

FLASH FLOODING

Flash floods are generally associated with short bursts of intense rainfall and are subject to location, ground conditions and the capacity of drainage infrastructure. They occur when the ground cannot absorb the water quickly enough, which can lead to sewers becoming overwhelmed. Some of the causes are outlined below:

Built environment

Hard surfacing used in urban areas stops the natural process of surface water infiltrating into the ground. Paving over gardens, building car parks and housing estates reduces the capacity for the natural infiltration of surface water within our towns and cities.

Drainage

After a heavy rainfall event, drains can become inundated by large amounts of water in a short period of time and might not have the capacity to cope with such large volumes of water. Roadside gullies are designed to keep roads free from surface water but can become covered with leaves and litter, preventing water from entering sewer systems.

Ground conditions

When lawns and fields have been dry for long periods of time, the ground becomes hard and dry, and surface water runs overland contributing to flash flooding. On the other hand if the ground is saturated from previous wet weather, it may be unable to absorb any more water leading to large amounts of surface water runoff.

Layout of the land

A large area could receive the same amount of rainfall across all of it, but may only flood in one place as water will collect and drain to a common outlet - how the land lies dictates where the water will go.



Tim Evanson / Cleveland flash flood / [CC BY-SA 2.0](#)



Des Blenkinsopp / Drains Surcharging / [CC BY-SA 2.0](#)



Mike Quinn / Flooded pastures above Anton Hill Farm / [CC BY-SA 2.0](#)



Malcolm Campbell / Flash Flood / [CC BY-SA 2.0](#)



CASE STUDY: Poynton, Cheshire



On the 31st July 2019, numerous homes and businesses were affected by flash flooding in Poynton as heavy and intense rainfall hit the area, overwhelming drains which caused Poynton Brook to overtop. Homes, businesses and infrastructure were flooded and damaged by the floodwater. A major incident was declared and many homes were evacuated as nearly a month's worth of rain (~2 inches) fell in just 24 hours.

Poynton Fire Station responded to more than 20 incidents over a four hour stretch including rescuing at least 11 people from floodwater. Roads were closed, including the new £290million A555 dual carriageway, where two cars were abandoned and 800,000 litres of water had to be pumped away.