



# Carlisle City Council

## Report to Place Panel

### Report details

Meeting Date:	13 October 2022
Portfolio:	Economic, Enterprise and Housing
Key Decision:	No
Policy and Budget Framework	No
Public / Private	Public
Title:	Environment Agency Update on Flood Risk Management in Carlisle
Report of:	Corporate Director of Economic Development
Report Number:	ED 27/22

### Purpose / Summary:

The purpose of the report is to provide members of the Place Panel with an update on the work of the Environment Agency in terms of Flood Risk Management.

### Recommendations:

Members of the Place Scrutiny Panel are asked to:

1. Consider the details of the presentation

### Tracking

Executive:	
Scrutiny:	Place 13/10/22
Council:	

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# **Carlisle Flood Schemes update for Carlisle City Council Place Scrutiny Panel**

# Summary of EA Flood Risk Management work in Carlisle

## Completed

Carlisle Phase 1 (and 1a) FRMS

Carlisle Phase 2 FRMS

Rickerby FRMS

Gosling Syke FRMS

New Flood Warning Areas

Old Laundry Culvert

## Short term (0 – 5 years)

Low Crosby FRMS

Carlisle Phase 1b FRMS

Etterby Terrace

## Medium term (5 – 10 years)

Caldew FRMS

## Long term (10 + years)

River Eden  
Climate Change  
Strategy

## Ongoing / continuous

Maintaining conveyance on Main Rivers

Operating the Flood Warning Service

Maintaining and operating our FCRM structures and assets

# Completed Flood Risk Management work since 2015



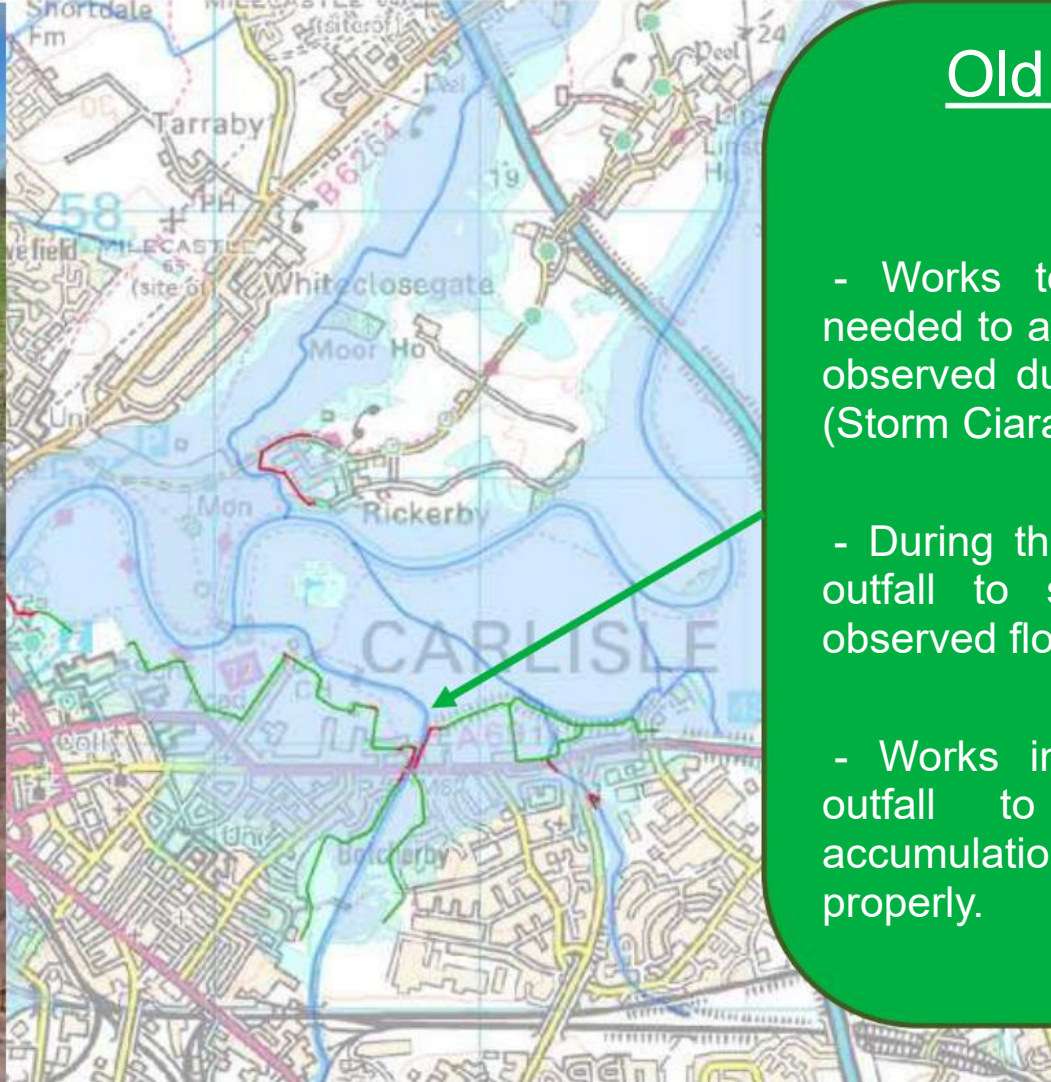
