

The Environment Agency is delivering a Flood Risk Management Scheme (FRMS) to better protect homes and businesses from flooding in the Kent Catchment, enhance the local environment and improve community amenities.

We are continuing our programme of surveys and investigations into the structural integrity of the Stock Beck culvert system, which will help us to understand ground conditions and the locations of any utility services around Ann Street. This newsletter will provide an overview of the survey and investigation work due to take place. If access to gardens or privately owned land is required to conduct the surveys a Notice of Entry will supplement this newsletter.

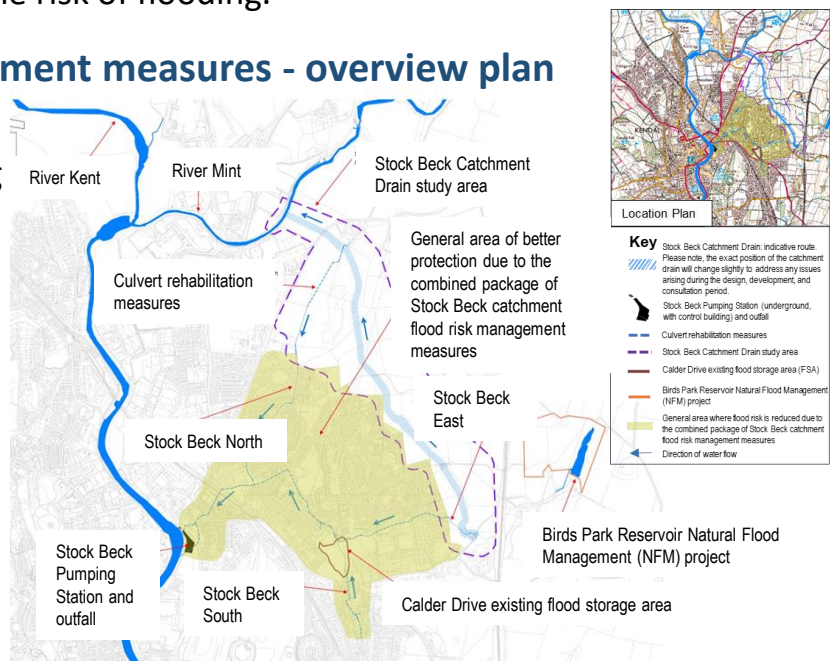
Stock Beck overview

Stock Beck comprises of several sections of watercourse that originate in farmland before entering the eastern side of Kendal. The watercourses converge and are joined by connections from surface water drains. The combined flows pass through largely culverted sections within the urban area and outfall into the River Kent in the town centre, near Gooseholme Park.

As part of the Kendal and Upper Kent Catchment Flood Risk Management Scheme we will address the flood risks associated with Stock Beck, and design improvements which will manage water within the catchment more effectively. A combination of measures will be used to improve the conveyance of Stock Beck through the town, as well as managing excess flows to reduce the risk of flooding.

Stock Beck Flood Risk Management measures - overview plan

The Stock Beck measures include; the construction of a new pumping station at Gooseholme to pump excess water into the river Kent in storm conditions; the relining and replacement of sections of the Stock Beck culvert to improve the capacity and conveyance of water through the system; and a proposed catchment drain located above Kendal to take excess water across land to slow the flow.



The above plan highlights the combination of flood risk management measures being used to reduce flood risk across the Stock Beck catchment and general area of better protection.

Our surveys explained

We have already undertaken CCTV surveys of the Stock Beck culverts which have helped determine the structural integrity and conveyance capacity within the system. Whilst a number of blockages were remedied at this time, further survey works are required to understand the Stock Beck Catchment in more detail around Ann Street. This information will inform the design of rehabilitation works in this area, as well as how we deliver it.

Topographic surveys

Non-intrusive topographic surveys will be undertaken to ascertain ground levels and how water flows through the area.

'Atlantic Geomatics' will use a GPS laser and level equipment to record the level and sizes of pipes and outlets along Ann Street.

