

Section 19 Investigation Report

Milton Gardens, Stanwell, Staines



SURREY
COUNTY COUNCIL

Section 19 Report – Milton Gardens, Stanwell, Staines

Summary of Flood event: (Date/time/who reported)

On 28th January 2021 the junction of Milton Gardens and Chesterton Drive was flooded partially before the flood water started to rise on the 30th January as a result of the rainfall that fell from Storm Christoph. The flooding limited access significantly to and from Milton Gardens with residents reporting that vulnerable residents in the area were unable to get help.

Residents reported the flooding to Thames Water and Spelthorne Borough Council on the morning of the 30th January. However the residents report that nothing was done and crews from Thames Water left without communication to residents about next steps. Residents received support from a local charity who provided sandbags to protect properties.

The flooding was also reported to Surrey County Council's emergency hub on 28th January however a crew did not attend until late on the 31st January to pump the water away with approximately 15 tank loads being removed from the highway. Following the pumping there have been no further reports of flooding since that weekend.

Source of flooding:

The source of flooding at Milton Gardens was likely a combination of rising groundwater and surface water flowing to low points. As the area drains to soakaways, rising groundwater is likely to have filled the storage area of the soakaway. This rising groundwater is likely to have been caused by the high levels in the main rivers nearby to this location including the River Thames. This means that the capacity to drain surface water falling on the highway was reduced. When the capacity of the soakaways and gully connections had been exceeded, no more water would be able to drain away through the gullies. Water then flowed over the surface along Chesterton Drive and collected around the junction of Milton Gardens.

Receptor of flood water:

The flooding that occurred at the end of January caused flooding to the highway on Chesterton Drive and Milton Gardens. Properties on both Chesterton Drive and Milton Gardens were flooded externally with water on front gardens and in some cases up to the front door. Two properties were also flooded internally as a result of bow waves from cars driving through flood water.

Effect of flood water: - Table of totals

Properties flooded Internally:	2 – caused by bow waves from cars driving through flood water
Properties Flooded Externally:	9
Roads Flooded?	Milton Gardens, Chesterton Drive
Other:	N/A

Cause of flooding:

High groundwater filling up soakaways on the highway. This means any surface water falling on the highway was not able to drain away. Water then flowed to the low point at the junction of Milton

Gardens and Chesterton Drive. The area is low lying compared to the surrounding land and the area around Chesterton Drive is at significant flood risk from surface water flooding with the junction of Milton Gardens and Chesterton Drive being at risk of flooding from a 1 in 30 year storm.

The area around Milton Gardens and Chesterton Drive is at risk of groundwater flooding above surface.

The underlying bedrock geology in the Staines area is the London Clay. On top of the clay there is a thin veneer of superficial river gravel deposits called the Kempton Park Gravels. Local borehole records indicate that in this area the thickness of the gravels is commonly 7m.

In general, water is unable to infiltrate into the impermeable London Clay. The gravels lying on top of the clay allow groundwater to accumulate in the spaces between the gravel particles, analogous to water being stored in a sponge.

There is a complex interaction between rainfall, surface water, local groundwater and river levels. In general, prolonged or high rainfall accumulations in the winter months result in recharge of the underlying local groundwater in the gravels. There is also a hydraulic link of the local groundwater to the River Thames. When the river levels are high then the groundwater level is similar. Over a period of prolonged winter rainfall, high river levels coupled with high groundwater levels result in surface water ponding and flooding in low lying areas as surface water cannot drain away.

Due to the proximity with the River Thames the geology in large parts of Spelthorne including Staines, has superficial River Terrace Deposits. This means that when the River Thames is high, water flows through the ground easily. When the Thames is higher than ground level, groundwater will be at the same level, meaning that lower lying land will experience groundwater coming to the surface.

Who has roles/duties/tasks related to managing the risk of flooding?

Surrey County Council's Local Highway Office has a responsibility to ensure that all highway drainage is free of obstructions and ensure soakaways are clean. There is no responsibility to upgrade capacity of soakaways or other highway drainage.

Landowners have a responsibility to protect their own property.

Recommendations

The following recommendations have been made following the investigation. The authorities who should make a decision on whether they are taken forward have also been identified:

- 1) Surveys of the highway drainage system are undertaken to both check the condition of the pipes and soakaways and to map the system onto Kaarbontech. This should also be done to establish if there is a connection into any of the piped main rivers nearby. – **Surrey County Council Highways**
- 2) Clear communication out to residents detailing the correct authorities for different elements of a flood event, including sandbags, vulnerable residents, and emergency response along with the correct phone numbers. – **Surrey County Council, Spelthorne Borough Council (Surrey Prepared)**
- 3) Welfare checks to be done for the residents to identify vulnerable residents and inform them of risk – **Spelthorne Borough Council/Surrey Fire and Rescue**

- 4) Ensure all vulnerable residents in this area are recorded on Vulnerable people database and given advice on how to sign up to similar databases for utility companies – **Spelthorne Borough Council**
- 5) Conversation with residents about household emergency plans and whether they would like to set up a Flood Action Group - **Surrey County Council/Surrey Prepared**
- 6) Residents to look into property level protection measures to protect homes from bow waves created by cars driving through flood water – **Property owners**

Annex A – Surface Water Flood Risk for Milton Gardens, Stanwell

