FLOOD WARNING EXPANSION PROJECT (FWEP) DELIVERY IN CUMBRIA AND LANCASHIRE

ABOUT THE PROJECT

The Flood Warning Expansion Project (FWEP) is a Treasury-funded £5.15 million project which is being delivered by the Environment Agency (EA) between 2019 and 2023. The aim of the FWEP is to provide a flood warning service to all 26,000 properties in England at high risk* of flooding, that currently have no flood warning service. The majority of these properties are located within areas which have traditionally been difficult to provide a flood warning service to. For example, rapid response catchments, smaller urbanised watercourses, small collections of rural properties, or dispersed communities.

The local EA Flood Resilience team in Cumbria and Lancashire have been delivering FWEP since 2019. Their final new flood warning service was launched on 7th December 2022 for Braithwaite, Cumbria.

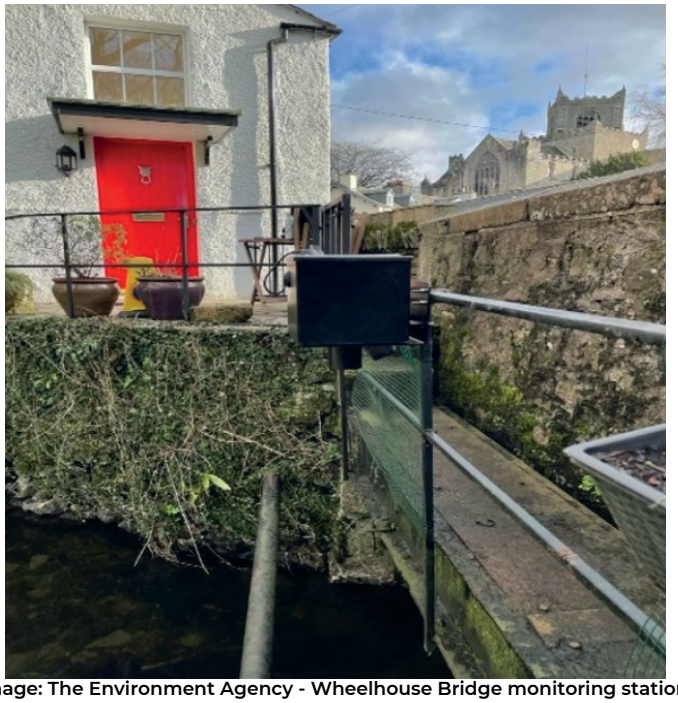


Image: The Environment Agency - Wheelhouse Bridge monitoring station

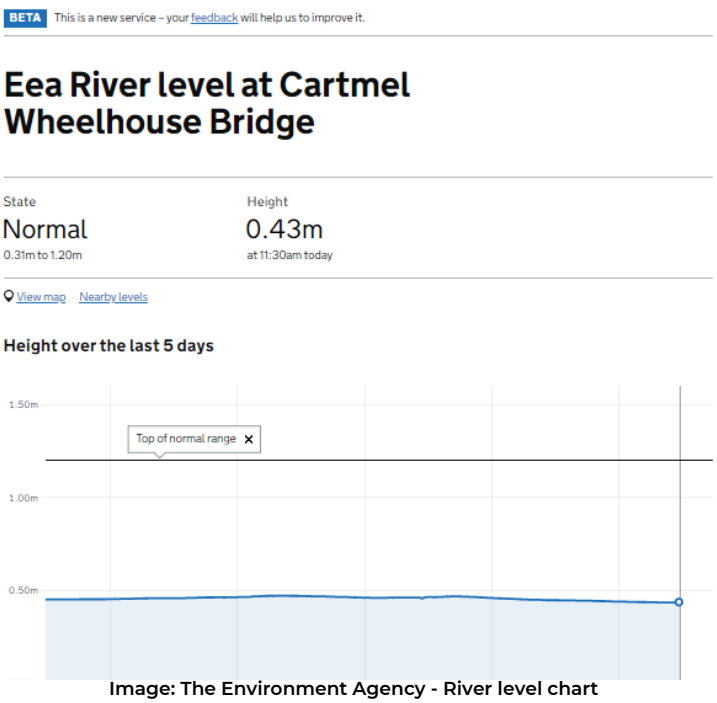


Image: The Environment Agency - River level chart

Example: A new gauge was installed on Wheelhouse Bridge in Cartmel (left) in May 2022. The gauge sends river level data to the Environment Agency which allows them to issue a Flood Warning for Cartmel and Cark and display river level data on the public Check for Flooding website (right).

