

# Kendal Flood Risk Management Scheme Gravel Management 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. Burnside, Staveley and Ings is the second phase to be delivered and Upstream storage will be the final third phase. Complimentary to this, NFM interventions are being delivered to slow the flow. Here is a snapshot of some of those benefits being delivered as part of the scheme;



We promote the sustainable management of rivers by encouraging the retention, and restoration of natural process wherever possible. This is because we aim to maintain a healthy, natural river environment that requires little or no intervention. We do however recognise that the removal of gravel, in some specific locations, is necessary to provide flood risk benefits.

Over a number of years, we have developed a good understanding of the river networks within the Kent catchment and have identified locations where we actively monitor, and when necessary remove excess gravel. These locations are identified where water levels are increasingly affected by in river features like bridges, weirs, and obstructions on a floodplain. This is because any obstructions within the river channel affect the natural speed, direction and flow, dropping gravel and other material which builds up over time.

We have undertaken careful assessments across the Kent catchment to identify where we need to carry out regular river bed and gravel accumulation monitoring, the outputs of which have informed the development of thresholds, which once exceeded will identify a reach for gravel removal. The thresholds we set are based on river observations, surveys and modelling which gives us detailed profiles of the river bed. Annual surveys of the river will identify in these key locations if gravel has exceeded the threshold, which once identified will be scheduled for removal during the summer months.

Before any gravel removal is undertaken we do need to undertake a number of environmental assessments to obtain approval. Gravel removal is a regular activity that we undertake as part of our summer maintenance regime, but should we experience high river levels, or if our environmental assessments highlights an area of concern or particular impact on the natural environment, this may cause a delay.

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[www.thefloodhub.co.uk/kendal](http://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

