



Open Report on behalf of Environment Agency

Report to:	Flood and Water Management Scrutiny Committee
Date:	March 2023
Subject:	Environment Agency Update

Summary:

To update Scrutiny Committee on Environment Agency activities in Lincolnshire, including progress on key capital schemes.

Recommendation(s):

The Flood and Water Management Scrutiny Committee is invited to review and comment on the contents of the report and presentation and provide feedback to the Environment Agency and other relevant parties.

1 Programme Update

1.1 Saltfleet to Gibraltar Point Beach Management

Lead Organisation	Environment Agency
Start Date	March 2020
End Date	December 2021
Total project cost	£31,958,170
Partnership required?	Funding N
Total Partnership Funding	N/A
Who is contributing?	N/A
Households better protected	9,352

Background:

Beach re-nourishment scheme protecting approximately 20,000 houses, 35,000ha prime agricultural land and 30,000 static caravans as well as major tourism developments between Mablethorpe and Skegness.

Update since last meeting:

2023 campaign provisionally scheduled for commencement in May 2023. Currently costing additional works for approval including, outfall repairs (various locations) and Chapel Penstock repairs. Minor repairs being carried out to the splash deck(s) in Dec 2022/Jan 2023 just north of Skegness Pier.

1.2 Middle River Ancholme - catchment management

Lead Organisation	Environment Agency
Start Date	September 2021
End Date	October 2026
Total project cost	£1,890,000
Partnership Funding required?	Y
Total Partnership Funding	£100,000
Who is contributing?	N/A
Households better protected	139

Background:

This project aims to deliver the policies within the Ancholme CFMP and builds on previous River Ancholme strategy from early 2000's. Previous projects tried unsuccessfully to develop formal flood storage areas, but these were found to be unaffordable under the Partnership Funding policy. This new approach aims to build a partnership with the landowners and Ancholme IDB to develop a more affordable, sustainable and flood resilient approach. Including, by identify where water could be stored within the catchment and then utilising the existing drainage infrastructure more effectively. This will mean apportioning the available economic benefits to justify a range of investments to existing Main River, surface water and land drainage networks, and potentially adjust the governance to some of the watercourses. This collaboration will also involve the newly formed Ancholme Catchment Partnership and consider the need for water storage for both public/industry water supply and irrigation purposes. The comprehensive approach will require a long development period with envisage phases of changes/improvements, that take opportunities of the emerging changes to farming subsidies. The project complements the catchment modelling and forward planning being undertaken by Ancholme IDB

Update since last meeting:

Progress towards SOC continues. The project schedule has been reviewed and some task durations have been shortened in order to achieve construction and benefits before end of the 6 year programme. A site visit took place on the 15th November with delivery partners, Estates, NEAS and CCL.

How this scheme is aligned with the FCERM Strategy Delivery Plan

The Middle River Ancholme Catchment (MRAC) Project falls within the Lincolnshire and Northamptonshire area, specifically focussing on the section of the River Ancholme between Bishops Bridge and the M180. The project aims to deliver a revised and more sustainable level of water and flood risk management with measures previously outlined within the Grimsby and Ancholme Catchment Flood Management Plan whilst incorporating the more recent Humber Flood Risk Management Plan and the developing strategy of the River Ancholme Catchment Partnership (RACP). These build on the previous Ancholme Valley Project Appraisal Report (strategy) from the early 2000's, principally working towards connecting the river back to its floodplain, whilst seeking to keep within the constraints of workable and viable land use by following a Catchment Based Approach (CaBA). The RACP are fully committed to producing a current strategy (March 2023) which the EA can then utilise in support of funding. Opportunities based on the RACP Green Finance initiatives are particularly interesting as they create opportunities for landowners to work directly in partnership with third parties who wish to purchase 'green credits' in their moves toward 'net-zero' operation. This is referred to as Ecosystem Services Trading. More information can be found on the Lincolnshire wildlife Trust website. Green Investment in Greater Lincolnshire | Lincolnshire Wildlife Trust (lincstrust.org.uk) This partnership approach has the potential to support the creation of flood storage/wetland areas. Construction would not be envisaged until Summer 2025.

