

Flood Investigation Report

Upon learning of the following flood event, Suffolk County Council determined it was necessary to carry out an investigation under Section 19 (1) of the Flood and Water Management Act in order to determine which risk management authorities had relevant flood risk management functions and whether each of those risk management authorities has exercised or is proposing to exercise those functions in response to the flood. In accordance with Section 19 (2) of the Flood and Water Management Act this report details the results of the investigation.

Reference/s: FW2015-0019 to 0025, FW2015-0028 to 0053

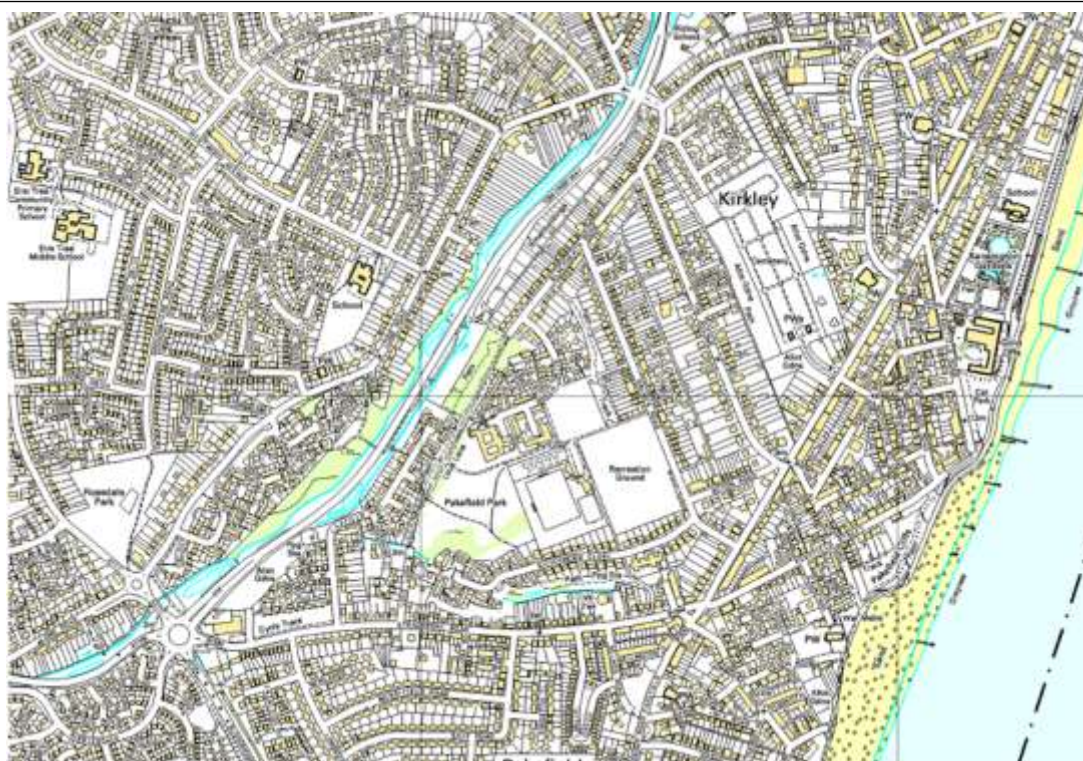
Location: Velda Close & Aldwyck Way, Lowestoft

Flood Event Date: 24 & 25 July 2015

Reported to SCC Date: 27 July 2015

Investigation Commencement Date: 27 July 2015

Reason for investigation: Five or more properties internally flooded (as defined in the Suffolk Flood Risk Management Strategy)



Investigation area map

Flood Investigation Report

OS Grid Reference: 652,498 290,639 & 652,567 290,685

Extent of flooding: We have received reports that 33 domestic properties flooded internally affecting main living areas. Further reports of flooding to outbuildings and gardens were received. The public highway flooded for approx. 50m to an approx. depth 450mm. The Anglian Water surface water drainage system surcharged.