Sep 2020



Gravel removal in  
Kendal

Winter 2020



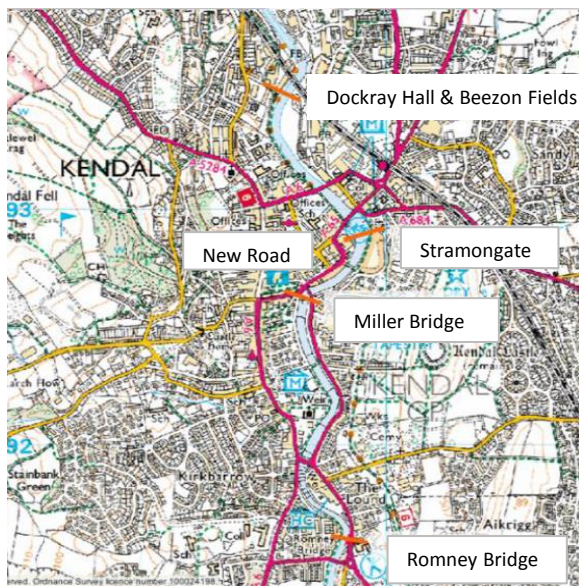
Phase One Kendal  
construction starts



CAPITA

Jacobs



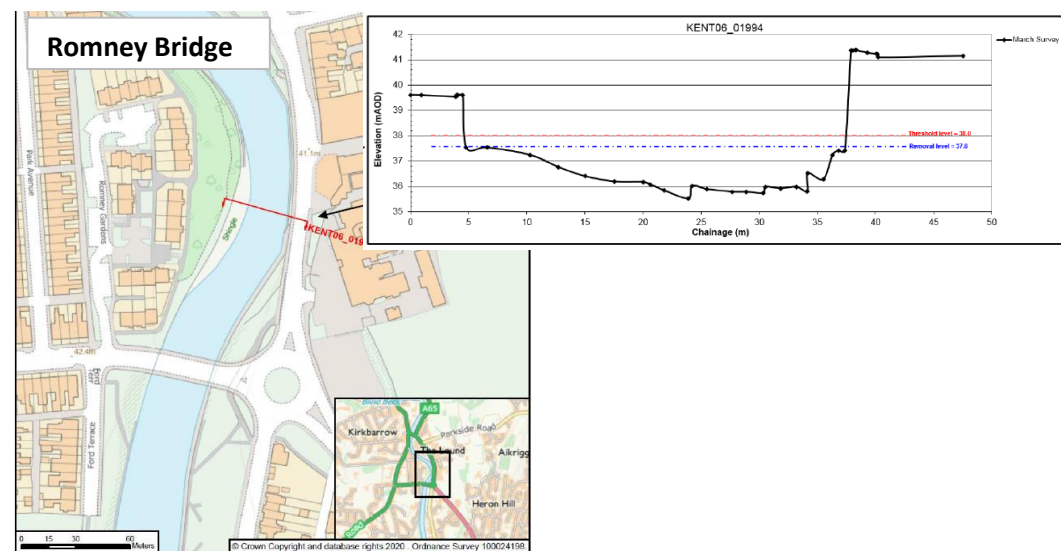
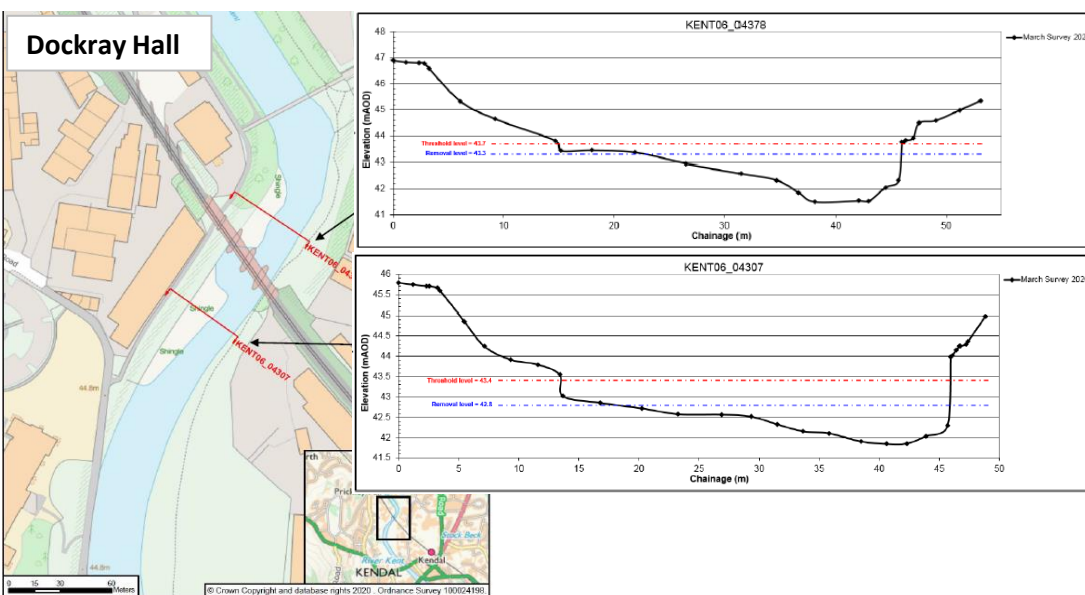


We have nine locations in the Kent catchment that we monitor for gravel accumulation. Not all of these locations have thresholds set for them as some are monitored annually on a visual inspection. This is often the case where we have a confluence where two rivers meet or we have built engineered gravel traps that are designed to capture gravel in the river channel at a specific location before it makes its way downstream and accumulate in an area that may be difficult to remove from.

The nine locations within the catchment for gravel monitoring and removal are:-

- Abbey Bridge Staveley
- Confluence of River Gowan and River Kent at Staveley
- Sandybottoms, Kendal
- Dockray Hall and Beezon Fields
- Stramongate
- New Road
- Miller Bridge
- Romney Bridge

The locations identified on the map (left) indicate where we have monitoring and threshold procedures in place along the River Kent in Kendal. Examples below show some of the survey results and indicate where gravel levels have exceeded the lower removal threshold (blue line).



We started gravel removal in early September 2020 and we will be undertaking these works firstly at Dockray Hall and Beezon Fields followed by removal at Sandybottoms and finishing at Romney Gardens. Gravel accumulations in some locations haven't exceeded the thresholds, therefore no removal will take place this year but will be surveyed again early next year.