1.3 Wainfleet Flood Resilience Scheme

Lead Organisation	Environment Agency
Start Date	August 2021
End Date	July 2024
Total project cost	£3,178,824
Partnership required?	Funding N
Total Partnership Funding	£0
Who is contributing?	Anglian Water, Network Rail
Households better protected	47

Background:

In June 2019, two and a half times the month's average rainfall fell in 3 days in the Steeping catchment. This led to overtopping of the defences and ultimately a breach in the right bank of the Wainfleet Relief Channel on 12 June 2019. As a direct result 75 homes and businesses were flooded as well as 2000 acres of agricultural land. In response to this, the Steeping River Steering Group was set up and published a Catchment Action Plan which was recently refreshed and published in May 2021. This contains an action to increase the resilience of the raised defences that protect the western side of Wainfleet against overtopping and the effects of climate change. This capital project seeks to deliver this action.

Update since last meeting:

The Strategic Outline Case (SOC) of the Wainfleet Flood Resilience Project is complete and is currently going through the assurance process. The submission has used the experience and lessons learned from similar projects to further refine this submission. Once approved it will then progress onto the development of an Outline Business Case (OBC). More work will then be required in order to develop option(s), obtain outline costs and then undertake a more detailed analysis on the economic benefits to build the case for investment.

How this scheme is aligned with the FCERM Strategy Delivery Plan

The project is aimed at improving the resilience of the raised banks to be from failure caused by overtopping or weaknesses in the structure. It therefore contributes to the following National Strategy objective to better protect people from flooding by building and maintaining defences

Strategic objective 1.1: Between now and 2050 the nation will bolster its resilience to flooding and coastal change

1.4 Boston Barrage/Barrier Works

Lead Organisation	Environment Agency
Start Date	May 2014
End Date	September 2022
Total project cost	£42,147,805
Partnership required?	Funding N
Total Partnership Funding	N/A
Who is contributing?	N/A
Households better protected	525

Background:

The Boston Barrier scheme, once finished, will provide better protection to over 14,000 properties against tidal flooding and is deemed a ‘National Priority Project’ within the Environment Agency’s Six Year Programme.

Update since last meeting:

More than 13,700 properties are now better protected from tidal flooding by the primary barrier gate which was used for the first time against a high tide in November 2021 and continues to be available as required.

The project is currently incurring delays associated with the agreement of temporary works that are required before the wet dock can be closed to enable Port of Boston operations to continue without the use of the wet dock. Once temporary works are finalised, the wet dock works can proceed.

The latest construction programme anticipates completion of the Boston Barrier Scheme as a whole in Q4 2023/2024.

Once finished, this work will further protect 525 properties from tidal flooding taking the total number of properties better protected from tidal flooding to 14,256.

1.5 Lower Witham Flood Resilience Project

Lead Organisation	Environment Agency
Start Date	June 2021
End Date	August 2027
Total project cost	£29,914,388
Partnership Funding required?	Y
Total Partnership Funding	N
Who is contributing?	N/A
Households better protected	1,362

Background:

In 1997 the Lower Witham Strategy recommended reinforcement of key embankments whilst allowing some areas to flood, in order to relieve the pressure on the system. Since then, 30km embankments have been reinforced, but repeated high flows have damaged more. Storage options have not been implemented, due to availability of suitable sites and difficulties in meeting HM Treasury funding rules of the time.

The works in the 2000s included the creation of Fiskerton Nature Reserve, as environmental mitigation. Now these types of works are seen as offering a real alternative to hard defences, providing room for flood water as well as having a lower carbon footprint and enhancing the local environment. Flooding in 2019 has again highlighted the need to update the long-term plan to manage flood risk in the area.

With revised partnership funding rules, allowing more projects to proceed, and a new interest from landowners in providing public goods such as flood storage, it is hoped that the original vision can now be realised.

The Lower Witham is one of six river catchments within the East of England Fens that will come together under the Future Fens: Flood Risk Management programme. This work will contribute towards the ambitions for Climate Resilient Places within the National Flood & Coastal Erosion Risk Management Strategy where there is a specific measure focussed on the Fens.

It is anticipated that a significant capital investment programme will start on the ground in 2025, and in the meantime the Environment Agency's operational teams will continue to maintain and manage the flood risk assets where resources allow.

Update since last meeting:

Work on the Lower Witham model update is still progressing, with additional survey work to be carried out in the New Year. Some meetings have been held with Risk Management Partners to discuss and agree the benefits apportionment across the project area. The rest of these meetings are to be completed in the next couple of months. This work will also form part of the Tactical Plan Baseline report. Multiple farms visits have also been undertaken by Joe Morris to help better value farmland, to ensure the most accurate data is included in the economics.

How this scheme is aligned with the FCERM Strategy Delivery Plan

As the Lower Witham Flood Resilience Project sits within the wider Fens Catchment, the project supports FCERM Strategy Measure 1.5.4: By 2025 the Environment Agency will work with farmers, land managers, water companies, internal drainage boards and other partners to develop a long-term plan for managing future flood risk in the Fens.

