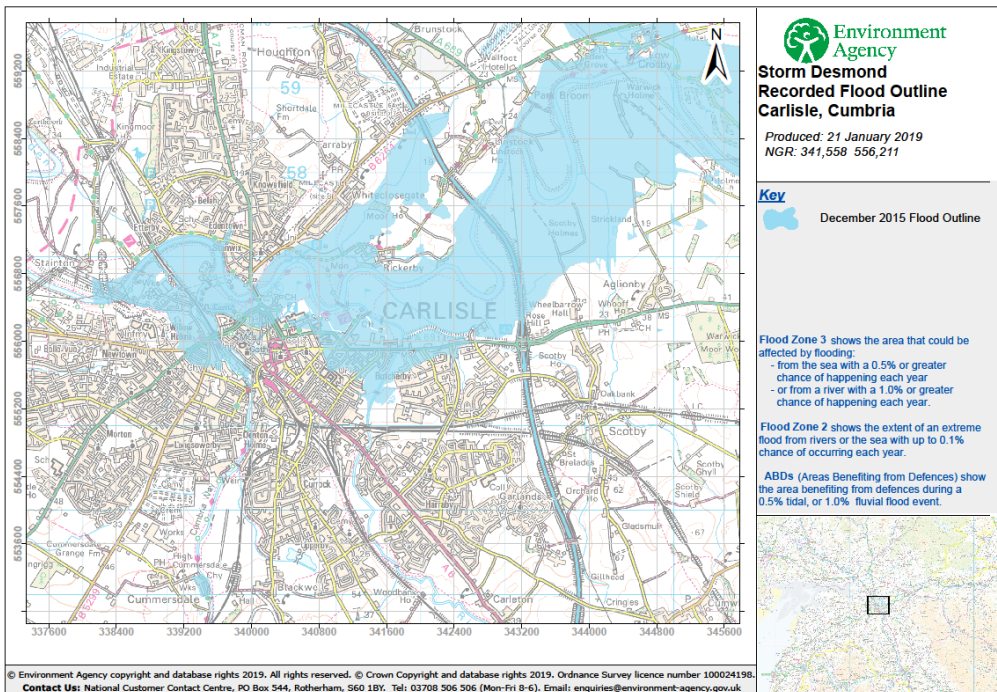


CARLISLE FLOOD RISK MANAGEMENT SCHEME



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INTRODUCTION

Carlisle has a history of flooding with large scale flood events occurring in 1968, 2005 and 2015 flooding both homes, businesses and impacting the wider community.

Following the 2005 flooding, the Environment Agency built a new Flood Risk Management Scheme on the Rivers Eden, Petteril and Caldew. The new scheme was delivered in two phases and completed in 2010. This scheme consists of a combination of flood walls, embankments, storage areas and pumping stations and was tested in June 2012 and May 2013 when the defences prevented properties in the city from flooding.

In 2015 Storm Desmond caused devastating flooding around the County with Carlisle again being severely affected. Flood water by-passed and overtopped the existing defences along the Rivers Eden and Petteril flooding over a thousand residential and business properties across the city and affecting road and rail infrastructure, power and utilities.

What Has Been Done So Far?

We have been working since Storm Desmond to identify which options will provide better protection for the City of Carlisle now and in the future. We are now in a position to share with you our preferred option which is designed to protect properties from the flood levels experienced during Storm Desmond.

In shaping this preferred option we have undertaken topographic surveys, river modelling, ground investigations, environmental assessments, and engaged with the community, local authorities, partner organisations and landowners. This has led us to develop our proposals and cost estimates in accordance with government treasury funding requirements.

Key Aims:

Our key aims for the future flood risk management scheme are to:

- ❖ Raise existing flood defences, as required, throughout the City
- ❖ Extend flood defences, as required, to protect more properties and create additional storage capacity
- ❖ Improve conveyance of flood water through the City at key bridge crossings.

