

Update for December's Executive Decision Session

This is an update of the progress made over the last 8 months on the flood alleviation work in York, as well as providing information on the programme and expected timelines for delivering the remaining work. In this update we have provided:

1. Summary of activities the Programme
2. Engagement highlights
3. Our response to Drought and preparing for Winter
4. Programme information tables
5. Map of the York Five Year Plan flood cell outlines

1. Summary of activities across the Programme

In June this year we celebrated completion of several of our City centre projects and achieving our target of better protecting over 2000 properties in York.

It was in response to the devastating floods of Boxing Day 2015 when 627 properties flooded in York, that the Government committed £38 million to upgrade the Foss Barrier, as well as £45 million funding to provide better flood protection to properties along the Rivers Ouse and Foss in the city.

In York, there are 18 areas of work across the city where flood defences are being constructed, including installing property level flood protection such as flood doors, temporary barriers, pumps and valves, which reduce the chance of flood water getting into a property.

The project milestone of better protecting over 2000 properties from flooding was marked at an event by the chair of the Environment Agency, Emma Howard Boyd.

Emma Howard Boyd, Chair of the Environment Agency (2016-2022), said:

“York is a historic city which is no stranger to the effects of flooding. The upgraded Foss Barrier and flood defence work across the city will make people and businesses more resilient to future climate impacts. York has always managed to prosper through floods from its great rivers and as climate change makes the rest of the world more vulnerable to flooding York’s progress is a model.

“The Environment Agency’s work here continues and with further investments we are upgrading and creating new flood storage areas as well as installing bespoke property level protection to homes and businesses across the city. We are also working with partners upstream to find storage capacity and natural flood management opportunities in the Swale, Ure, Nidd and Ouse catchments.”

Floods Minister (2022) Rebecca Pow said:

“The completion of the upgrade of the Foss Barrier is an important day for the people of York. The government has provided more than £80 million for flood defences in York since the devastating flooding of Boxing Day 2015, helping to protect 2,000 homes and businesses from the impacts of climate change

“This is part of significant ongoing investment in flood schemes across Yorkshire, with over a billion pounds invested across the region since 2015 – more than any other part of the country.”

The Foss Barrier protects properties by stopping flood water from the River Ouse backing up along the River Foss after heavy rainfall, and was originally built in 1987.

The barrier continually protected the city including the floods of 1995, 2000, 2007 and 2012, but following the floods in December 2015 work started to improve it to help adapt to the impacts of climate change.

The upgrade included replacing the old gate, which was 8.5 metres wide and weighed approximately 16 tonnes, and the structure supporting the gate. A new replacement gate was air-lifted into place at the barrier in January 2021.

The mechanical and electrical equipment needed to control the barrier was also improved. Eight new high-powered pumps have now been installed, increasing the pumping capacity from 30 to 50 cubic metres per second. The Boxing Day 2015 floods saw 40 cubic metres of water a second travelling down the Foss.

The work has also included an upgrade to the pumping stations electricity supply and complex control equipment used to automate the operation of the pumping station and the permanent backup power supply from the onsite generators. The new back-up generators mean they can operate during a power failure.

Improvement work at the pumping station started in spring 2016, and now that it is complete means the Foss Barrier is now one of the most resilient flood defence assets in the country.

In addition to the upgrade of the Foss Barrier, completion of new flood defences around Memorial Gardens and North St, Lower Bootham, Marygate, the village of Bishopthorpe, Clementhorpe and the roll out of flood resilience products means that over 2,200 properties are now better protected against the risk of flooding.

With the majority of inner-city work near completion, attention will focus on completing PFR and major construction work on flood schemes at Clifton and Rawcliffe and the Foss flood storage area which will hold up to a million cubic metres of water during severe weather and together protect a further 740 properties.

2. Engagement highlights

On the 17th June 2022, we hosted a visit in York to demonstrate and celebrate the successes we have achieved to date following the floods of Boxing Day 2015. The visit was attended by local councillors and Civic Party, MP's, EA Board Members and representatives from our partner organisations.



Environment Agency
@EnvAgency

Today marks the official opening of the Foss Barrier in York. The improved barrier and new flood defences in the city, means 2,000 properties are better protected from the impact of #flooding.

Read more: gov.uk/government/new...

@CityofYork @EnvAgencyYNE @EmmaHowardBoyd



4:13 pm · 17 Jun 2022 · Emplifi



York Lib Dems
@yorklibdems

The upgraded Foss Barrier has been officially opened today! 🎉

The £38 million @EnvAgencyYNE project to improve the barrier, combined with completed flood defence work in York, will protect 2,000 properties and make the city more resilient to the impacts of climate change 🌍



2:36 pm · 17 Jun 2022 · Twitter Web App



City of York Council
@CityofYork

Congratulations to all the partner organisations and everyone involved in this project 🌞

This is a positive step for York, but there will always be more to do to help protect our city, and we're ready to keep adapting our defences in the face of a changing climate.

