will continue alongside this.

<p>Lead partner: Cambridgeshire County Council Other Bodies: Anglian Water, Fenland District Council, Middle Level Commissioners and Local Communities</p>	<p>Cost: Officer time and project contributions £500-1m</p>	<p>Timescale: 2022 – 2027</p>
<p>Drivers: Flood Risk Management Plan, Section 19 Investigations, Surface Water Management Plan, National Strategy Objectives</p>	<p>District: Fenland</p>	<p>Progress: Ongoing</p>

2.11A – Scheme development and delivery in Chalk Stream catchments

There are a number of projects already underway within the Chalk Streams of Cambridgeshire. The County Council and its partners will look to support these and identify new opportunities for schemes to restore the chalk stream and incorporate flood risk benefits. Those examples include;

The Granta Resilient Catchment Programme, a Catchment Management Plan was drafted in partnership in 2021 and looks to consider a whole catchment approach to the management of this important Chalk Stream. A range of measures have previously been identified on the main river section of the catchment and are being progressed by CamEO. The county council is working with partners, including landowners, to identify and plan delivery of measures upstream to provide improvements to the chalk streams including using nature based solutions to slow flow, clean water and recharge the ground waters.

The Greater Cambridge Chalk Streams Project is a joint venture between the Cambridgeshire and Peterborough Combined Authority, Cambridge City Council and South Cambridgeshire District Council which has secured £420,000 to fund restoration work on a number of chalk streams.

Nationally, Catchment Based Approach have released a Chalk Stream Strategy setting out a number of recommendations. An implementation plan is anticipated to follow in October 2022.

Lead partner: Cambridgeshire County Council, Cambridge Water, landowners' group, CamEO, Water Resources East, South Cambridgeshire District Council, Cambridge City Council and the Cambridgeshire and Peterborough Combined Authority Other Bodies: Local communities	Cost: Officer time and project delivery £500-1m	Timescale: 2021 - 2027
Drivers: Flood Risk Management Plan, Climate Change and Environment Strategy	District: South Cambridgeshire, Cambridge	Progress: Ongoing

2.12A – Bar Hill Flood Alleviation Scheme

Following previous flood investigations in Bar Hill, a study into flood alleviation scheme(s) has been developed and funding for the resultant scheme has been secured from the Anglian Great Ouse Regional Flood and Coastal Committee.

The County Council continue to work with the Parish Council in the delivery of this scheme.

Lead partner: Cambridgeshire County Council Other Bodies: Bar Hill Parish Council	Cost: Officer time and project delivery £100-500k	Timescale: 2021 - 2025
Drivers: Section 19 Investigations	District: South Cambridgeshire	Progress: Ongoing

2.13A – Public Sector Co-operation Agreements covering Cambridgeshire area

The county council will investigate opportunities for cost savings and maintenance rationalisation through partnership working with other authorities, including potential Public Sector Co-operation agreements with partners to co-deliver work at cost. A draft agreement has been created and is being considered by partners.

Lead partner: Cambridgeshire County Council Other Bodies: Internal Drainage Boards and Districts	Cost: Officer time	Timescale: 2021 - 2024
Drivers: Local Flood Risk Management Strategy Objectives	District: All	Progress: Ongoing

2.14A – Greater integration between Cambridgeshire Lead Local Flood Authority and Local Highways Authority		
Cambridgeshire LLFA and LHA to work together to better coordinate roles in enforcement, investigation, and potential scheme delivery		
Lead partner: Cambridgeshire County Council Other Bodies:	Cost: Officer time	Timescale: 2021 - 2027
Drivers: Flood Risk Management Plan and Local Flood Risk Management Strategy Objectives	District: All	Progress: Ongoing
2.15A – Birch Fen OWC improvements		
Delivery of programmed watercourse improvements by Fenland District Council		
Lead partner: Fenland District Council Other Bodies:	Cost: Officer time and project contributions £100-500k	Timescale: 2023
Drivers: Partner Scheme	District: Fenland	Progress: Ongoing
2.16A – Kelvin Close SW Scheme		
Delivery of programmed surface water flood alleviation scheme for Kelvin Close		
Lead partner: Cambridge City Council Other Bodies:	Cost: Officer time and project contributions £50-100k	Timescale: 2025
Drivers: Partner Scheme	District: Cambridge	Progress: Ongoing
2.17A – Brunswick SW Scheme		
Delivery of programmed surface water flood alleviation scheme for Brunswick		
Lead partner: Cambridge City Council Other Bodies:	Cost: Officer time and project contributions £50-100k	Timescale: 2025
Drivers: Partner Scheme	District: Cambridge	Progress: Ongoing

