Upper Kent Catchment Flood Risk Management Scheme

Burneside, Staveley and Ings surveys and investigations

Environment Agency

October 2023

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

We are continuing our programme of surveys and investigations which will help us to understand ground conditions and the location of utility services in the villages of Burneside, Staveley and Ings.

As we continue to progress a Flood Risk Management Scheme (FRMS) for the villages of Burneside, Staveley and Ings, from late October we will be undertaking further ground investigations and surveys within the area.

Over the next three months we will be undertaking Topographic and Ground Penetrating Radar surveys and investigations which will help us to ascertain ground levels, and how water flows through the area, as well as identifying known and unknown underground features.

This information will continue to inform the outline design of the Kendal and Upper Kent Catchment FRMS which once complete, will aim to provide a 1 in 100 year standard of protection (a 1% chance of flooding in any given year).

These surveys and investigations are non-intrusive and will be undertaken by Atlantic Geomatics, our Environment Agency contractor.

Topographic survey explained

In order to understand the Kent and Gowan catchment area in more detail, a number of topographic surveys will be undertaken to ascertain the ground levels and how water flows through the area.

These surveys are non-intrusive and are carried out using a GPS laser and level equipment. In some locations we will require access to gardens and land to undertake these surveys. Where access to gardens and land is required, a letter will be issued to the property owner.

GPS laser and level equipment

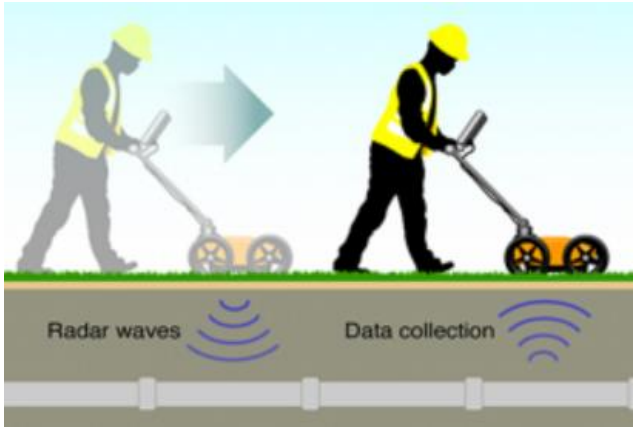
Ground Penetrating Radar (GPR) survey explained

The GPR Survey is also non-intrusive and uses equipment (like that in the picture below) 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 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.



GPR survey equipment

What happens next?

Collection of this information will provide more detailed data we will use to help develop our understanding of the area and further inform development of the outline design of the flood risk management scheme. Adding to this data, it is possible that further surveys may be required in the future as the scheme progresses.

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