Environment Agency - Yorkshire & North East @EnvAgencyYNE · 17 Jun

Today we officially opened the £38 million newly upgraded Foss Barrier in York, now one of the most resilient flood defences in the country, meaning 2,000 properties will be better protected from the impacts of climate change. Find out more: gov.uk/government/new...



4:08 pm · 17 Jun 2022 · Twitter Web App



3. Our response to Drought and preparing for Winter

Drought was officially declared for Yorkshire Area on 15th August. This due to a combination of low rainfall and high temperatures across most of the country. We remain in drought, despite the wet and unsettled weather that we have experienced in September and October.

Rainfall during September and October reached or exceeded normal for the time of year. Rivers in the Pennines are normal for time of year but in the east are still low. Yorkshire Water (YW) reservoir stocks have risen overall, however, are still low, at almost 34% full, whereas this time in 2021 they were at 64%.

Unsettled wet weather occurred throughout September and monthly rainfall totals throughout Yorkshire ranged from 85% to 141% of the long term average (LTA). Just eleven days in Sept accounted for 75% to 96% of the total monthly rainfall.

Despite this increased rainfall, below normal flows were recorded on the rivers Swale, Ure, Nidd and Ouse, ranging from 30% to 64% of the LTA.

What can you do?

Water is a precious resource and it is always helpful, in terms of future supplies and protecting the environment, for everyone to follow advice on saving water from their water company and use water wisely. The average person in England uses 140 litres per day. We all need to increase the amount of water we save to protect our natural environment and drinking water supplies.

Yorkshire Water's top tips for saving water, energy and money include the following:

1. Only wash full loads in your washing machine or dishwasher
2. Use a bucket and sponge to wash your car, rather than a hose-pipe
3. Have a four-minute shower, instead of a bath
4. Turn the tap off when brushing your teeth
5. Install a water butt to collect rainwater for watering your garden
6. Water your garden early in the morning or in the evening, when it is cooler

As always, if people see any environmental impacts due to dry weather, such as low flows, fish in distress or algae blooms, please report it to the Environment Agency incident line on [0800 80 70 60](tel:0800807060) so we can investigate and minimise any potential impacts on the environment.

It is important to note that, should we have any intense rainfall on dry or compacted ground, it can run off quickly making river levels rise fast and cause localised flooding. So it is possible to have floods during prolonged dry periods.

Getting ready for Winter

Our Winter Seasonal Awareness campaign makes sure all duty officers are up to speed and have a shared picture of risk as we head into the colder months. In addition to national training, in York, field and duty officers have undergone familiarisation walks, test operation of assets and a check of trigger levels and operational instructions. Where we have brand new assets walk overs with our partners have also taken place. This is to ensure all are comfortable to operate new and existing assets properly and to optimal effectiveness.



Remember that even protected properties are still at risk of flooding

The City of York is largely covered by our Flood Warning system. This is a free service which gives notice of when flooding is expected so that you can be prepared or take any necessary action. To sign up for Flood Warnings please:

Call **Floodline on 0345 988 1188** or visit www.gov.uk/sign-up-for-flood-warnings



Find out your risk of flooding, and see what warnings are in force at any time by visiting

www.gov.uk/check-flood-risk

You can find useful tips on what to do should flooding threaten your home and valuables by visiting