We will also aim to:

- ❖ Identify locations where we need to manage surface water drainage in partnership with Cumbria County Council and United Utilities
- ❖ Align our work where we can with other organisations who are delivering improvement works to utilities and infrastructure
- ❖ Retain footpaths and cycleways
- ❖ Retain access to the river corridor for maintenance and gravel removal as required.

PHASING OF THE CARLISLE FLOOD RISK MANAGEMENT SCHEME

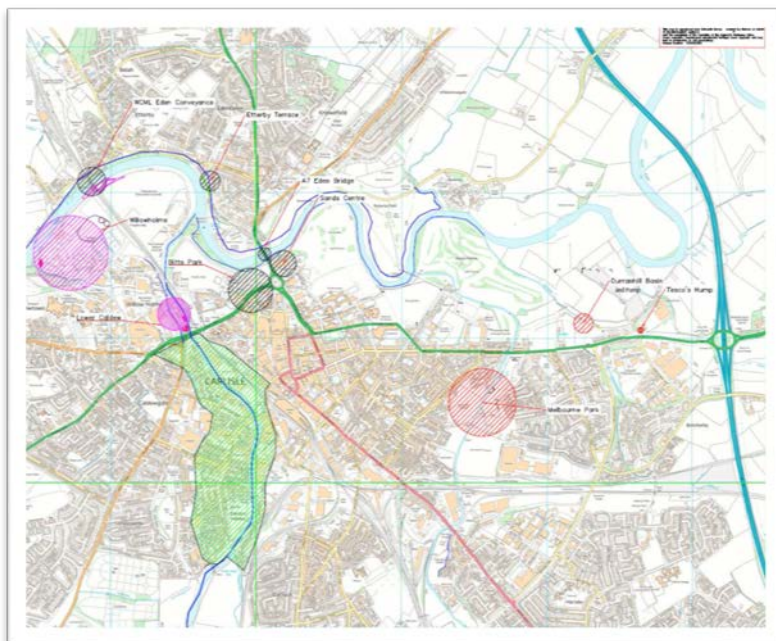
In order to reduce flood risk to the greatest number of properties in the city as early as possible and deliver with reduced wider disruption we have developed a phased approach. The scheme will be delivered in 4 phases providing better flood protection and greater resilience to residential and business properties. Subject to planning approval Phase 1 will commence in Summer 2019 with the further phases following.

Phase 1 – Melbourne Park, Durranhill and Tesco area (Rivers Eden & Petteril)
(Shown in Red)

Phase 2 – Sands Centre, Bitts Park, Etterby Terrace, West Coast Mainline Eden Crossing, A7 (Eden Bridge) conveyance area (River Eden) (Shown in Black)

Phase 3 – Willowhome, Maltings and Caldew downstream of A595 (River Eden & Caldew) (Shown in Pink)

Phase 4 - Caldew upstream of A595 to Denton Holme and Harraby Green (River Caldew & Petteril) (Shown in Green)



Phase One - Melbourne Park, Durranhill and Tesco area (Rivers Eden & Petteril)

Overview:

Phase 1 of the flood risk management scheme will involve extending and raising of existing flood defences to protect properties from flooding to the levels observed in Storm Desmond upstream and downstream of Botcherby Bridge on the River Petteril.

The works for phase one will consist of:

- ❖ Raising and extending existing Melbourne Park embankments to improve protection to properties
- ❖ Downstream of Botcherby bridge – scour protection, works to flood walls and flood gates
- ❖ Botcherby Bridge – concrete repairs, smoothing of flow path, gravel management improvements; in partnership with Carlisle City Council.
- ❖ Existing embankments raised by approximately 500mm and extended upstream to tie into higher ground
- ❖ Upgrades to Durranhill storage basin.
- ❖ Footpath and road entrance to Tesco supermarket resurface and raised by approximately 300mm
- ❖ Seepage cut-off along length of new embankments (takes various forms)