1.6 Gibraltar Point to Freiston Shore System Sustain Project

Lead Organisation	Environment Agency
Start Date	March 2022
End Date	January 2024
Total project cost	£1,774,948
Partnership Funding required?	N
Total Partnership Funding	N/A
Who is contributing?	N/A
Households better protected	2,018

Background:

The project looks at sustaining the primary line of defence of the Wash Frontage from Gibraltar Point to Freiston Shore. The Asset Performance team has identified key low spots, cattle poaching and burrowing animals, which are areas of concern that result in red card maintenance activities and concern for bank stability. This project will look to repair the embankment and sustain the whole line back to its nominal standard of protection and service.

Update since last meeting:

The Strategic Outline Business case has gained assurance from the National Project Assurance Service. The Project Team is discussing with subject matter experts, consultants and looking to initiate consultations with customers and partners over the coming months. A site walkover survey will be conducted imminently to confirm the scope of works and identify the issues governing the works. We anticipate works on site in 2024.

How this scheme is aligned with the FCERM Strategy Delivery Plan

This project seeks to sustain the primary defence line along the Wash Frontage from Gibraltar Point to Freiston Shore; therefore, the FCERM strategy objectives below are in line with the project's objectives:

- Strategic objective 2.3: Between now and 2030 risk management authorities will support investments to manage flooding and coastal change that enables growth in a sustainable and climate resilient way.
- Strategic objective 1.2: Between now and 2050 risk management authorities will help places plan and adapt to flooding and coastal change for a range of climate scenarios.

1.7 Boston Upstream Tidal System Sustain Project

Lead Organisation	Environment Agency
Start Date	August 2021
End Date	March 2025
Total project cost	£6,201,034
Partnership required?	Funding N
Total Partnership Funding	N/A
Who is contributing?	N./A
Households better protected	900

Background:

The geographical scope of the project is along the Witham Haven between the Boston Barrier and Grand Sluice (Grand Sluice refurb. being excluded). The objective of this commission is to sustain a revised standard of service of 5.5m AOD, improve the management of flood risk assets in the town of Boston and reduce the risk of an asset failure.

We are undertaking the following:

1. Review of the data: a desktop study of the existing asset data.
2. Screening of the data and assessment of the robustness/ usability of data.
3. Undertake gap analysis of existing data.
4. Provide a report with recommendations, for asset inspection or further surveys as and if required to allow for the SOC to be written including options and costings.
5. Prepare a plan for the next stage of the asset inspections. Provide programme, number of people and durations.
6. The next stage - surveys will be added under a separate instruction before SOC stage.

Update since last meeting:

Non-intrusive site investigations have been completed, with reports due soon. These will confirm need for wider ground investigations and capital works, or alternatively full capital works may not be required in the short term. If this is the case, then minor works may be picked up via the capital recondition programme.

1.8 River Slea Flood Resilience Project

Lead Organisation	Environment Agency
Start Date	October 2022
End Date	December 2026
Total project cost	£6,860,709
Partnership Funding required?	N
Total Partnership Funding	N/A
Who is contributing?	N/A
Households better protected	582

Background:

This project covers the River Slea main river which runs through the town of Sleaford to Cobblers Lock. In the east of the town the river splits to follow the Sleas Navigation channel to the north and the original course of the Old River Sleas to the south. The navigation follows the contours of the land, dropping the river level from around 13m above sea level in Sleaford, to around 3.5m above sea level via a series of historical locks (not all of which are operational). The Old River Sleas follows a more natural course through the Sleas valley before joining back with the navigation again at Cobblers Lock.

As a river heavily influenced by groundwater flows the Sleas can suffer from low flows at times making abstractions for drinking water and irrigation a challenge. A flow augmentation scheme supports water levels in the river during dry periods.

Through the town itself, a series of movable structures maintain a water level for aesthetic reasons, although these do interfere with natural river processes, are a barrier to fish and eel migration and increase flood risk, which is why they have to open during high flows. These structures now require significant investment. Structures along the old navigation channel are also in a state of disrepair. With government funding to the EA dependent upon evidenced reductions in flood risk, securing sufficient funding to repair/replace assets with no flood risk benefit, is not possible.