Effect of flooding: Properties internally flooded to a depth of 300mm and the public highway flooded to 450mm

History: Residents have provided reports of flooding from September 2002 (internal depth of 300mm), September/October 2006 & 2013 (internal depth of 25mm)

Flooding Source: The surface water drainage system, including Kirkley Stream, highway drainage and the public sewer were exceeded.

Causes:

- Significant amount of rainfall over a short duration (82mm over 24hrs)
- Rainfall exceeded the design capacity of the surface water drainage systems - both SCC Highway drainage & Anglian Water surface water systems
- Blockages at several locations along Kirkley Stream associated with structures. Debris and excessive vegetation within channel contributing to blockages.
- Some surface water outlets are currently at bed level and therefore could not drain into Kirkley Stream,
- Illegally dumped garden and fly-tipped waste material washed down stream contributing to blockages.

Additional Information:

- The flooded properties are located in existing, mapped pluvial and fluvial flood risk areas.
- Some properties (owned by Cotman Housing Association) had property level mitigation measures fitted , however these failed to prevent water entering the properties.
- Aldwyck Way has an audible early warning system owned by Cotman Housing Association, but this failed to activate.
- We have no evidence of the Highways attenuation basins overtopping.
- We have no evidence of the flood storage area failed to take excess water from Kirkley Stream during the event.
- The Anglian Water pumps (three screw pumps) into Lake Lothing were operational and working within capacity.

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- As part of the Lowestoft Flood Risk Management Project (LFRMP), a full topographical survey of the Kirkley Stream was commissioned. This will enable an evaluation of the surface water system and its design capacity.
- Anglian Water and Suffolk County Council Highways have provided the investigation with asset and maintenance information.

Risk Management Authority with Relevant Flood Risk Function

Functions:

- Anglian Water (Surface water drainage maintenance & asset owner)
- Suffolk County Council (Public highway maintenance, land & asset owner)
- Waveney District Council (Planning Authority)

Recommendations:

1. Maintenance procedures and responsibilities for the whole of Kirkley Stream and its drainage assets to be reviewed and implemented linked to the wider Lowestoft Flood Risk Management Project.
2. Review access arrangements for inspection and maintenance.
3. Undertake a full topographical survey of Kirkley Stream in the locality in relation to property thresholds, highway attenuation areas, flood compensation area to inform the hydrological model.
4. Using this data, Anglian Water & Suffolk County Council surface water drainage system designs to be reviewed for Tom Crisp Way, Velda Close and Aldwyck Way to establish capacity.
5. Anglian Water trash screen to be reviewed and redesigned if necessary, its suitability for a telemetry monitoring system should also be assessed.
6. Flood mitigation, resilience and recovery measures to be considered for all affected properties.
7. Suffolk Joint Emergency Planning Unit will support volunteer Community Emergency Planning (CEP) Groups and the development of their Community Emergency Plans.
8. Consideration to be given to the creation of some means to limit any new discharges into the Kirkley Stream, thereby reducing the potential impacts of future development. Suffolk County Council, Waveney District Council (as planning authority), Anglian Water and the Environment Agency to consider this proposal and make recommendation to Suffolk Flood Risk Management Partnership.

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Recommended Actions:

Action	Responsible Authority	Timescale for response
Commission a full topographical survey of the Kirkley Stream and receive a report.	Anglian Water & Suffolk County Council	November 2015
Suffolk County Council & Anglian Water to confirm and undertake any additional works identified using the information from the topographical survey.	Suffolk County Council & Anglian Water	February 2016
Review ongoing maintenance procedures and responsibilities	Suffolk County Council & Anglian Water	February 2016
Review access arrangements for inspection and maintenance.	Suffolk County Council Anglian Water	February 2016
Suffolk County Council Highways to evaluate and issue a report of the highway surface water drainage system and its design capacity (Velda Close, Aldwyck Way & Tom Crisp Way)	Suffolk County Council Highways	February 2016
Anglian Water to review the trash screen design and consider suitability for a telemetry system	Anglian Water	January 2016
To consider options to limit any new discharges into Kirkley Stream related to development	SCC, AW, WDC, EA (Suffolk Flood Risk Management Partnership)	April 2016