2.18A – Alconbury: Explore opportunities for flood resilience schemes

Identification and delivery of flood alleviation schemes including measures in the Anglian Flood Risk Management Plan to address the identified Flood Risk Area. These schemes would complement those already identified within the action (Notably 1.15A, 3.8A and 5.8A)

The Environment Agency, landowners and Flood Group have already delivered a number of actions in the area including putting a Community Flood Plan in place, tree planting and delivery of multiple Natural Flood Management features upstream in the catchment.



Leaky woody dam in Alconbury catchment

Lead partner: Environment Agency, Cambridgeshire County Council, Parish Councils, community groups and landowners Other Bodies: All	Cost: Officer time and project contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations and Flood Risk Management Plan	District: Huntingdonshire	Progress: Ongoing

2.19A – Linton: Explore opportunities for flood resilience schemes

Identification and delivery of flood alleviation schemes pending outcome of Flood Investigation Report. Cambridgeshire County Council will work closely with partners to ensure that opportunities arising from river improvements in the Granta Catchment (2.11A) provide for benefits to the flood risk in Linton. These measures would be in addition to any investigative or enforcement activities carried out by the county council following flood events.

Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and project contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: South Cambridgeshire	Progress: Ongoing

2.20A – Cottenham Surface Water scheme		
Continued investigation with partners to identify potential options to improve resilience of the village against surface water flood events.		
Lead partner: Cambridgeshire County Council Other Bodies: South Cambridgeshire District Council, Local Highways Authority and Parish Council	Cost: Officer time and project contributions	Timescale: 2021 - 2027
Drivers: Section 19 Investigations	District: South Cambridgeshire	Progress: Ongoing

Objective 3: Helping Cambridgeshire's citizens to manage their own risk		
3.4A – Promotion of property flood resilience and associated funding		
<p>Cambridgeshire County Council were a part of the OxCam Property Flood Resilience Pathfinder Project funded by central government. The main aim of this project is to increase awareness of property flood resilience measures. Promotional events associated with this project were delivered in summer 2021 at locations prioritised in early 2020, the project ended in September 2021.</p> <p>Resources from this project have continued to be used as a part of the Community Flood Action Programme (3.5A) for engagement events, notable those who have experienced flooding more recently. Further events are taking place and continued to be planned for 2022 and beyond.</p> <p>The County Council will continue to work with partners to expand the resources and information available to communities to assist in delivering 3.3M.</p>		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time, supporting and educational resources <£50k	Timescale: 2021-2027
Drivers: Local Flood Risk Management Strategy objectives, Climate Change and Environment Strategy and National Level Measures, Flood Risk Management Plan	District: All	Progress: Ongoing
3.5A – Community Flood Action Programme		
<p>In 2021-22 the Community Flood Action Programme started with the aims to</p> <ul style="list-style-type: none"> • Develop guidance on riparian watercourse management • Establish a flood group network • Deliver flood risk management training for communities • Develop a new one-stop shop flood risk information website • Improve the flood reporting system • Improve the mapping of watercourses across the County <p>The Flood Risk Management Plan sets a measure to engagement specifically with communities at risk in March, the county council will look to work more widely with priority communities across the whole of Cambridgeshire. This work will consider the individual needs of the different communities affected by risk and look at how to overcome their challenges. Further information and guidance relating to this work is available on the County Council website, with more anticipated to be released in 2022.</p>		
Lead partner: Cambridgeshire County Council Other Bodies: Fenland District Council, Huntingdonshire District Council, East Cambridgeshire District Council, South Cambridgeshire District Council	Cost: Officer time, supporting and educational resources £500-1m	Timescale: 2021 - 2022