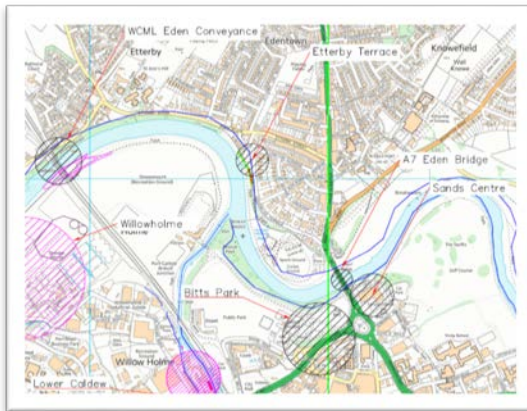
Phase Two - Sands Centre, A7 Eden Bridge, Bitts Park, Etterby Terrace, West Coast Mainline Eden Crossing, (River Eden)

Overview:

We are currently refining the detail for Phase 2 (shown in black), however we aim to undertake improvements to the existing flood defences and improve conveyance of flood water through key bridges in the City which will provide protection against Storm Desmond levels.

The works will consist of:-

- ❖ Raising existing walls around the Sands Centre.
- ❖ Conveyance improvements at the A7 bridge in partnership with Cumbria County Council
- ❖ Raising the existing Bitts Park embankment and walls and Darce Road road raising.
- ❖ Raising and extending the existing embankment and wall at Etterby Terrace.
- ❖ Conveyance improvements at West Coast Mainline Bridge in Partnership with Network Rail to improve flood flows.



Once we have the final detail for this phase of the scheme we will actively share this with you. We aim to have the information ready by early summer 2019.

Phase Three – Willowholme, Maltings and Caldew downstream of A595 (Rivers Eden & Caldew)

We are currently refining the detail for Phase 3 (shown in pink), but we can confirm that we will undertake improvement works to the existing flood risk management scheme in the areas of Willowholme, Maltings and Caldew downstream of A595. The work will consist of:-

- ❖ Potential flow diversion in partnership with Network Rail and United Utilities
- ❖ Raising existing flood defences to defend to a Storm Desmond level

Below is an outline of what is proposed showing the indicative areas. Once we have the final detail for this phase of the scheme we will actively share this with you.