<https://floodsdestroy.campaign.gov.uk>

4. Programme Information Table

Capital Schemes being delivered

Flood Cell / Scheme	Estimated total cost (£k)	No. of properties better protected (approx.)	Brief description	Expected completion
B4 - Scarborough Bridge to Ouse Bridge (Right Bank)	2,555	39	A new flood wall along Leeman Rd from Westgate Apartments to a new embankment in the grounds of York City Rowing Club, with demountable flood barriers across the main and second entrance to the Memorial Gardens. A new, larger flood gate under Lendal Bridge. Raised height to existing flood wall along North St with replaced flood gates, including increased width to northernmost gate to improve pedestrian flow.	Completed Feb 2022
B8 - Clementhorpe	7,717	135	A new flood wall in front of Waterfront House. Raised steps between Waterfront House and Dukes Wharf and raised road beside Dukes Wharf. A new flood wall and flood gate at Rowntree Park Caravan Site. Raised height of existing flood wall at Roomzzz Hotel. A new flood wall at the top of the steps between Postern Close and Postern House and raised wall corners at these properties. A new bi-fold floodgate on Clementhorpe Road and a 240m long, up to 6m deep underground seepage cut-off along Terry Avenue.	Completed Sep 2022
B10 - Clifton & Rawcliffe	20,600	140	Increased height of the existing barrier bank and extended at both northern and southern ends. A wider 'footprint' of the bank to reduce the angle of the slope and so reduce the risk of bank slippage in the future. A new pumping station within the barrier bank to control water levels in Blue Beck storage lagoon.	Nov 2023
B11 - Coppins Farm to Scarborough Bridge (Left Bank)	3,665	156	Raised height of the flood embankment in St Peters School fields. A new transition wall between the embankment and the development at the end of Almery Terrace. New floodgates and glass panels to increase the height of the flood defence along Almery Terrace. A new flood gate at the top of the Almery steps and piling within the Network Rail embankment.	Completed May 2022
B12 - Scarborough Bridge to Lendal Bridge (Left Bank)	2,950	57	Increased height of the existing flood wall from Scarborough bridge to Museum gardens. This includes new flood gates and glass panels along Earlsborough Terrace and Esplanade Court, a new flood gate near Scarborough Bridge and new demountable panels for the Marygate flood gate. Increased height of the embankment within Museum Gardens and also extended at southern end. This includes terracing of the embankment adjacent to the Hospitium to preserve the rare True Service tree.	Revised date TBC

C1 - Bishopthorpe	3,390	170	A 180m long flood wall along Chantry Lane with a 6m deep steel barrier underground cut off. A flood gate across the bottom of Chantry Lane. A new manhole chamber with a penstock mechanism.	Completed Apr 2022
F8 /F10/F11- Foss Storage Area	17,526	490	Construction of a new embankment with outfall control structure upstream of York, designed to hold up to 1million m ³ during times of extreme rainfall. Once downstream river levels recede, the stored water will be released at a controlled rate. The creation of two ponds connected to the River Foss, together with improvements to the river channel, will result in new wetland habitats to support wildlife.	Nov 2023
Foss Barrier	38,000	1600	Greatly increased pumping capacity with replacement of all 8 pumps, including new infrastructure and new power supplies. In addition to 2 independently sourced High Voltage electricity supplies the barrier has 5 new back-up generators to maintain operation of all eight pumps at maximum capacity in the event of catastrophic power failure. All vulnerable infrastructure raised to first floor height. A new taller barrier gate, lifting equipment and housing.	Completed Apr 2022

Capital Schemes still in the design phase or being delivered by our partners

Flood Cell / Scheme	Description	Being delivered by	Stage
B9 – Germany Beck	City of York Council (CYC) led project with multiple benefits including increased flood protection to Fordlands Road and the A19 as well as reducing flood risk to local homes and businesses. Initial design is progressing well with planning submission planned for later this year.	CYC	Design
F1 – Tower Street	We are investigating options on how to provide flood protection along Tower Street to prevent exceptionally high flood levels on the River Ouse bypassing the defences within St Georges Car Park and entering the Foss Basin which would pose increased flood risk in the lower Foss. This scheme will initially involve raising of the wall between St George’s car park and the Foss Basin tying into Skeldergate Bridge.	Environment Agency	Design
F4/F5 – Tang Hall and Osbaldwick Becks	We have supported CYC and Masters students from York University who have studied this area and prepared dissertations on possible effectiveness of Natural Flood Management methods. All capital works options have been exhausted at this time.	N/A	N/A
F12 – Westfield Beck	We have been in discussions with our partners and consultants to consider what options may be available. Our findings concluded that no further action is being taken at this time. We will continue to support partners when required.	N/A	N/A

Property Flood Resilience (PFR)

Completed PFR Flood Cells

Flood Cell	Cell Name	No. of eligible properties	Total participating	Total delivered	Percentage achieved
B16	Foss Confluence to Fulford	55	44	44	80%
B8	Clementhorpe	28	27	27	96%

All York PFR Flood Cells

Flood Cell	B7	B8	B11	B12	B15	B16	C1	C2	C3	F8	Total
1 Participation	12	27	0	4	27	44	2	9	60	2	187
2 Getting in touch	12	27	0	4	27	44	2	9	60	2	187
3 Property Visits	4	27	0	2	18	44	2	8	58	2	165
4 Viewing Products		27	0			44					71
5 Choosing products		27	0			44					71
6 Costs reviewed		27	0			44					71
7 Signing Documents		27	0			44					71
8 Ordering Products		27	0			44					71
9 Installing Products		27	0			44					71
10 Training and handover	0	27	0	0	0	44	0	0	0	0	71

Key

No.	Number of properties
	Stage complete
	Stage initiated/ongoing

5. Map of the York Five Year Plan Flood Cell Outlines