## Carlisle Phase 1 and 1a

- Raising of (4km) of existing flood defences along the River Eden and Petteril.
- Completed in 2021.
- Protects 1,279 residential and 107 non-residential properties.
- Designed to provide a 1 in 200yr (or 0.5% AEP) standard of protection but also provides a Desmond standard of protection.





# Completed Flood Risk Management work since 2015



## Old Laundry Culvert upgrade.

- Works to upgrade the culvert were needed to address a flood mechanism first observed during storms of February 2020 (Storm Ciara).
- During this event failure of the flapped outfall to seal properly contributed to observed flooding.
- Works involved relocated the culvert outfall to reduce risk of gravel accumulation and mean flap can seal properly.



# Completed Flood Risk Management work since 2015

## Rickerby

- Constructing 0.6km of new flood defences along the River Eden and Brunstock Beck.
- Completed in 2020.
- Protects 32 residential and 1 non-residential properties.
- Designed to provide a 1 in 200yr (or 0.5% AEP) standard of protection but also provides a Desmond standard of protection.





# Completed Flood Risk Management work since 2015



## Gosling Syke

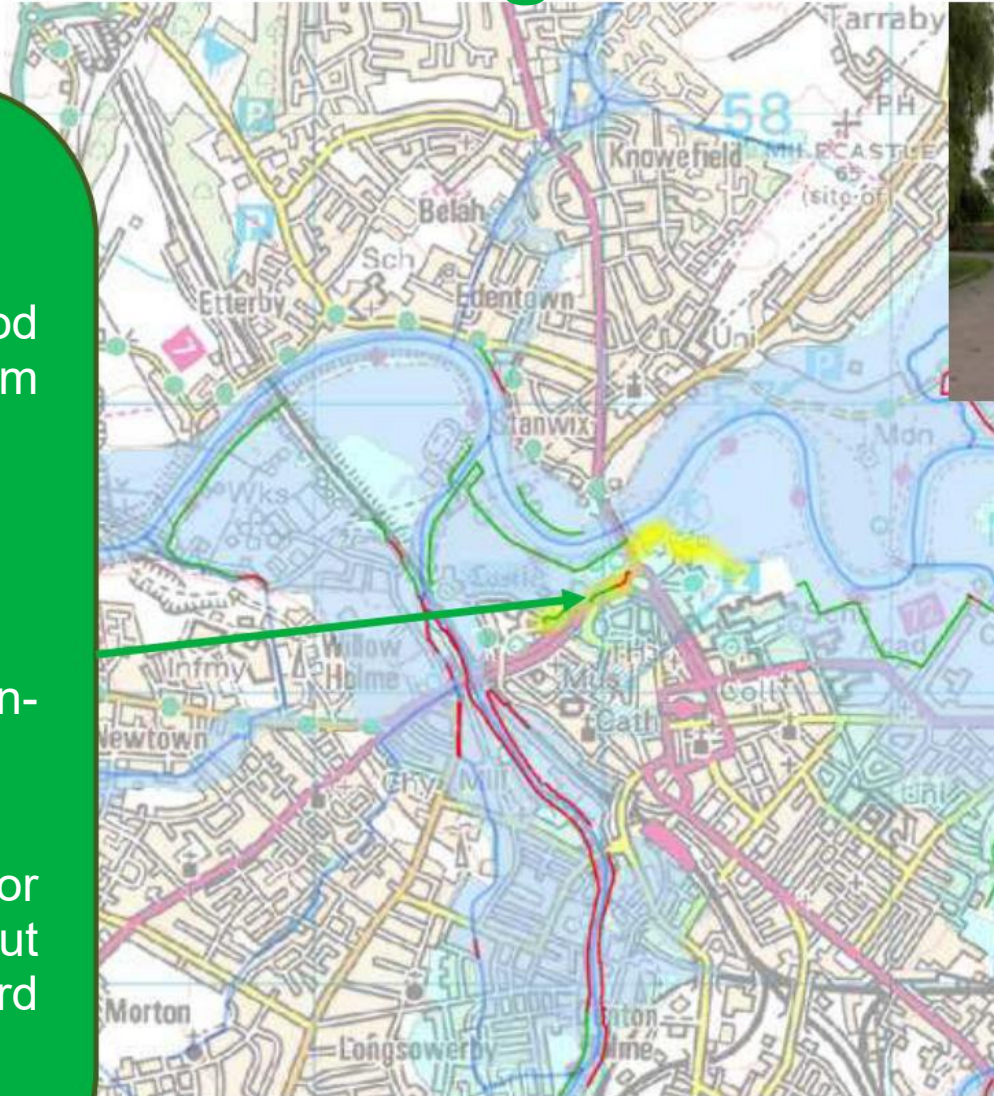
- Upsizing of 130m of Gosling Sike culvert and culvert inlet and grid improvements.
- Completed in 2021.
- Protects 53 residential and 2 non-residential properties.
- Designed to provide a 1 in 200yr (or 0.5% AEP) standard of protection.