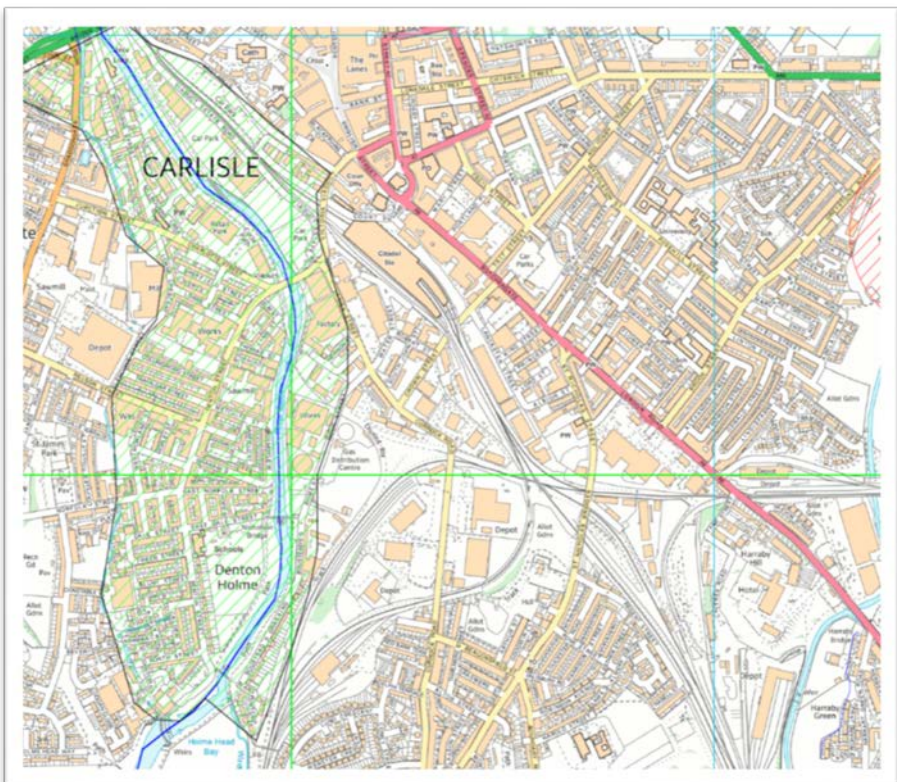


Phase Four - Caldew upstream of A595 to Denton Holme and Harraby Green (River Caldew & Petteril)

We are currently refining the detail for Phase 4 (shown in green), but we can confirm we will undertake improvement works to the existing flood risk management scheme that protects properties in the area of Caldew upstream of A595 to Denton Holme and Harraby Green on the River Petteril. The work will consist of:-

- ❖ Raising existing defences to protect against Storm Desmond level

Below is an outline of what is proposed showing the indicative areas. Once we have the final detail for this phase of the scheme we will actively share this with you.



KEY DATES FOR YOUR DIARY

We will have a member of staff from the Carlisle Flood Risk Management Scheme Project Team available to speak to you at the **Carlisle Library** on **Thursday 28th February** from **2pm to 7pm** if you have any questions or would like to chat through the proposed scheme.

If you have access to e-mail you can also get in touch with us at

CarlisleFRMS@environment-agency.gov.uk

Phase	Summary of Works	Planning application submission	Construction
1	Warwick Road area Defence raising & lengthening: Melbourne Park & Tesco. Temporary storage: Durranhill Basin pump upgrade. Conveyance improvements: Botcherby Bridge works & River Petteril channel modifications.	February 2019	Start - Summer 2019 Finish – Summer 2020
2	City Centre and West Coast Mainline (WCML) Eden Crossing Defence raising: Bitts Park, Sands Centre & Etterby Terrace. River crossing conveyance improvements: A7 Road Bridge & WCML Eden Crossing	Summer 2019*	Start - Summer/ Autumn 2019* Finish – Summer 2020
3	Lower River Caldew within influence of River Eden River Caldew and River Eden bypass channel, Network Rail conveyance improvements.+	2020	Start - 2020 Finish – 2022
4	Upper Caldew beyond influence of River Eden (not affected by Storm Desmond)+	2021	Start - 2021 Finish – 2021

* Based on Network Rail commencing works at WCML Eden crossing in summer 2019 under permitted development. Other elements of Phase 2 require planning permission.

+ Subject of ongoing appraisal of costs and benefits to determine scheme viability.

FLOOD RESILIENCE

Flooding is natural and can happen suddenly, so you need to be ready in case you are affected.

The Carlisle flood risk management scheme will reduce the risk of flooding, but it is not possible to remove the risk entirely. Climate change has the potential to increase the probability and impact of flooding.

Flooding is complex and can occur from various sources, however the Environment Agency only has responsibilities in relation to flooding from main rivers and the sea.

Be prepared

To find out if you are at risk of flooding from rivers or the sea, and for more information on how to prepare and protect your home visit www.environment-agency.gov.uk/flood or ring Floodline on 0345 988 1188. Advice and information on other sources of flooding can be found at www.thefloodhub.co.uk

You can register to receive free flood warnings direct to your telephone contact Floodline on 0345 988 1188

Consider creating a personal flood plan, and undertake actions to protect your property.

Investigate the potential of installing property level resistance measures to your home, or making your property more resilient inside.

Contact us

If you would like to contact staff at the Environment Agency to discuss any of the information shared today, you can send us a message at CarlisleFRMS@environment-agency.gov.uk

Floodline

0345 988 1188 (24 hr
service)

Or type talk 0345 602 6340

www.gov.uk/floodsdestroy

DO YOU KNOW WHAT TO DO?

**FLOODS
DEATH
DESTRUCT
BE PREPARED**