Preliminary flood risk assessment: Suffolk County Council

This addendum by Suffolk County Council (2017) updates the council's preliminary flood risk assessment report published in 2011. Read the addendum in conjunction with the preliminary assessment report.

Addendum

The preliminary flood risk assessment (PFRA) and flood risk areas (FRAs) for Suffolk County Council (SCC) were reviewed during 2017, using all relevant current flood risk data and information.

Changes to the assessment of risk since the preliminary assessment report was published in 2011 are described in the statements in this addendum.

The annexes to the preliminary assessment report have been reviewed and updated to show relevant new information since 2011.

Past flood risk

Since 2011 there have been a number of significant flood events triggering section 19 (S19) investigations or the production of Surface Water Management Plans.

Seven S19 investigations have been undertaken as a consequence of flooding events meeting the intervention criteria defined in the Local Flood Risk Management Strategy (LFRMS). The 7 investigations are published on Suffolk County Council's website, and are:

East Street and Elizabeth Court, Sudbury
Prolonged rainfall event on 28 June 2014 resulted in 14 confirmed residential properties being internally flooded.

Bury Road, Lawshall 4
On 19th September 2014 approximately 75mm (3 inches) of rain fell over an hour according to local rain gauges (unverified data). Equates to a 0.4% annual exceedance proverbially. Overloading of the pumping station, a lack of proper road drainage, poorly maintained watercourses and historical culverting of open watercourses are suspected to of contributed issues experienced.

Intense rainfall event over impermeable roads and buildings produced rapid runoff towards local depressions resulting in areas of deep surface water. Rainfall also caused excessive pressure on the local sewer network causing manhole covers to be lifted near to the pumping station.

Terry Gardens, Kesgrave
On 26th and 27th May 2014 approximately 58mm of rain fell over 9 hours in saturated ground conditions; equates to a recurrence to 2.8% annual exceedance proverbially. Five residential properties confirmed internal flooding with the public highway completely flooded for approx. 50m length to an approx. depth 450mm. Anglian Water surface water system also surcharged.

Langer Road, Felixstowe
On 5th June 2015 intense rainfall resulted in four residential properties flooding internally to a depth of 150mm. The public highway partially flooded for approx. 50m to an approx. depth

200mm. The Anglian Water surface water drainage system surcharged. Residents have shared records of flooding in this location since 2007.

Velda Close & Aldwyck Way, Lowestoft
On 24th and 25th July 2015 33 residential properties where flooded internally to a depth of approximately 300mm with further reports of flooding to outbuildings and gardens. The public highway flooded for approx. 50m to an approx. depth 450mm. The Anglian Water surface water drainage system also surcharged. Residents have provided anecdotal reports of flooding from September 2002 (internal depth of 300mm), September/October 2006 & 2013 (internal depth of 25mm).

Factors relating to flooding experience are significant amount of rainfall over a short duration (82mm over 24hrs), exceedance of the design capacity of the surface water drainage systems, blockages at several locations along Kirkley Stream, some surface water outlets are currently at bed level and therefore could not drain into Kirkley Stream and illegally dumped garden and fly-tipped waste material washed down stream contributing to blockages.

To understand and address the significant risk in Lowestoft a Local Flood Risk Management plan have been developed.

Sheerwater Close & Mount Road, Bury St. Edmunds
On 20th June 2016 deep surface water (>0.3m) within 1 property along the southern edge of Sheerwater Close. Mount Road carriageway, adjacent to these properties, also affected by deep surface water flooding. Previous flooding events occurred in June 2014 where 3 residential properties were internally affected in the same location.

An intense, localised storm event on the 20th June 2016 caused rapid runoff along Mount Road and Tassel Road. Both these roads are steeply inclined and converge towards a low point opposite Sheerwater Close. This low point is part of a natural flow path that runs in a north westerly direction through Sheerwater Close. Ultimately the development has been built in a valley where the properties have dammed the natural flow path resulting in pooling of deep surface water behind the properties. A number of measures in the highway have been installed to intercept runoff in the low point however these measures can be overwhelmed during high intensity summer storms.

Bergholt Road, Brantham
On 23rd June 2016 two residential properties flooded internally to a depth of 75- 100mm, resulting on resident moving out for 6 months; gardens and the public highway were also affected. Anecdotal evidences suggest flooding has also occurred in February 2001 & August 1986. Cause of flooding is likely to be from significant rainfall and blockages in culverted watercourses.

Leiston
On the 8th July 2012 the town experiences significant surface water flooding with approximately 25+ reported flood incidents to properties; including residential, businesses, fire station and the road network. Sequent flood events have occurred on 13th October 2013, 27th May 2014 and 6 events in 2016. This has prompted the production of a Surface Water Management Plan to better understand the pluvial risk to the town.

Newmarket
On the 3rd May 2015 six residential properties experience internal property flooding, cause of flooding is likely to be from significant rainfall. This triggered the production of a Surface Water Management Plan to provide detailed information on flood risk and potential mitigation measures.

Future flood risk
SCC have review the Risk of Flooding from Surface Water data sets to provide an indication of current predicted flood risk and potential impact of climate change. A national dataset was used because locally produced data is not available yet for all priority areas identified in the LFRMS. As national datasets do not include climate change allowance output, SCC have projected the potential number of properties at risk for the 0.5% AEP for the PFRA. The results are presented in Table 1 below, illustrating that Ipswich carries the greatest risk. This information supports the classification of Ipswich as a FRA. To improve SCC understanding of climate change in priority areas, local modelling updates will assess the impact of climate change.

Town	3.33% AEP	1% AEP	0.1% AEP	0.5% AEP
Ipswich	99	275	1838	424
Lowestoft	23	111	772	168
Newmarket	55	87	468	128
Sudbury Inc. Grt Cornard	30	67	306	85
Haverhill	23	67	433	100
Bury St Edmunds	11	50	309	70
Needham Market	21	41	321	72
Felixstowe	3	39	164	41
Woodbridge excluding Melton	2	37	188	43
Stowmarket	9	25	209	44
Hadleigh	6	19	136	30
Brandon	2	6	88	16

Flood risk areas (FRAs)
The following FRA has been identified for the purposes of the Flood Risk Regulations (2009) second planning cycle:

- Ipswich

Other changes
None applicable.

Suffolk County Council
December 2017