Kent Catchment Flood Risk Management Scheme
Natural Flood Management (NFM) 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, 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;

1480 Homes better protected

1151 Businesses employing 6,105 people better protected

82 Community facilities better protected

3km Of riverside footpath improvements

£800k Secured to deliver NFM in the Kent Catchment

3666 New trees planted - six new trees planted for

4 NFM projects underway

55 Hectares of improved habitat for wildlife and community accessibility

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

NFM projects

Stock Beck, Kendal

This project is delivering:-
- storage ponds to hold water
- diversion pathways to divert water
- long leaky dams to slow the flow
- tree planting to stablise land and soak up water.

This is the start of a number of other opportunities to deliver more in the catchment


Town View, Kendal

This project is delivering:-
- earth bunds to hold water
- leaky dams to slow the flow
- tree planting to stabalise land and soak up water.

This project is designed to address the surface water flood risk in the area.


Staveley

This project is delivering:-
- re-connection of floodplains
- flow routing to divert excess water
- run-off attenuation to allow water to be stored.

This project is designed to reduce flooding from both river and surface


Peatland restoration

Restoring 50 hectares of peatland in the Upper Kent catchment providing a number of benefits including:-
- 164 tonnes of carbon storage each year
- additional water storage capacity
- improved habitat for specialist species
- helping the catchment become more resilient to climate change

European Union
European Regional Development Fund

Environment Agency

CAPITA

Jacobs

VBA
VolkerStevin Boskalis Westminster ATKINS

Natural Flood Management (NFM) in the Kent Catchment

European Union
European Regional Development Fund

Environment Agency

We are delivering a Flood Risk Management Scheme providing a 1 in 100yr standard of protection to homes and businesses in the Kent catchment. In order for us to deliver this we have identified our preferred option following full public consultation that provides a combination of linear defences, improved pumping and 3million m^3 of flood storage. This is the most economically viable, technically feasible, environmentally sustainable and socially acceptable option. NFM does form part of our proposals and is complimentary to traditional engineered measures. The diagram below demonstrates why our proposed £76m scheme is our preferred option and some of the limitations of delivering only NFM as a stand alone solution.

Number and type of interventions required to achieve the 3 million m^3 storage required or the 6 million m^3 storage required in place of storage and linear defences.

Cost £millions	£13.3 - £14.6m	£76m	£45m	£90m	£90 - £112m	£180 - £225m
	Investment required to achieve 1 in 100yr standard of protection or the equivalent of a 1% chance of flooding in any given year					
Flood storage capacity (million m^3) 6		Kendal 6km linear defences Stock Beck 2km catchment drain. Stock Beck Pumping Station. Burneside, Staveley & Ings 1km of linear defences.		Minimum 24,000 small dams required with each having the capacity to store maximum 250m^3 flood water. Build costs approx £12m plus replacement costs every 10 - 20 yrs = £90m.		48 million broadleafs planted 300km^2 (30,000 hectares) land required. OR 54 million conifers planted 240 km^2 (24,000 hectares) land required. River Kent catchment upstream of Kendal = 184km2
5						
4						
3		Kentmere Tarn storage volume = 1.2million m^3, covering 0.5 km2 or 50 hectares of land Controls 10% of the catchment. Kentrigg storage volume = 1.7million m^3, covering 0.67 km2 or 67.6 hectares of land Controls 65% of the catchment.	Minimum of 12,000 small dams required with each having the capacity to store maximum 250m^3 flood water. Build costs approx £6m plus replacement costs every 10 - 20 yrs = £45m.		24 million Broadleafs planted 150km^2 (15,000 hectares) land required. OR 27 million Conifers planted 120km^2 (12,000 hectares) land required. River Kent catchment upstream of Kendal = 184km2	
2						
1	Kentmere Reservoir controls only 5% of catchment and would require significant rebuild costs.					
0.125	1 million trees planted after 10 yrs.					
	Kentmere Reservoir & tree planting	Kent three phase Flood Risk Managagement Scheme	Small dams instead of upstream storage	small dams instead of upstream storage and linear defences	Tree planting instead of upstream storage	Tree planting instead of upstream storage and linear defences

Keep up to date
www.thefloodhub.co.uk/kendal

Contact us
Customer service 03708 506 506 Email KendalFRMS@environment-agency.gov.uk

European Union
European Regional Development Fund

Environment Agency

CAPITA

Jacobs

VBA
VolkerStevin Boskalis Westminster ATKINS