

Kendal Flood Risk Management Scheme

Groundwater and Surface Water key facts



European Union
European Regional
Development Fund



Environment
Agency

The Environment Agency is delivering a proposed three phase Flood Risk Management Scheme to better protect residential and business properties from flooding in the Kent catchment and improve the local environment and community amenities. Kendal is the first phase to be delivered with construction starting in Winter 2020. Burneside, Staveley and Ings is the second phase to be delivered and Upstream storage will be the final third phase. Complimentary to this, Natural Flood Management interventions are being delivered to slow the flow. Here is a snapshot of some of those benefits being delivered as part of the scheme;



What is groundwater and surface water flooding?

Flooding from groundwater can happen when the level of water (known as the water table) rises within the rock or soil that makes up the land surface. The level of the water table changes with the seasons due to variations in the long term rainfall. When the water table rises and reaches ground level, water starts to emerge on the surface and flooding can happen in low lying areas. Flooding from groundwater is most common in geographical areas where the underlying ground is permeable, or in locations with sand and gravel near rivers. This is the situation in some locations where we understand some properties suffer from cellar and basement flooding, often caused during prolonged periods of heavy rainfall and high river levels. When the river levels are low, groundwater will be able to rise and flow underneath the houses, roads and river walls into the river. High river levels may prevent the 'natural flow' of groundwater from happening increasing the groundwater pressure leading to cellar and basement flooding. Where we understand there to be known groundwater flooding, we will look at all options to determine the most suitable flood wall design. This may range from repair works to minimise seepage, to piling which controls underground flow paths.

Flooding from surface water can happen for a number of reasons, this could be due to the amount and intensity of rainfall that is too much for the ground to absorb, run-off from hard impermeable surfaces and the drainage capacity in existing surface water drainage systems. Our scheme will address some of this by the installation of a new pumping station on Stock Beck, installing drain-down valves as part of the scheme and delivering some improvements to paths and kerbs to direct surface water away from property. We are working closely with Cumbria County Council to further reduce the risk of surface water flooding.

Keep up to date

www.thefloodhub.co.uk/kendal

Contact us

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Key dates

Dec 2019

£76m

Funding approved to
deliver all three
phases

Jan 2020



Phase One Kendal
detailed design
continues

Winter 2020



Phase One Kendal
construction starts

2023



Phase One Kendal
scheme complete

What benefits will the Flood Risk Management Scheme deliver



We are delivering a Flood Risk Management Scheme that is taking a catchment based approach. Whilst our scheme is designed to reduce flood risk from river flooding, our approach has much wider benefits. The combination of upstream storage and conveyance improvements means the river flows and river levels through the catchment will be managed more effectively.

In addition, we are also combining our flood scheme with other Natural Flood Management (NFM) projects. These projects are an important element, using various techniques to slow the flow, divert floodwater, or store within the catchment. We are currently supporting the delivery of four NFM projects that aim to slow overland flow and reduce surface water flooding to properties.

We have been undertaking a substantial amount of data gathering, a fundamental part of the detailed design process. These activities inform our understanding of the local environment, land features including physical boundaries, services and underground features, foundations of existing structures and ground conditions. This activity has provided us with a good understanding of the underground surface water network and discharge points as well as ground conditions in areas where we know groundwater affects properties. This information has fed into the detailed design of the scheme to ensure that we build a scheme that can; mitigate against some of the groundwater flood risk, ensure all surface discharge points remain, integrate drain down valves in key locations of the scheme, and where improvements can be made to reduce surface water flooding, we will continue to work with Cumbria County Council.

The Flood Risk Management Scheme will also reduce flood risk from Stock Beck, a watercourse that predominately runs underground in culverts with inadequate capacity in flood conditions, often surcharging, flooding roads and many properties. Our work on Stock Beck will be in three stages and will consist of; a new pumping station to increase the flow and discharge of Stock Beck into the River Kent, repairs to the existing culverts to aid flow and reduce blockages, and a proposed new catchment drain that will take excess water from higher up in the catchment into the River Mint which will reduce the amount of water entering the system.

How you can help?

There are some measures we can all take to help reduce the amount of surface water that runs off property when it rains. The more hard, impermeable surfaces you have on your property, the less rain can be absorbed and instead runs onto paths, roads and into existing, often overwhelmed drainage systems, becks and rivers. There are a number of simple measures you can take to reduce the amount of surface water entering the drainage systems and generally come under three terms 'Greening', 'Permeable surfaces' and 'Water storage'

Greening - turning hard surfaces into green spaces that provide the opportunity to soak up rain, redirecting downpipes to green areas of your garden or planting a range of species that thrive in damp conditions and have the ability to soak up water.

Permeable surfaces - replacing tarmac or hard surfaced drives and paths with permeable paving to allow infiltration or lay gravel or stones as an alternative.

Water storage - Installing waterbutts will collect water from your roof, reducing the amount of water lost into drainage systems and will also reduce your overall water usage.

For more information on this visit www.thefloodhub.co.uk/knowledge-hub



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