Drivers: Local Flood Risk Management Strategy objectives, Climate Change and Environment Strategy and National Level Measures	District: All	Progress: Ongoing
3.6A – Riparian responsibilities engagement		
<p>Since the last iteration of this strategy the county council has developed riparian guidance and shared this widely among other Lead Local Flood Authorities and partners of the Cambridgeshire and Peterborough Flood and Water Partnership. More recent flood events have highlighted the risk associated with a lack of maintenance on drainage and flood risk assets, notably including the lack of riparian maintenance. Ensuring that watercourses are maintained to prevent flooding is crucial. Section 5 discusses riparian rights and responsibilities. The county council, the Environment Agency and Internal Drainage Boards have permissive powers under the Land Drainage Act 1991 that they can use, funding permitting, for certain essential works and to enforce prohibitions on obstructions being placed in watercourses. Legislation related to fly tipping may also be used where this is appropriate. Any obstructions to the flow of watercourses could increase local flood risk. The Flood Risk Management Plan sets a measure for engagement specifically on riparian responsibilities in March. The county council will look to work more widely with priority locations across the whole of Cambridgeshire. This work will initially form a part of the Community Flood Action Programme and then continue thereafter.</p> <p>Additionally, there are other water management schemes that landowners may have already engaged with, which bring a wide range of other benefits to Cambridgeshire. Farm stewardship schemes encouraged by Natural England and Nene Park Trust seek to reduce soil erosion into nearby water bodies and therefore improve water quality. Anglian Water is also increasing the scale of its catchment advisory scheme which aims to help reduce the impacts of chemical fertilisers and pesticides in our water supply. It is important that any new schemes relating to riparian responsibilities are complimentary and do not create unnecessary burden for agricultural landowners or detract from these existing beneficial schemes.</p>		
Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time <£50k	Timescale: 2021 - 2027
Drivers: Local Flood Risk Management Strategy objectives, Flood Risk Management Plan and National Level Measures	District: All	Progress: Ongoing
3.7A – Awareness raising campaign in Oakington, notably for riparian responsibilities		
<p>Environment Agency to work in partnership with others to raise awareness of risks and responsibilities in the catchment, alongside delivery of other measures in the Anglian Flood Risk Management Plan to address the identified Flood Risk Area in Oakington.</p> <p>The county council will look to incorporate any specific communities into the programme of engagement and support being planned.</p>		
Lead partner: Environment Agency Other Bodies: Cambridgeshire County Council	Cost: Officer time and modelling or investigation costs <£50k	Timescale: 2025
Drivers: Local Flood Risk Management Strategy objectives, Climate Change and Environment Strategy and National Level Measures	District: South Cambridgeshire	Progress: Not started
3.8A – Engagement plan for Alconbury developed in partnership		
<p>The Environment Agency will work with the Parish Council and County Council to develop an engagement plan in Alconbury to promote partnership working and raise awareness of risk. This action has been pulled from the Anglian Flood Risk Management Plan but it is recognised that the Environment Agency is already working closely with communities in this area and as such other partners will look to support this function as required.</p>		
Lead partner: Environment Agency Other Bodies: Cambridgeshire County Council and Local Communities	Cost: Officer time	Timescale: 2021 - 2023

Drivers: Local Flood Risk Management Strategy objectives, Climate Change and Environment Strategy and National Level Measures	District: Huntingdonshire	Progress: Ongoing
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Objective 4: Ensuring appropriate development in Cambridgeshire

4.4A – Build the evidence base for local flood risk to inform future development and investment decisions

As a part of the county council's role to better understand local flood risk and act as statutory consultee in major planning applications it is crucial that the LLFA have the best information available to assess the risk and to help inform future reviews of planning guidance or development proposals. The development of this evidence base is important for the county council and its partners to address the risks set out in Section 5.8.1.

