

Flood Investigation Report

Steeds Close, Kingsnorth, Ashford



As the Lead Local Flood Authority for Kent, Kent County Council has a duty to investigate flood incidents, as detailed within **Section 19** of the **Flood and Water Management Act 2010**.

This report outlines the mechanisms behind the flood events that occurred on 9th November 2014 and 8th January 2015 at Steeds Close, Kingsnorth and will make recommendations to reduce the likelihood of similar events in the future. Two properties were internally inundated during these flood events.

Date of Incidents:	9 th November 2014 and 8 th January 2015	Date of Investigation:	March 2015
---------------------------	--	-------------------------------	------------

Site Location:

Steeds Close, Kingsnorth, Ashford (TR 00110 38474)

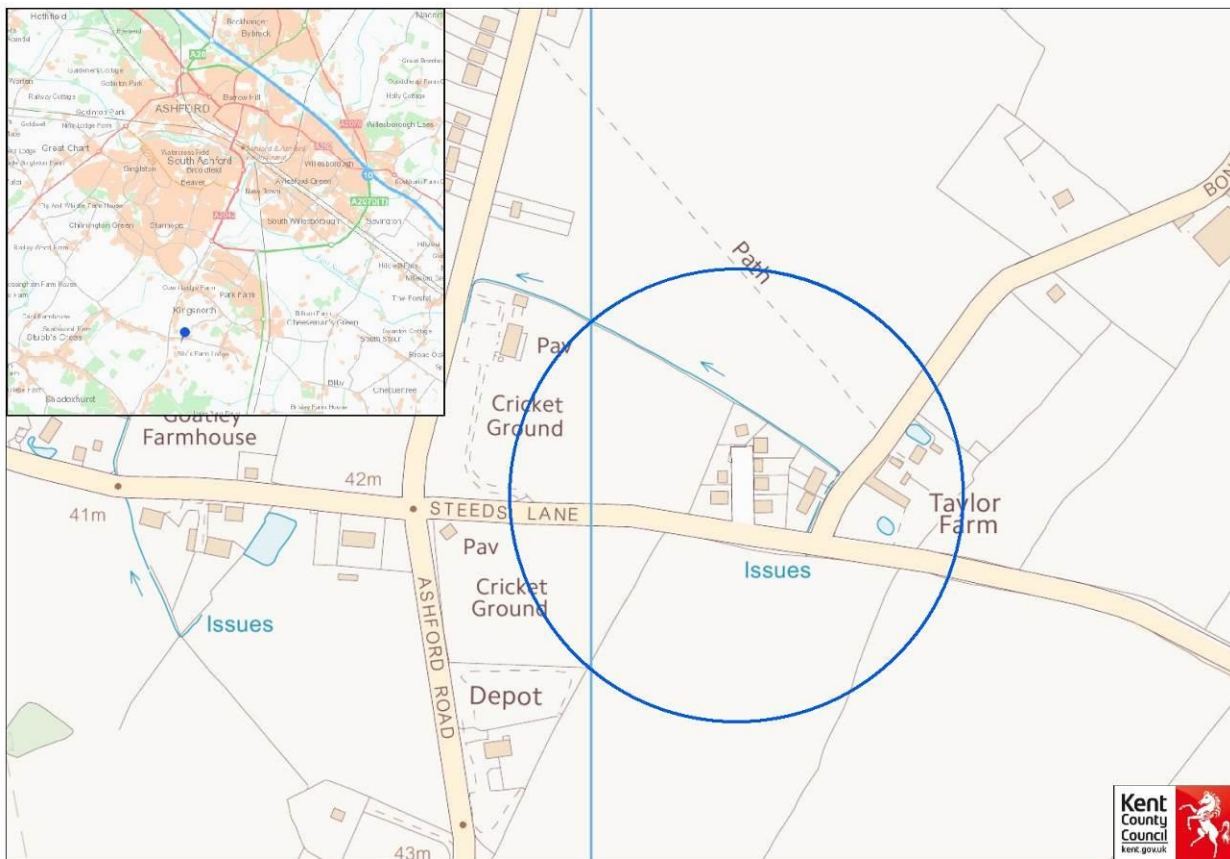


Figure 1. Location plan

Summary of extent & impact:

On the 9th November 2014 and 8th January 2015 it was reported to Kent County Council that two properties and gardens at Steeds Close, Kingsnorth had flooded. Figure 2 depicts the flooding that was experienced during the January event.