Update since last meeting:

Progress towards SOC continues. Two workshops have taken place with Key Stakeholders in Sleaford. In late September we discussed the project and welcomed stakeholders to feed in ideas to add to a long list of ideas. These ideas have been added to and turned into more detailed measures by the project team. In early December 2022 a second workshop took place with key internal

(Environment Agency) and external stakeholders where we wished to understand any support or opposition to the proposed measures. The workshop also created a potential Option to take forward and has enabled the project team to create additional Options for the Longlist. The Options are currently being assessed in more detail against a Multi-Criteria analysis.

Work on the River Slea hydraulic model is still progressing with sensitivity tests being run and reviewed at present. Engagement continues; the second project newsletter was issued in early December 2022 and an imminent Citizen Space webpage update is planned in December 2022 /January 2023. The project objectives have also been updated.

How this scheme is aligned with the FCERM Strategy Delivery Plan

This project seeks to review existing structures in the watercourse which are coming to the end of their design life, therefore the FCERM strategy objectives below are in line with project objectives;

- Strategic objective 2.3: Between now and 2030 risk management authorities will support investments to manage flooding and coastal change that enables growth in a sustainable and climate resilient way;
- Strategic objective 1.2: Between now and 2050 risk management authorities will help places plan and adapt to flooding and coastal change for a range of climate scenarios;
- Strategic objective 1.1: Between now and 2050 the nation will bolster its resilience to flooding and coastal change.

1.9 NFM - Swaton Flood Resilience Scheme

Lead Organisation	Environment Agency
Start Date	April 2019
End Date	March 2022
Total project cost	£185,834
Partnership Funding required?	Y
Total Partnership Funding	£28,000
Who is contributing?	RFCC Local Levy
Households better protected	14

Background:

Natural Flood Management R&D Scheme in the Swaton Eau catchment of the South Forty Foot Drain. It addresses regular flooding to the villages of Swaton, Threekingham and Spanby, where a conventional engineered flood scheme is not viable.

Update since last meeting:

All legal agreements are completed, and work has recommenced to complete the construction of the attenuation ponds on the two remaining farms, however

weather and ground conditions have deteriorated leading to delays. Swales completed, while the weather was reasonable. 505 trees were planted in November on Grove Farm, to partly mitigate for a small number of trees lost during the construction of the ponds, and to provide additional wildlife and biodiversity benefit to the sites. It is hoped that work on the attenuation ponds will be completed by the end of the financial year, although this is dependent upon ground conditions. The PhD student undertaking monitoring on the site, will be installing additional equipment to test the success of the scheme in December.

1.10 Crowland and Cowbit Washes (Welland Flood Banks) Refurbishment

Lead Organisation	Environment Agency
Start Date	September 2021
End Date	March 2028
Total project cost	£2,799,759
Partnership Funding required?	N
Total Partnership Funding	N/A
Who is contributing?	N/A
Households better protected	0

Background:

The Crowland and Cowbit Washes (the Washes) are not performing as anticipated. The Cradge bank for the Crowland and Cowbit Washes needs refurbishment along with inlet syphons. The current focus of the study is to understand the area that benefits from the Washes. The Washes have not been utilised in recent years and the Welland system has been significantly altered since their construction.

This project aims to provide a better representation of flood risk associated with the operation (or non-operation) of the Washes through modelling and mapping. We need to better understand how the Washes function, which communities' benefit from their existence, and whether any improvements can be made to utilise them more effectively and reduce flood risk. We also need to better understand the implications of failure to store water in the Washes to define the benefit area. The number of properties currently benefitting is estimated at 663.

It is intended that this evidence base will be used in conjunction with that derived for Maxey Cut Banks to support development of an Initial Assessment that supports a strategic approach to continue maintain the standard of protection for Lower Welland catchment in line with the Welland CFMP recommendations.

Update since last meeting:

It has been determined that the Strategic Outline Case (SOC) will need to be supported by a long list of options. This needs to be developed through opportunity mapping with stakeholders. We intend to use support from Arup to undertake this in a workshop format in early 2023.

How this scheme is aligned with the FCERM Strategy Delivery Plan

This project supports FCERM Strategy Measure 1.5.4: By 2025 the Environment Agency will work with farmers, land managers, water companies, internal drainage boards and other partners to develop a long-term plan for managing future flood risk in the Fens. It is anticipated that this project will be part of the adaption pathways that will feed in to Fens 2100+.

