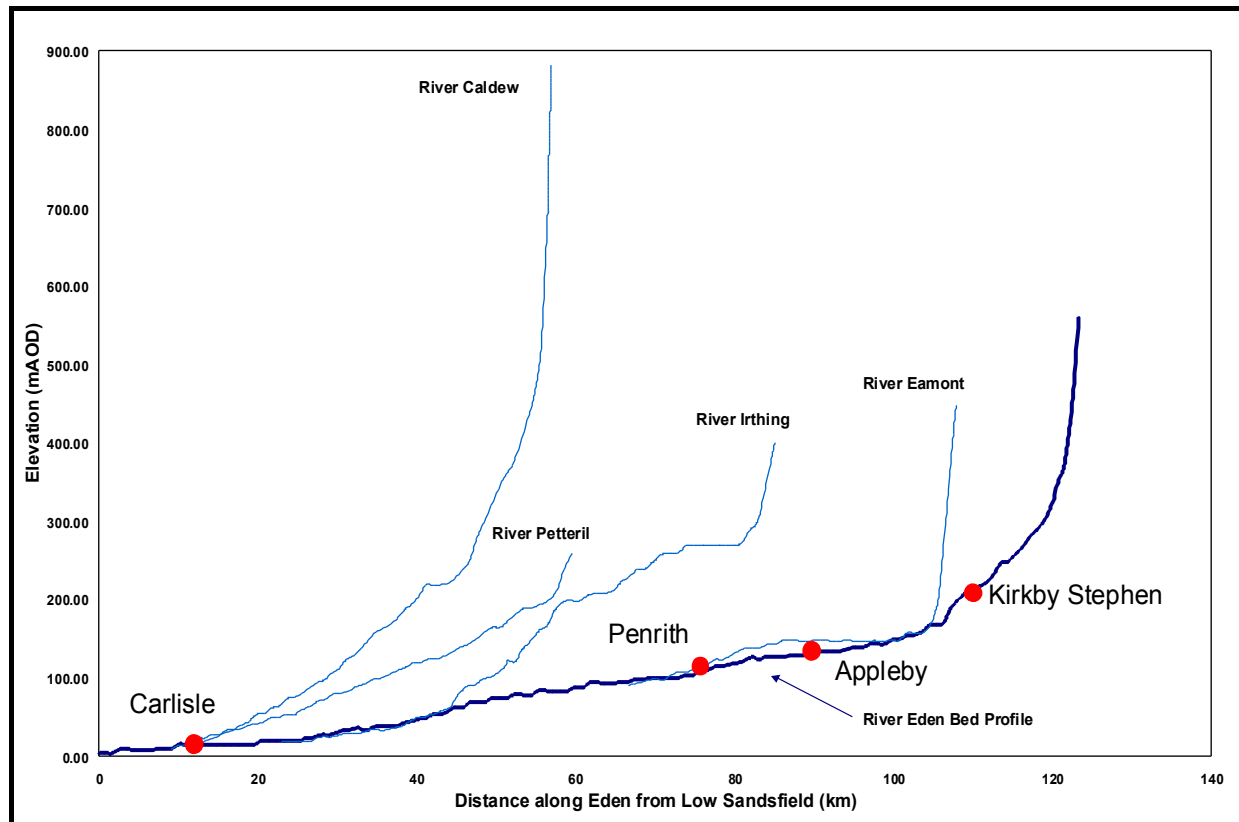


Managing Flood Risk: Carlisle Case Study

Gradient of River Eden and main tributaries



In the steep upper catchments the topography, combined with the geology, leads to fast responses to rainfall:

- In Kirkby Stephen, the River Eden will respond to rainfall in around 1.5 hours
- The time taken for rain falling on the top of Helvellyn, the highest point in the Eamont catchment, to reach Ullswater Lake is around 2 hours

In the lower catchment, with mainly lower gradients and deeper soils, the flood responses are slower.