On both occasions flooding was experienced following periods of heavy rainfall. The closest gauging station (Bybrook) indicates that 33.4mm of rain fell over the 8th/9th November 2014, with 21mm falling over the 7th/8th January 2015.

Media reports of these flood events can be found from the following links:

<http://www.kentonline.co.uk/ashford/news/homes-flooded-after-heavy-rain-26670/>

<http://www.kentonline.co.uk/ashford/news/flood-misery-returns-29854/>



Figure 2. Flooding at Steeds Close on 8th January 2015 (Kentonline.co.uk)

Photographs
of flooding:



Figure 3. Ditch to the rear of 3 Bond Lane (facing north-west)



Figure 4. Junction of Bond Land and Steeds Lane (facing north)



Figure 5. Junction of Bond Lane and Steeds Lane (facing east)



Figure 6. Junction of Bond Lane and Steeds Lane. Culvert beneath Steeds Lane behind railings (facing west)

Catchment area:

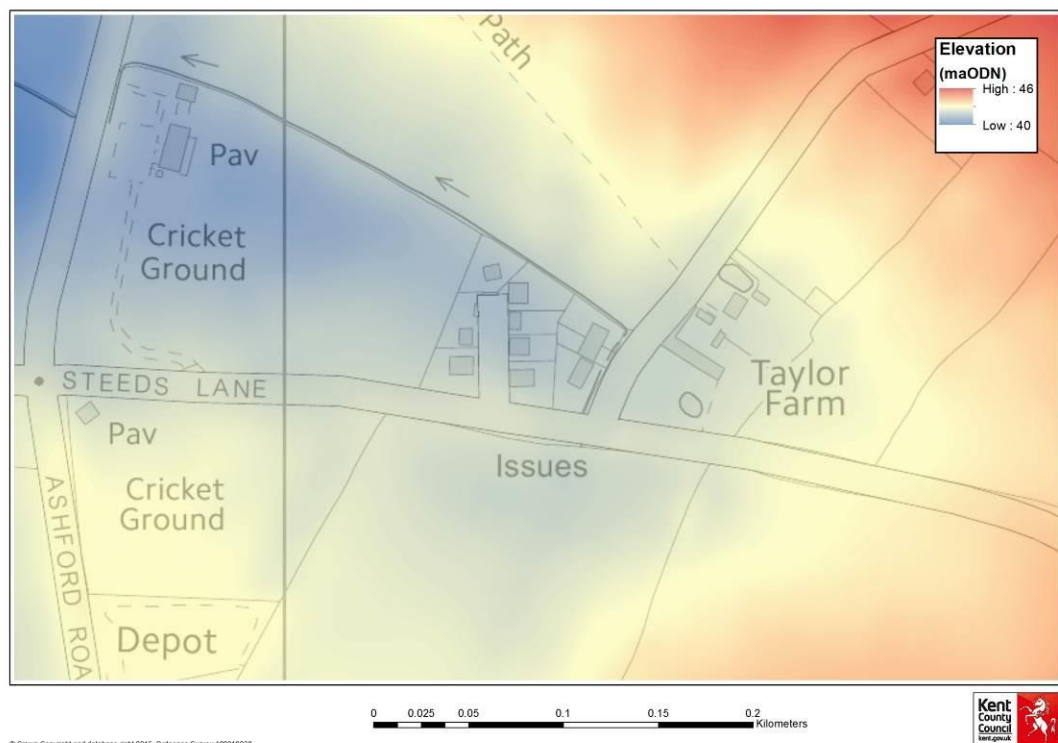


Figure 7. Topography (red indicates high ground, blue indicates lower ground).

Steads Close is situated off Steeds Lane, Kingsnorth. Bond Lane lies immediately to the east, heading north-east towards higher ground. Ashford Road is approximately 220 m to the west.

These roads are at the lowest point of a gently sloping valley of weald clay soils. There are a number of watercourses in the area, but in the vicinity of Steeds Lane and Steeds Close they are not at the lowest point.