The county council will continue to gather information from flooding reports to help inform future decisions and look to explore new opportunities to build the evidence base.

Lead partner: Cambridgeshire County Council Other Bodies: Local Planning Authorities	Cost: Officer time and modelling or investigation costs <£50k	Timescale: 2021 - 2027
Drivers: Local Flood Risk Management Strategy objectives, Climate Change and Environment Strategy and National Level Measures	District: All	Progress: Ongoing

4.5A – Update Cambridgeshire Flood and Water Supplementary Planning Document (SPD)

This SPD is a formally adopted part of Cambridgeshire's suite of planning policy documents. One of the principal actions set out in the Local Flood Risk Management Strategy is to ensure that the SPD is used, understood, and followed by planners working on new development. The SPD provides planning guidance on:

- How to assess whether or not a site is suitable for development based on flood risk grounds.
- The use of different sustainable drainage measures within Cambridgeshire.
- The protection of aquatic environments and how development can contribute positively to the Water Framework Directive.

An update of the SPD would allow consideration of the evolution to local and national policies and consideration of the need for new development to be ready to adapt to changing risks. The review process will provide an opportunity to reassess the risks associated with development (5.8.1) and the measures that may be required to manage this.

Lead partner: Cambridgeshire County Council Other Bodies: Local Planning Authorities and Environment Agency	Cost: Officer time	Timescale: 2023 - 2024
Drivers: Local Flood Risk Management Strategy objectives, Climate Change and Environment Strategy	District: All	Progress: Not started

4.6A – Surface Water Management Guidance document for Planning

This guidance document was updated in June 2021 and all changes to industry guidance has been considered as a part of that update. The county council will monitor further progress on National guidance and best practice and review this guidance as required.

Lead partner: Cambridgeshire County Council Other Bodies: Local Planning Authorities	Cost: Officer time	Timescale: 2027
Drivers: Local Flood Risk Management Strategy objectives	District: All	Progress: Not started

4.7A – Seek opportunities to work with those delivering development and infrastructure projects to improve existing flood risk

The Partnership Funding process described in section 7 will not fund flood risk management works to ‘new’ development. This is defined as any development built since 1st January 2009. This is because the appropriateness, design, and safety of all new developments with regards to all sources of flood risk should have been fully considered as part of the planning process. If funding is required for schemes that relate to new development or redevelopment it will be sought through developer contributions from organisations with an interest in the land or improved infrastructure. The potential for funding from CIL, POIS and S106 is explained further on each website of the Local Planning Authorities. Environmental net gain introduced by the Environment Act will require new development to provide environmental betterment, it is anticipated over time that this could include local flood risk and the wider water environment. The county will work with its partners to share ambitions and prepare for such opportunities.

Lead partner: All Other Bodies: Local communities	Cost: Officer time and project contributions	Timescale: 2021 - 2027
Drivers: Climate Change and Environment Strategy, Local Flood Risk Management Strategy objectives, Doubling Nature and 25 Year Environment Strategy	District: All	Progress: Not started