# Completed Flood Risk Management work since 2015

## Carlisle Phase 2

- Raising and extending ~1km of flood defences along the River Eden from Trinity School to Carlisle Castle
- Completed in 2021.
- Protects 50 residential and 33 non-residential properties.
- Designed to provide a 1 in 200yr (or 0.5% AEP) standard of protection but also provides a Desmond standard of protection





# Recent improvements to the Flood Warning service in Carlisle

- New Flood Warning Area for Parham Beck
  - Went live on 22<sup>nd</sup> March 2022
  - Includes 255 properties
  - Based on modelled data as no recorded flood history
  - Uses new river gauge on Parham Beck (pictured).
- New Flood Warning Area for Warwick Bridge
  - Includes areas at risk from Cairn Beck and Trout Beck
  - Complements existing (separate) FWA associated with the R. Eden
  - Includes 75 properties
  - Uses new river gauge on Trout Beck.



# Carlisle FRMS progress updates – Low Crosby

- Removal of Warwick Holme historic agricultural flood embankment on south side of River Eden opposite Low Crosby allows river to reconnect with floodplain
- Significant flood risk reduction to ~ 60 properties in Low Crosby
  - Reduced risk to additional properties on floodplain between Low Crosby and Newby East
- Significant wider benefits including more environmentally friendly farming, no long term EA asset management requirement and carbon sequestration
- Works largely completed, just reseeding and reinstatement remaining



# Carlisle FRMS progress updates – Low Crosby



# Carlisle FRMS progress updates – Phase 1b

- Extend upstream end existing flood defences along west side of River Petteril in Melbourne Park
  - Tie into high ground at Tramside Way
  - Around edge of Adelaide St. allotments
  - Prevents any by-passing of new flood defences
- Earth bund / ground reprofiling in entrance to Melbourne Park from Adelaide St and 130m of raised reinforced concrete wall
- Current programme looking at Late spring '23 start date



# Carlisle FRMS progress updates – Etterby Terrace

- Working with Cumbria County Council as LLFA to consider ways to improve existing drainage network in vicinity of existing flood defence wall
  - at present water can collect here during high river levels
  - Existing network difficult to access and maintain
- EA Operational response required to provide pumps during high water levels on the River Eden

# Carlisle FRMS progress updates – Caldew scheme

- Work to date includes data collection and review, site visits, initial technical work on hydrology & hydraulic modelling and some of the feasibility studies.
- We have also launched a scheme website (<https://thefloodhub.co.uk/carlisle-caldew>) which provides an overview of our current work and will be used to provide updates.
- The next key milestone for the project is the conclusion of the hydrological and hydraulic modelling and economic assessment – due in spring 2023.
- In the coming months we plan to set up a stakeholder group which we hope will include from a range of stakeholders including political and local government, RMAs, businesses, river users, environmental and community representatives.
  - Please let us know if you would like to be part of this group.
- We also hope to brief the new shadow councillors as well key officers in the new authorities once appointed.



# Planning for Climate Change on the River Eden

Recently completed flood risk management schemes in the city provide a very high standard of protection – but it is unlikely that defences can be raised further in the future.

Recently released guidance now shows that effect of climate change on flood risk in the River Eden catchment will be greater than we understood when these schemes were designed.

Resilience to the effects of climate change is likely to require either broader adaptation and improved resilience within the city and / or measures to attenuate flood flows upstream of the city.

We will be developing the flood resilience service and highlight the need for community emergency response groups. We aim to develop a strategy which will consider a range of options to mitigate the effects of climate change on flood risk.

Projected percentage increase to peak river flow by 2080s