A watercourse flows along the western side of Bond Lane in front of the properties on the lane. The watercourse then turns to the northwest and flows past numbers 3 and 4 Steeds Close and on past the cricket ground towards Ashford Road. When it meets Ashford Road, it turns sharply to the south, running adjacent to the road for a short distance before turning sharply west through a culvert beneath the highway before continuing west.

This watercourse is joined by three other watercourses. A drainage ditch on the northern side of Steeds Lane, in front of Collingwood and Mayclair joins this ditch at the western side of the Steeds Lane – Bond Lane junction.

Two culverts bring water from the ditch and groundwater that emerges on the southern side of Steeds Lane at the same point.

Another culvert Bond lane conveys water from the land at the east of the highway to the watercourse on the west.

The properties and land at risk from flooding lie below the level of these adjacent highways and the surrounding agricultural land (Figure 7).

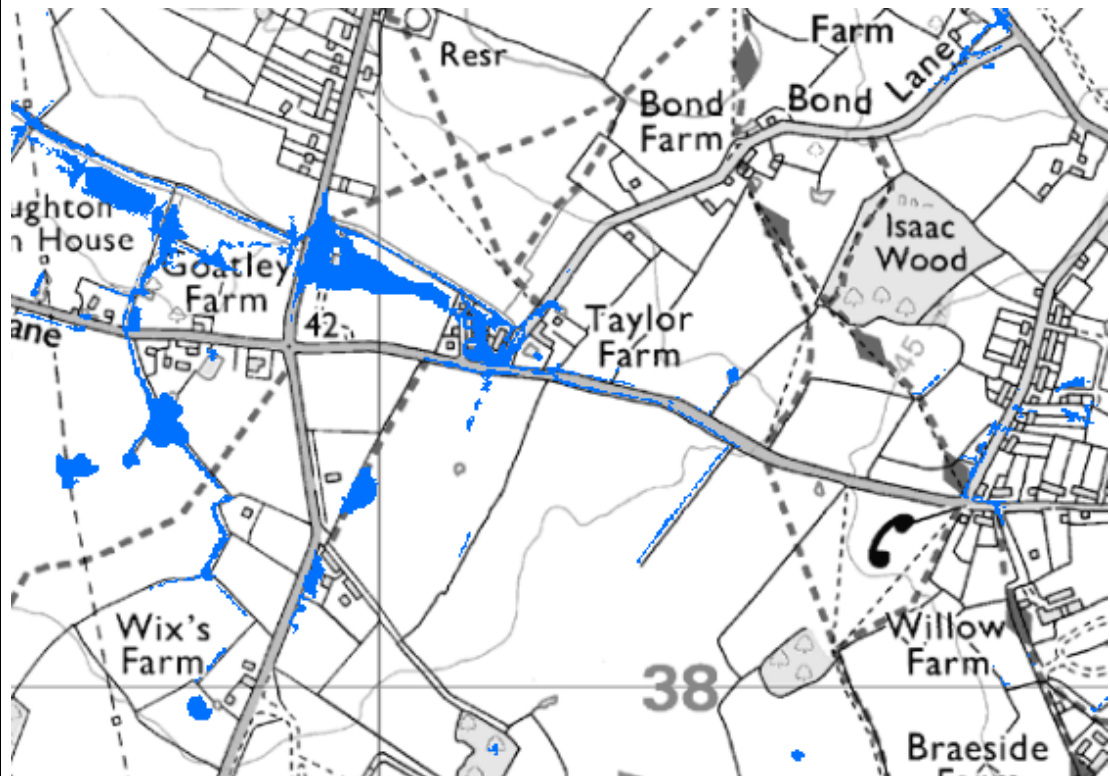


Figure 8. Updated Flood Map for Surface Water (1 in 30yr event)

Although the area is at low risk of flooding from rivers and the sea (Flood Zone 1), the extract from the Environment Agency's updated Flood Map for Surface Water (figure 8) depicts the area as being at risk from accumulation of surface water during '1 in 30yr' rainfall events (as well as during events more extreme than this). The lower land levels in this area and the difficulty in effectively conveying water away will be the key contributing factors.