4.8A – Work with OxCam group to influence regional development guidance

The OxCam Growth Arc described earlier in this Strategy will have significant impacts on the environment in the region, with a potential to increase flood risk, increase pollution and demand for water among other concerns. In response to these challenges several initiatives have started to prepare for the planned new development, examples of this include the OxCam Local Natural Capital Plan, a strategic review of flood risk known as the Great Ouse Strategic Interventions Study and a government commitment to develop a Spatial Framework to cover the Arc. A three stage OxCam Integrated Water Management Framework (IWMF) is underway to consider flooding, water management and related nature recovery holistically at the OxCam scale. A Flood Risk Investment Study will consider the optimum level of flood infrastructure investment for a range of growth and climate change scenarios. Together, these studies are expected to identify strategic adaptation and resilience approaches, and ways of working to bring them about. The county council already work closely with the Lead Local Flood Authorities in other parts of the Arc on a regular basis and will build on these relationships through engaging with this work. The county council and Local Planning Authorities have guidance and assessments in place to help guide development and will incorporate developments into that evidence base as required. Cambridgeshire lies downstream of much of the proposed development in the Arc and this work is expected to provide opportunities to further explore the catchment wide impact of development and influence the development which will impact on the level of risk in the county. This work is likely to overlap at times with a number of other projects including the Future Fens projects (1.8A, 1.9A).

Lead partner: All Other Bodies: N/A	Cost: Officer time	Timescale: 2021-2027
Drivers: Climate Change and Environment Strategy, Local Flood Risk Management Strategy objectives, National Level Measure	District: All	Progress: Ongoing

4.9A – Alignment of ambitions to inform Net Gain opportunities

Anticipated legislative changes are expected to provide opportunities to improve the existing state of the environment within Cambridgeshire. To be fully prepared for such opportunities and improve the potential for partnership working, Risk Management Authorities across Cambridgeshire should share their ambitions and identify opportunities for delivery and efficiencies. There are a number of investigative and mapping actions underway which will help to inform this work in future such as the habitat opportunity mapping delivered across Cambridgeshire and Peterborough.

Lead partner: Cambridgeshire County Council, Fenland District Council, Huntingdonshire District Council, East Cambridgeshire District Council, South Cambridgeshire District Council Other Bodies: All	Cost: Officer time	Timescale: Long term
Drivers: Climate Change and Environment Strategy	District: All	Progress: Ongoing

4.10A – SuDS in Schools support

As a part of development requirements there will be a continued increase in Sustainable Drainage Systems within schools, the Lead Local Flood Authority (LLFA) will work to support the development of those schemes as a part of their planning consultation process.

The LLFA will also look to work closely with colleagues in education to identify opportunities for retrofitting Sustainable Drainage Systems to the existing schools to alleviate flood risk. Where possible this will be supported by awareness raising events through the schools.

The county council is actively seeking funding for this project.

Lead partner: Cambridgeshire County Council Other Bodies: N/A	Cost: Officer time	Timescale: Long term
Drivers: Climate Change and Environment Strategy	District: All	Progress: Ongoing

Objective 5: Improving flood prediction, warning, and post flood recovery

5.3A – Review of processes associated with Highway flood related closure

Cambridgeshire has several roads which are managed by the Cambridgeshire Highways Authority that are prone to closures periodically because of flooding. This includes the A1123 east of Earith and B1040 north of Whittlesey. These closures can have a considerable diversion route and as such have an impact of the isolation of rural communities, a potential carbon impact as well as financial implications for local businesses and residents. The process for the closure of these roads is reviewed periodically by the Local Highway Authority and technological changes will be monitored to see if economic solutions can be identified to improve the local service.

Lead partner: Cambridgeshire County Council Other Bodies: N/A	Cost: Officer time and potential infrastructure	Timescale: 2025
Drivers: Flood Risk Management Plan, Local Flood Risk Management Strategy Objectives	District: All	Progress: Ongoing

5.4A – Review of emergency response plans

As described in 5.1M, emergency response plans are developed by members of the Cambridgeshire and Peterborough Local Resilience Forum to set out processes for responding to significant events. This includes Plans for responding to severe weather and flooding events.

The plan relating to flooding is awaiting a government review before it can be updated, government response was anticipated in the autumn of 2021. Updates will then be incorporated into that plan with an intention to test that plan as a part of a regional event in 2022.

As a part of the review of the plans, consideration will be made with regards to how vulnerable individuals are identified in an emergency and how it is possible to ensure that they can be supported during an incident. In addition to these emergency response plans there are also business continuity plans and as outlined in the Climate Change and Environment Strategy, the county council intend to ensure that flooding and other climate relating risks are covered within the business continuity plans.

