

## Low Crosby Flood Management

### Low Crosby: introduction

1. Low Crosby is a village located about 7km north-east of Carlisle, Cumbria.

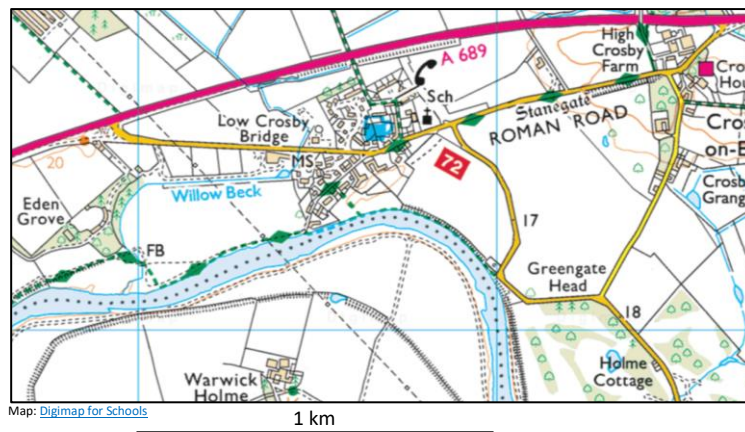


Source: [Cumbria County Council](#)

1 km

- (a) Notice that two gridlines are numbered, northing 58 and easting 44. Write the numbers for these and the other gridlines along the edges of the OS map.
- (b) Give the four-figure grid reference for Low Crosby. \_\_\_\_\_
- (c) What is the name of the river landform in grid square 4256? \_\_\_\_\_
- (d) The River Eden is flowing from east to west across the map. Use a labelled arrow to indicate this on the map.
- (e) Label Carlisle on the inset UK map in the lower right corner of the OS map.
- (f) On the inset map, locate and label your home town/city.

2. The map below zooms in on the village of Low Crosby.



(a) Using evidence from the map, suggest the height above sea level of Low Crosby.

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(b) What is the evidence that Low Crosby lies on the floodplain of the River Eden?

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(c) Locate and label the embankment protecting Warwick Holme, south of the River Eden. This is part of a flood defence measure designed to protect land from flooding.

(d) Using map evidence, explain why flooding at Low Crosby might have social and economic impacts on the local community.

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3. The table below lists peak flows during flood events at the Sheepmount gauging station, near Carlisle on the River Eden. Notice that the peak flow (discharge) is measured in cubic metres per second.

Flooding Event	Number of properties flooded	Peak Flow in River Eden at Sheepmount (m <sup>3</sup> s)
March 1968	Unknown	1200*
February 1995	Unknown	950
January 2005	>60	1516
November 2009	5	1029
December 2015	>58**	1680

[\*based on extrapolation; \*\*at Low Crosby, more nearby]

- (a) Which flood event caused the highest peak flow at Sheepmount?

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- (b) Calculate the mean (average) peak flow rate for the five flood events listed.

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- (c) The 'normal' river height at Sheepmount is 0.63m – 3.45m. On 6 December 2015, the river height was recorded as 7.65m. Calculate the height difference between the top of the 'normal' range and that of the flood.

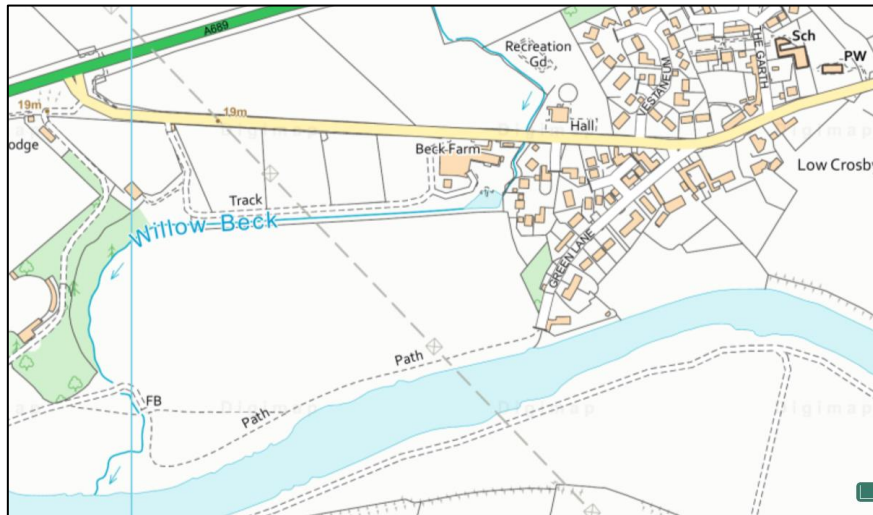
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- (d) Access live data for this gauging station at <https://check-for-flooding.service.gov.uk/station/5127> . Give the current river height and describe the trend in river height over the last few days. Use a sketch graph to support your answer.

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[Click 'View Map' to explore the status of other gauging stations along the River Eden]

4. There are several reasons why Low Crosby is prone to flooding. Use the information on Slide 7 together with your own knowledge to annotate the map below to identify why the village is at risk of flooding.



Map: Digimap for Schools

5. The photo below shows flooding resulting from Storm Desmond in 2015.



Image: Cumbria County Council

- (a) Using the OS map extract in Slide 2, state the direction that the photo is looking. \_\_\_\_\_
- (b) How successful was the embankment at Warwick Holmes in protecting the area from flooding?

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(c) Use a double-headed arrow to locate and label the River Eden's floodplain.

(d) Use circles to locate the isolated buildings affected by the flooding.