This project is delivering:
- storage ponds to hold water
- diversion pathways to divert water
- long leaky dams to slow the flow
- tree planting to stabilise land and soak up water.
This project is designed to address the surface water flood risk in the area.

This project is delivering:
- earth bunds to hold water
- leaky dams to slow the flow
- tree planting to stabilise land and soak up water.
This project is designed to address the surface water flood risk in the area.

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.

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

Key dates
- Dec 2019: Funding approved to deliver all three phases
- Jan 2020: Phase One Kendal detailed design continues
- Autumn 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 stabilise 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 stabilise 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

Kent Catchment Flood Risk Management Scheme
Natural Flood Management (NFM) key facts

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 Autumn 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;
Natural Flood Management (NFM) in the Kent Catchment

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 m³ 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.

<table>
<thead>
<tr>
<th>Flood storage capacity (million m³)</th>
<th>Cost £millions</th>
<th>£13.3 - £14.6m</th>
<th>£76m</th>
<th>£45m</th>
<th>£90m</th>
<th>£90 - £112m</th>
<th>£180 - £225m</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>13.3 - 14.6m</td>
<td>Kendal 6km linear defences Stock Beck 2km catchment drain. Stock Beck Pumping Station.</td>
<td>13.3 - 14.6m</td>
<td>13.3 - 14.6m</td>
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<td>5</td>
<td>13.3 - 14.6m</td>
<td>Kendal 6km linear defences Stock Beck 2km catchment drain. Stock Beck Pumping Station.</td>
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<td>4</td>
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<td>3</td>
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</tbody>
</table>

Number and type of interventions required to achieve the 3 million m³ storage required or the 6 million m³ storage required in place of storage and linear defences.

<table>
<thead>
<tr>
<th>Investment required to achieve 1 in 100yr standard of protection or the equivalent of a 1% chance of flooding in any given year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentmere Reservoir &amp; tree planting</td>
</tr>
<tr>
<td>Kent three phase Flood Risk Management Scheme</td>
</tr>
<tr>
<td>Small dams instead of upstream storage</td>
</tr>
<tr>
<td>Small dams instead of upstream storage and linear defences</td>
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<tr>
<td>Tree planting instead of upstream storage and linear defences</td>
</tr>
<tr>
<td>48 million broadleaves planted 300km² (30,000 hectares) land required.</td>
</tr>
<tr>
<td>OR 54 million conifers planted 240km² (24,000 hectares) land required.</td>
</tr>
<tr>
<td>River Kent catchment upstream of Kendal = 184km²</td>
</tr>
<tr>
<td>Build costs approx £12m plus replacement costs every 10 - 20 yrs = £90m.</td>
</tr>
<tr>
<td>Build costs approx £6m plus replacement costs every 10 - 20 yrs = £45m.</td>
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Contact us
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Email KendalFRMS@environment-agency.gov.uk

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European Union
European Regional Development Fund

Environment Agency
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