*High risk as defined by National Flood Risk Assessment (NaFRA) data as greater than, or equal to, a 3.33% (1 in 30) chance of flooding in any year.

DELIVERY METHODS

To deliver the new flood warning services in Cumbria and Lancashire three approaches have been used:

Using Existing Telemetry

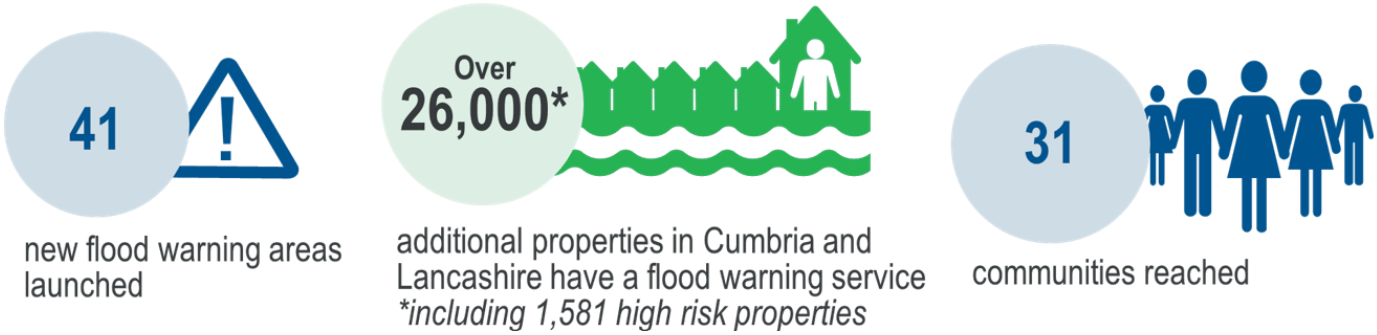
This approach was delivered in May 2019, adding an additional 120 high risk properties to the flood warning service. This approach involved extending the existing flood warning areas to cover properties nearby, which are warned using the existing forecasting and warning infrastructure and local river level gauges.

Install New Telemetry

This approach has taken most of the time and resources to deliver as it involved the installation of several new river level and rainfall gauge sites in communities. The EA Flood Resilience team used hydraulic modelling data, undertook topographic surveys, and reviewed hydrometric data to derive new flood warning areas, and set flood warning thresholds on the newly installed river level and rainfall telemetry sites. As a result, 41 new flood warning areas have been launched in 31 communities across Cumbria and Lancashire from 2020 to 2022. This has provided a flood warning service to 876 high risk properties, and a total of 5,520 properties at risk of flooding.

Extend Existing Flood Alert Areas

This approach involved extending the existing Flood Alert areas to cover the hardest-to-reach properties, so that they still receive notification of heightened flood risk in their area. This work was undertaken throughout 2021 and 2022 by the local Flood Resilience team and added a further 585 high risk properties to the flood warning service.



SUSTAINABLE TECHNIQUES

Prior to this project many Flood Warning Stations were built with large footprints; they sat on large concrete bases and had big cabinets. They were often mains powered making their carbon and visual impact larger.

For this Flood Warning Expansion Project designs considered the sustainability of installation and operation of the site. Some examples of the approaches used were:

Avoided concrete, plastics, and non-recyclable materials where possible (No concrete bases were used)

Mainly used stainless steel cabinets and recyclable materials

Used rechargeable and renewable power sources wherever possible

Made the equipment long-lasting to reduce site visits, carbon footprint and maintenance costs

NEXT STEPS

Going forward, following the delivery of FWEP, the Flood Resilience team will monitor the performance of the new flood warning services that have been delivered, and will look to refine the services based on verification of information gathered following any near misses or flood incidents. Improvements to existing hydraulic modelling and new/updated flood forecasting models are also programmed for these locations, as part of the EA's work to continually improve the flood warning service.

FIND OUT MORE

- Sign up for flood warnings via the QR code or Floodline on 0345 988 1188 or www.gov.uk/sign-up-for-flood-warnings
- Check live rainfall and river gauges at: www.gov.uk/check-flooding