In some locations we will require access to gardens and land – where this is required, as with all our work, a Notice of Entry letter will be issued to the property owner.

Atlantic Geomatics are the Environment Agency's contractor and will also hold a letter of authorisation.



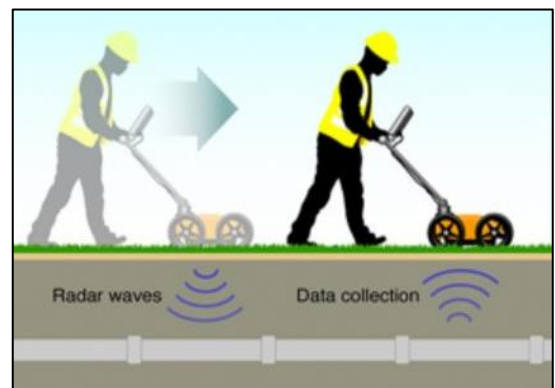
GPS laser and level equipment

Ground Penetrating Radar (GPR) surveys

Ground Penetrating (GPR) Surveys are also non-intrusive and use equipment (like that shown) to gather underground information.

GPR is a geophysical locating technique that makes use of radio waves to take images of objects below ground level, without digging up the soil. The objects that need their images to be captured should not be too far into the ground (no more than tens of metres below surface level).

GPR Surveys are used to find the exact location of natural or man-made objects underground, natural materials, and will detect changes in the position of those objects. For example, surveyors can use them to detect changes in the soil profile, pockets of air, the layout of underground pipelines, rocks, groundwater tables and other geological features.



GPR survey equipment

GPR surveys continued ...

GPR systems have two key pieces of equipment; the transmitter and the antenna. The transmitter (which is placed close to the ground) sends radar signals into the ground. The signals are reflected and detected by the antenna. The signals received are processed and shown on a graphic recorder.

As the transmitter and antenna are moved across the surface being surveyed, the graphic recorder generates a radar or cross-sectional image of the earth.

CCTV Surveys

Working on behalf of the Environment Agency, 'lLine' will carry out CCTV surveys on the culverts using a range of specialist vehicles and equipment.

CCTV (camera) surveys are used to identify and log the structural condition and conveyance capacity of the culverts. Where blockages are identified within the culverts they will be removed by jetting, vacuuming or using cutting equipment. Typical blockages consist of tree roots and silt build up.

What will we see?

Specialist vehicles will be seen in a number of locations where we are carrying out the survey work, together with topographic and GPR survey equipment. Personnel will also be visible as they track along public footpaths and the road.



Water jetting tanker



CCTV operator



Remote camera vehicle

What time of day will the works be undertaken?

Works are typically carried out between 8.00am and 6.00pm (daylight dependent), Monday to Friday. In the event weekend work is required residents will be notified.

How long will you take to complete this work?

We envisage that the surveys will be complete in the coming months, within the 'in-river working window' (typically April/May to September/October).

Will you need to access individuals land, gardens ?

We will inform any affected residents where we need to gain temporary access to gardens or driveways via a 'Notice of Entry' letter - this is standard correspondence sent out in preparation of such activities.

What vehicle and pedestrian impacts will there be?

We do not expect any impact on vehicle or pedestrian access during the works.

Where will we find the latest information?

We will continue to keep you up to date with newsletter updates, with all information available on our flood scheme website.

To keep up to date visit www.thefloodhub.co.uk/kendal and navigate to the 'What's Happening' page. Alternatively, you can visit us at our Flood Scheme Information Hub based on Beeson Road Kendal (adjacent to Lidl supermarket). We are open every Tuesday and Thursday from 10am to 4.30pm.

Contact us

Customer service 03708 506 506

KendalFRMS@environment-agency.gov.uk

VolkerStevin Engage

Our new project app allows you to keep up to date on the Kendal Flood Risk Management Scheme, view construction progress, images and provide feedback.



Keep up to date

Visit www.thefloodhub.co.uk/kendal
www.thefloodhub.co.uk/upperkent

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