

Lead Local Flood Authority
Section 19 (Flood and Water Management Act 2010)
Flood Investigation Report

Report Title:

Sudbury Rd (A134) Sicklesmere and
 Hambrook Close, Stanningfield Rd, Great Whelnetham

Report Reference(s):

FW2020-0949	FW2020-0939
FW2020-0951	

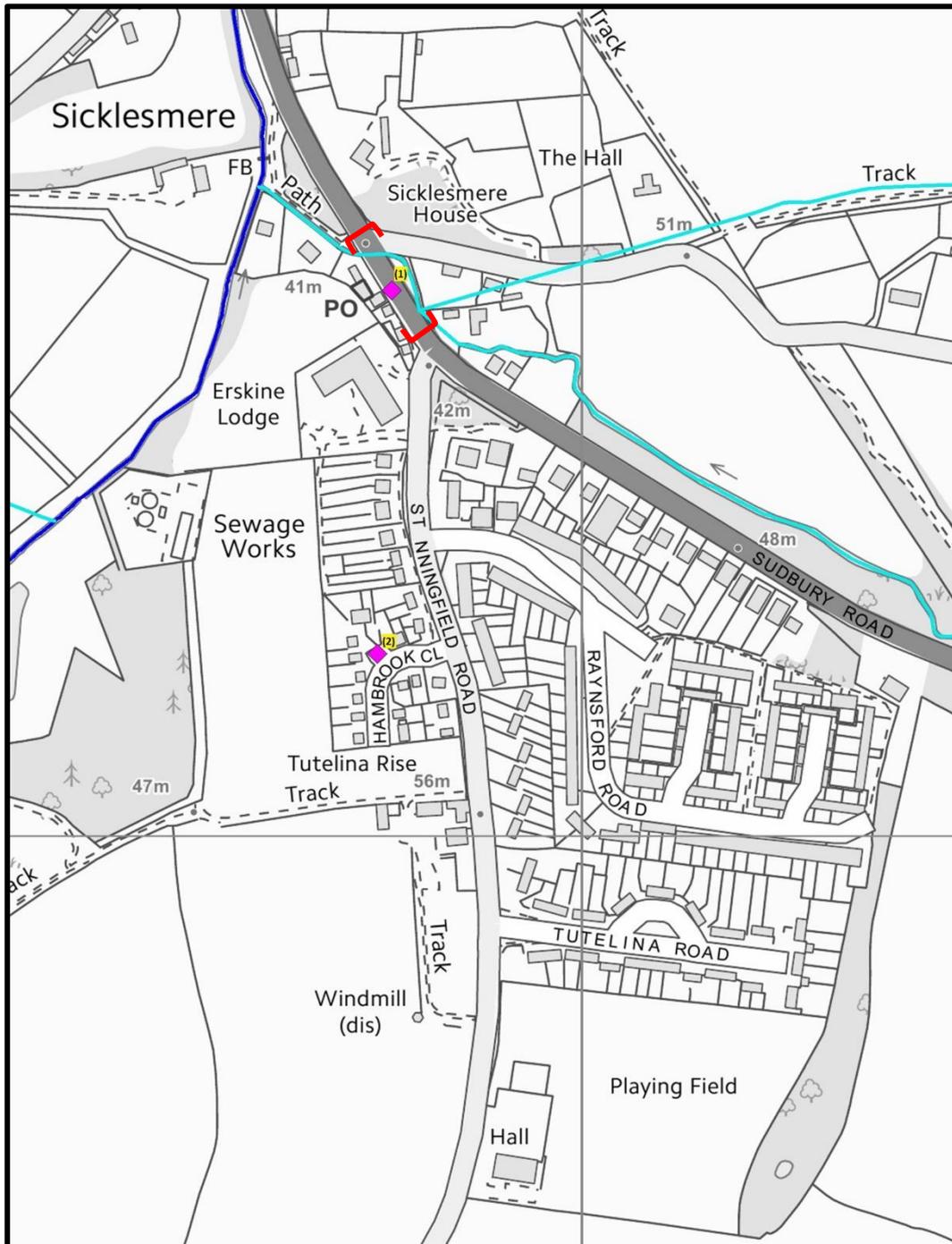
	Name	Date
Lead Officer:	Steven Halls	
Created by:	Steven Halls	01/07/2020
Checked by:	Simon Curl	28/07/2020
RMA Review:	SCC / AW	27/08/2020
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- 1.0** Suffolk County Council as a Lead Local Flood Authority (LLFA) has determined that in accordance with criteria, it considered it necessary or appropriate to carry out an investigation into this flood event in accordance with Section 19 (1) of the Flood and Water Management Act 2010, and in accordance with Section 19 (2) of the Flood and Water Management Act 2010, to publish the results and notify the relevant risk management authorities (RMAs).
- 2.0 Reference/s:**
- 2.1 Location(s):** Hambrook Close, Great Whelnetham and Sudbury Rd (A134), Sicklesmere, Suffolk
- 2.2 Flood Event Date:** 17th June 2020 and 16th Aug 2020
- 2.3 Reported to SCC Date:** 17th June 2020 and 17th Aug 2020
- 2.4 Investigation Commencement Date:** 18th June 2020
- 2.5 Criteria for investigation:**