Lead partner: Cambridgeshire And Peterborough Local Resilience Forum Other Bodies: Cambridgeshire County Council	Cost: Officer time and event costs	Timescale: 2023
Drivers: Climate Change and Environment Strategy, Local Flood Risk Management Strategy Objectives, National Level Measure	District: All	Progress: Ongoing

5.5A – Explore the use of telemetry in projects, operation and emergency management

As technology develops there are better ways to use data, either live or after events, to improve responses to floods, provide warnings, find efficiencies in maintenance delivery, or provide a greater evidence base to validate projects. As opportunities to trial technologies are available, the council will work with partners to explore how services can be improved for communities. Where possible data will be made available through open sources to encourage citizen and help all stakeholders to understand the performance of the catchments across Cambridgeshire.

Examples of such opportunities include;

- The regional installation of rain gauges (1.12A) which can be used to provide live data to a number of partners and assist in Flood Investigations
- Trial installation of water level telemetry (5.9A) which will be investigating the benefits to partners of live water level data

Evidence gathered through this process will help to inform investigations and project development through Objectives 1 and 2 but also potential future investment and strategic decisions (4.4A)

Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time and infrastructure costs <£50k	Timescale: 2021-2027
Drivers: Climate Change and Environment Strategy, Local Flood Risk Management Strategy Objectives	District: All	Progress: Ongoing

5.6A – Flood Risk built into Business contingency plans in council

Recent changes to council assets will require a review of contingency plans held by the county, the Climate Change and Environment Strategy detailed a need to consider climate change threats within those plans.

Flood Risk, as one of the identified risks needs to be fully considered in the impact on the delivery of services.

Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time	Timescale: 2023
Drivers: Climate Change and Environment Strategy, Local Flood Risk Management Strategy Objectives	District: All	Progress: Not started

5.7A – Cambridgeshire and Peterborough Local Resilience Forum to be involved in national event to test response plans

The Cambridgeshire and Peterborough Local Resilience Forum maintain plans which are activated during an emergency to inform emergency responders of the processes to follow during an emergency, these plans are regularly reviewed and tested. Future plans include a National test of emergency plans which the Cambridgeshire And Peterborough Local Resilience Forum will be involved in.

Lead partner: Cambridgeshire County Council Other Bodies: All	Cost: Officer time, venue, and possible resource support <£50k	Timescale: 2023
Drivers: Civil Contingencies Act, Local Flood Risk Management Strategy Objectives	District: All	Progress: Not started

5.8A – Flood warning exercise in Alconbury

As a part of delivery of other Flood Risk Management Plan measures, the Environment Agency will work with the county to lead a flood warning exercise in Alconbury to practice and refine how the community and partners respond to receiving a flood warning which will include using the community flood kit.

Lead partner: Environment Agency Other Bodies: Cambridgeshire County Council	Cost: Officer time <£50k	Timescale: 2023
Drivers: Flood Risk Management Plan	District: Huntingdonshire	Progress: Not started

5.9A – Water Level Telemetry in Cambridgeshire

The County Council and Huntingdonshire District Council will work with partners to trial the implementation and use of water level telemetry across Cambridgeshire as a part of the Connecting Cambridgeshire Project.

A range of locations will be selected to allow partners to test the benefits of devices in a variety of circumstances such as road closures, alerts and in projects to ground truth modelling as required for funding bids.

As a part of the project partners will look at how data can be made widely accessible.

At trial stage this data will not be integrated as a part of the Environment Agency's formal warning and informing process.

Lead partner: Cambridgeshire County Council, Huntingdonshire District Council and Combined Authority Other Bodies: District Councils, Highways Authority and Communities	Cost: Officer time <£50k	Timescale: 2021-2024
Drivers: Local Flood Risk Management Strategy Objectives	District: All	Progress: Ongoing