1.11 FCERM in the Fens (L&N)

Lead Organisation	Environment Agency
Start Date	June 2021
End Date	July 2021
Total project cost	£64,000
Partnership Funding required?	N
Total Partnership Funding	N/A
Who is contributing?	N/A
Households better protected	0

Background:

Flood Risk Management (FRM) within Fenland & Lowland catchments is a key activity for Risk Management Authorities (RMA's) within the Environment Agency's Lincolnshire & Northamptonshire Area (LNA). This project will inform the evidence base used for LNA to deliver on the National FCERM objective:

“By 2025 the Environment Agency will work with farmers, land managers, internal drainage boards and other partners to develop a long term, adaptive plan for managing future flood risk in the Fens.”

The project will be split into three separate strands of work:

- Production of a Guide to Sustainable Flood Risk Management in Fenland and Lowland catchments;
- Beneficiary Mapping including supply chain vulnerability;
- Carbon baselining of current flood risk management activities in Lincolnshire and Northamptonshire Fenland and Lowlands.

Update since last meeting:

Completion of the Guide to Sustainable Flood Risk Management in Fenland and Lowland catchments of Lincolnshire and Northamptonshire is due shortly, and will incorporate the final confirmed outputs from the Carbon Baselining Exercise and the beneficiary mapping exercise. A second report containing a large number of beneficiary maps, is also going to be produced showing beneficiaries of flood risk management infrastructure per fenland and lowland catchment and per internal drainage board area. It is hoped that this work will be useful for future RMA projects in these areas and support the Fens 2100+ adaptive pathway project.

How this scheme is aligned with the FCERM Strategy Delivery Plan

This project supports FCERM Strategy Measure 1.5.4: By 2025 the Environment Agency will work with farmers, land managers, water companies, internal drainage boards and other partners to develop a long-term plan for managing future flood risk in the Fens.

2 Incident Management

Lincolnshire LRF update

- 2.1 **Flood Ex 2022:** The ambitious, multi-LRF exercise FloodEx22 was successfully run during the week 14-18 November 2022. A total of 20 LRFs took part in the combined East Coast & River Trent flood scenario exercise, and it was Lincolnshire LRF's major exercise for this year.

The main objectives for Lincolnshire LRF were to test the response to coastal flooding; to identify and test mass evacuation and shelter options including the activation of the Strategic Alliance Agreement; to explore Military Aid procedures, and to exercise the Recovery phase of major flooding incident. A number of additional local objectives were also included, as the scale of the scenario allowed multiple elements of planning and response to be tested across the different organisations.

Both organisational and LRF debriefs have taken place and will now be collated into a report and recommendations list. Early indications are that this exercise has been extremely successful and worthwhile for Lincolnshire, allowing new and less experienced staff from multiple organisations to gain experience in planning and responding to a major flood in a safe environment. It has highlighted the significant benefit that the work over the last few years to improve the Lincolnshire Coastal Multi-Agency Flood Plans has brought, allowing much more efficient and targeted response compared to the last time we faced a tidal flood scenario. It has also been remarked by the national exercise directors that Lincolnshire LRF came across as the most organised and most competent of the 20 participating LRFs to respond to the FloodEx scenario. This reflects the hard work and dedication that the LRF has put into preparing for tidal flooding, and although we will of course be looking at recommendations and lessons learned from the debriefs, it is encouraging to know that Lincolnshire is recognised as the most prepared LRF for East Coast flooding.

3. Working with Communities, Businesses and Partners

- 3.1 Our teams work with communities and help deliver partner outcomes wherever possible. Please find below some recent examples of these types of projects.

Throughout this quarter, several projects were undertaken by Internal Drainage Boards via the Public Sector Cooperation Agreement (PSCA) process. PSCA are an important tool to drive efficient and holistic approaches to managing systems and assets. We are able to use the expertise and specialist equipment of our local IDBs to carry out works on main river, and they are able to package up works with delivery of ordinary watercourse maintenance, thereby reducing fuel and staff costs by attending site only once.

- 3.2 For example, Black Sluice Internal Drainage Board (BSIDB) recently completed work in the Heckington area, clearing weeds on both the ordinary watercourse and main river at the same time. See photo below.



Photo 6: Work by BSIDB on the Heckington Eau

- 3.3 BSIDB also carried out works on the Kyme Eau on our behalf, removing excess weed growth. Weed had grown beyond the 10% margin on the right bank as work is normally carried out only from the left bank here (and the machinery cannot reach that far). The IDB worked to bring the margin back to within the 10%, as shown in the photos below.



Photo 7 & 8: Kyme Eau, before (left) and after (right)

4. Consultation

a) Risks and Impact Analysis

N/A

5. Background Papers

No background papers within Section 100D of the Local Government Act 1972 were used in the preparation of this report.

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