Criteria for an investigation (as per Appendix D of the Suffolk Flood Risk Management Strategy):	✓/X
There was a risk to life as a result of flooding?	x
Internal flooding of one property (domestic or business) has been experienced on more than one occasion?	✓
Internal flooding of five properties has been experienced during one single flood incident	✓
Where a major transport route was closed for more than 10 hours as a result of flooding	x
Critical infrastructure was affected by flooding	x
There is ambiguity surrounding the source or responsibility of a flood incident	x

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2.6 OS Grid Reference: TL 87850 60135 & TL 87860 60404

2.7 Extent of flooding: (1) Surface water (0.1<x>0.4m) within 3 properties and carriageway (A134) opposite to these properties, also affected by extensive deep surface water flooding. (2) Surface water (<0.3m) within 1 property – localised ponding in highway.

2.8 Effect of flooding: Internal and external flooding to properties.

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2.9 History: Previous flooding event occurred in April 2019 but on several occasions the roads have flooded to varying degrees of depth.

2.10 Flooding Source: An intense, localised storm event on the 17th June and 16th August 2020 caused rapid runoff along Stanningfield Rd and surrounding areas. **(1)** A combination of fast runoff from Stanningfield Rd converges with runoff from Sudbury Rd (A134) and accumulates in a low point extending as far as Little Whelnetham Road (extent denoted by the red markers on map). This low spot is adjacent to a watercourse (Flood zone 3), where property defences obstruct the natural flow path towards the river resulting in pooling of deep surface water.

Several drainage measures in the highway and roadside ditches have been installed to intercept runoff over this urban catchment. However, these measures can be overwhelmed during high intensity summer storms.

(2) Hambrook Close converges to a low point in its NW corner. Several drainage measures in the highway have been installed to intercept runoff over this urban catchment. However, these measures can be overwhelmed during high intensity summer storms causing localised ponding in low point. Exceedance routes head North towards properties affected.

2.11 Causes:

Local rain gauges (Rushbrooke) recorded an intense rainfall event of 16mm over a 15 min duration in June. This storm has a return period of once every 12 years (8.3% AEP in any given year). Second event on the 16th Aug recorded 21mm in 60mins which equates to a 10yr storm (10% AEP in any year) (*return periods based on data collected from Environment Agency rain gauges and FEH13 Depth Duration Frequency curves).

Post Office and A134

- Large Undrained Catchment - Stanningfield Rd and A134 have a combined catchment area of approx. 5,200m² from high point (Community Centre, shown as 'Hall' on the map) to low point (A134/Little Whelnetham Rd). 80% of this road catchment (4000m²) is effectively undrained and steeply inclined promoting fast runoff towards the natural low point. The only major highway drainage system starts at the bottom end of Stanningfield Rd. Overall 600m of Stanningfield Rd is largely undrained likely overloading what road drainage does exist or missing it altogether due to high flow velocities.
- Multiple new developments have been constructed and measures to prevent runoff onto the highways are provided in places but overall is limited.
- SCC Highways carried out initial surveys of existing drainage systems serving this catchment in June/July 2020. There was evidence of blockages within the

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road drainage, most notably the penultimate chamber on the A134/Stanningfield Rd junction before the outfall.