Flooding causes:

The flooding that occurred on the two occasions investigated appears to have been caused by a complex interaction of several contributory factors, none of which can be identified as being the single causal factor for the flooding:

- The culvert beneath Ashford Road at the western end of the watercourse was partially obstructed by silt, although the outfall on the western end was observed to be free flowing.
- The watercourse enters a chamber adjacent to Ashford Road (within which it changes direction and enters the culvert to flow beneath the highway). This was also observed to be partially obstructed by silt, further reducing the free flow of water away from the area.
- The land levels rise slightly at the western end of the watercourse (just before it meets Ashford Road). It has been noted that there is a general build-up of silt and debris in this watercourse; this restricts the free-flow of water away from the area.
- The culvert connecting the ditches on either side of Bond Lane has been assessed and is thought to have collapsed. This is unlikely to have had a significant impact on the properties, but could cause or exacerbate highway flooding in the area.

One half of the twin-culvert beneath Steeds Lane is believed to be obstructed. Again, this is unlikely to have had a significant impact on the properties, but could cause or exacerbate highway flooding.

- The emergence of groundwater to the south of Steeds Lane indicates that the water table is likely to be close to the surface throughout the wider area, even under normal circumstances. Across the south-east of England groundwater levels were higher than might ordinarily be expected throughout 2014 owing to the

	<p>unusually wet winter of 13/14; as a result it is likely that more water than usual would have been present in the surrounding watercourses prior to the start of the identified rainfall events. The soil would have had an associated impaired ability to absorb any incident rainfall, thereby increasing the quantity of surface runoff during rainfall events.</p> <p>The gentle gradients observed in the area's watercourse network will result in low flow velocities within the system; as a result they will be prone to the build-up of silt.</p> <p>Once the watercourse was overwhelmed the water flowed onto the lowest lying land, which included some of the properties in Steeds Close. This resulted in the observed flooding.</p> <p>There are no records of flooding having affected this area prior to 2014.</p>
<p>Responsible Bodies:</p>	<p>Kent County Council is responsible for the maintenance of the road drains and any culverts running beneath the highway.</p> <p>The agricultural land to the rear of the properties is privately leased from Etchinghill Golf Club; the leaseholder would be ultimately responsible for the maintenance of the open ditch located to the rear of Steeds Lane.</p> <p>Kent County Council is responsible for the maintenance of the culverts within this ditch (where it flows beneath Steeds Lane, Bond Lane and Ashford Road).</p> <p>KCC is also the enforcement authority for ordinary watercourses in this area. KCC have permissive powers to enforce the maintenance of watercourses by riparian owners. The riparian owner of any ordinary watercourse must also seek the formal prior Consent of KCC as Lead Local Flood Authority before undertaking any work (permanent or temporary) that has the potential to affect flow within the channel.</p> <p>Southern Water Services own and are responsible for the maintenance of the foul sewers located in the vicinity of Steeds Lane. As there were no reports of contaminated flood water, the foul system is not considered to be a contributory factor.</p>
<p>Advised and agreed actions:</p>	<p>Kent County Council has agreed to clear the silt and debris from the entire length of watercourse between Bond lane and Ashford Road. Whilst the riparian owner of this watercourse is ultimately responsible for such works, KCC have agreed to undertake this work on behalf of the land owner to alleviate the drainage problems in the area. The riparian owner will be informed of their responsibilities for future maintenance.</p> <p>KCC will also clear the culverts beneath the highways and ensure they are all running freely, with repairs undertaken where necessary. The chamber where the watercourse changes direction adjacent to Ashford Road will be cleansed and repaired (if necessary). Both the culverts and chambers will be subject to inspection once every two years.</p> <p>The partially obstructed twin culvert beneath Steeds Lane will be investigated with repairs undertaken as required.</p> <p>It is important that the watercourses and culverts are kept free of silt. We recommend that residents inform KCC if they identify any issues that cause concern with the local watercourses and drainage. Any issues can be reported to KCC at:</p> <p>http://webapps.kent.gov.uk/KCC.KHSFaultsGIS.Web.Sites.Public/SelectLocationType.aspx</p> <p>They can also be reported on 03000 41 81 81.</p>
<p>Next Steps:</p>	<p>Kent County Council will circulate this flood investigation to all relevant stakeholders and publish this document online at www.kent.gov.uk.</p>