- A few roadside ditches exist at the top of the catchment (near Community Centre). Again, these are severely choked and silted. They have no obvious outfall so are assumed to be holding ditches.
- Obstruction of the main overland flow path to the river due to development and poor positioning of housing in the low spot. No overland routes for surface water to drop into tributary of the R. Lark.
- No road closures – cars forced water out of highway when in flood.

Hambrook Close

- Again SCC Highways surveyed the drainage infrastructure in July 2020 – CCTV footage identified that the drainage system is blocked due to heavy root intrusion where the system meets Stanningfield Rd. To date SCC Highways have not been able to identify a positive outfall.
- Residents provided video footage of two gullies in the flooded area bubbling out, this would align with initial surveys that the fall across this system is particularly shallow meaning these gullies were flooded out due to water backing up from the blockage downstream. Consequently these gullies are inherently at high risk of surcharging.
- As water escapes from these gullies, the houses lie within the natural exceedance route to the North West. Their drive elevations and alleyways were obstructions to the escape routes for water exacerbated the issue.

2.12 Additional Information:

- Reports from local residents also identified that Anglian Waters foul network also burst several of its chambers in Stanningfield Rd and is a known historic problem. Chambers reported as flooding were at the foot of Stanningfield Rd (ID 8203) in a private access and rear gardens (ID 9202). This likely added to the internal flooding experienced downhill. As the event was less than 1:20yr event this shall be investigated further by Anglian Water and added to the Flood Register where necessary.

3.0 Risk Management Authority with Relevant Flood Risk Function

- Anglian Water: Surface water drainage maintenance, regulator & asset owner
- Suffolk County Council: Public highway maintenance, land & asset owner
- Suffolk County Council: Lead Local Flood Authority

4.0 Recommendations:

- Homeowner(s) to add additional flood resilience measures to their properties i.e. property level resilience (PLR) and introduce safe exceedance routes

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through their properties towards watercourses or fields. Suffolk County Council may be able to support the funding and implementation of this.

- SCC Highways to further investigate existing highway drainage in the area, especially in Hambrook Close as this system is failing. Subsequently return the system to a serviceable manner in the short term.
- SCC Highways where necessary to make improvements to capacity of their systems. Given the initial findings and poor state of Stanningfield Rd drainage, a retrofit attenuation system may be required in multiple locations or even taking some of the system offline completely using a new set of soakaways (if ground conditions allow). Position and size of gully lids within Hambrook Close and Stanningfield Rd to be upgraded as well.
- SCC Highways / SCC Floods to investigate additional options for dispersing surface water more evenly across the upper catchment. Potential options include: -
 - Install soakaways / holding ditches / where roadside verges exist with adequately sized gullies grates (pending ground conditions).
 - Use open ditches along with grips or offlets cut into verge – function as a soakaway where ground conditions allow.
 - Install new piped system in Stanningfield Rd towards A134 watercourse using sustainable drainage principles.
- A134/Little Whelnetham Rd low spot could be improved by adding overland escape routes (grips) into roadside verges adjacent to ordinary watercourse, this will reduce depths of flooding here. However, grips must be located carefully not to decrease channels bank height and fluvial risk (alternatively a piped grip and flap valve could be used).
- SCC Highways/Local Planning Authority - to check permissions on new developments regarding prevention of runoff onto highway.
- Anglian Water to assess capacity of the foul sewerage system and Sewage Treatment Works (STW). Investigate improvements on chambers currently surcharging.

For future development advise Local Planning Authority accordingly on mitigation measures to reduce pressures on system and STW to make sure it doesn't get worse.

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4.1 Recommended Actions:

Action	Responsible Authority	Timescale for response	Latest Progress Update for Actions
Investigate and cleanse existing road drainage in effected area. Return to serviceable condition.	SCC Highways	3 months	
Investigate improvements to road drainage system in Stanningfield Road and Hambrook Close. Likewise, A134 low spot. Investigate use of available roadside green space for disposal of surface water as quick win.	SCC Highways/Floods	6 months	
Investigate and maintain local watercourses/ditches at top end of Stanningfield Rd	SCC Floods/Private Landowners	3 months	
Advise affected residents of their rights to protect their property. Advise residents of Property Level Resilience measures and funding opportunities.	SCC Floods	Completed	Property owner to clear ditch and landscape garden to allow safe escape route for water
Anglian Water to comment on foul sewer issues and required actions to reduce flooding if necessary. Assess availability for in year partnership funding.	AW	3 months	