	Name	Date
Prepared by:	Jason Skilton	25th September 2015
Checked by:	Matt Hullis	16 th October 2015
RMA Review	Anglian Water, Waveney District Council & Suffolk County Council	16 th October 2015
Approved by:	Sue Roper	
Published Date	30 th November 2015	

Kirkley Stream Flood Report - October 2015

1. Background

In December 2013, almost 200 homes and business were flooded in Lowestoft as a result of a tidal surge. This prompted the start of a Lowestoft-wide project to deliver ways to reduce the risks from all forms of flooding. The Lowestoft Flood Risk Management Project (LFRMP) is jointly led by Suffolk County and Waveney District Councils in partnership with the Environment Agency, Anglian Water, Associated British Ports and other key partners. The project has identified some £25 million funding to deliver flood risk management measures – with completion of this complex and wide-ranging project expected by 2020/1.

It is clearly recognised that whilst tidal flooding is the biggest threat to the town, there are areas at risk from river and surface water flooding also. Recently completed computer modelling identified a number of locations along the Kirkley Stream as at risk of river and surface water flooding in Lowestoft. Maps 1a and 1b shows areas at risk of river and surface water flooding along the Stream. This data can also be view on www.gov.uk/prepare-for-a-flood .

As a result the project is identifying options that would reduce the risks, as well as assessing costs and technical feasibility. Other areas across the town are being studied. Public consultation on the project strategy and the options proposed will take place December 2015/January 2016.

Heavy rainfall on 24 July 2015 clearly demonstrated the modelled risks for the lower part of the Kirkley Stream, sadly resulting in over thirty homes being flooded. As a result of this, Suffolk County Council was required, (under Section 19 of the Flood & Water Management Act), to undertake an investigation into this specific event. A Section 19 report is carried out where more than five adjacent properties are flooded internally (as defined in the Suffolk Local Flood Risk Management Strategy – see www.greensuffolk.org/flooding) and thus only applies to the Aldwyck Way/Velda Close area. A draft version of the Section 19 report is appended. Once this report is finalised the Recommend Actions can be taken forward by the relevant responsible authority, the majority of which will fall within the wider Lowestoft Flood Risk Management Project.

This paper provides more detail than the draft Section 19 Report and covers the whole of the Kirkley Stream (or Brook as it is sometimes known) from Carlton Colville to its outfall into Lake Lothing at Kirkley Ham.

2. Flooding in July 2015



On the night of 24/25 July 2015, 82mm rainfall fell – the equivalent of twice the July average rainfall. This amount of rainfall is regarded as having a 2.5% chance of happening in any one year (also described as a 1 in 40 year event) so is unusual. This heavy rainfall appeared to overwhelm the stream and local drainage systems resulting in flooding of 33 homes in Aldwyck Way and Velda Close, affecting main living areas to a depth of some 300 - 500mm. Further reports of garages and gardens flooded were also received. About 50m of public highway in this locality was flooded to an approximate depth of 450mm.

In Carlton Colville there was a report of one home and numerous roads and gardens affected by flooding, including foul sewage. Roads were reportedly flooded to a depth of about 300mm. Maps 1a and 1b identify flooding incidents reported to Suffolk County Council and its partners at the time.

Subsequently we have learned of a number of historic flooding incidents, suggesting the whole area has had similar rainfall events in past years, and the presence of some form of flood protection measures and a warning alarm, fitted to a number of properties in Aldwyck Way, indicates that the area is prone to flooding from time to time. It is regrettable that these flood protection measures did not appear to function adequately on the night in July. Previously, a storm water attenuation tank had been fitted in the area to reduce flooding from the drainage systems. Climate change and increasing development is likely to increase the risk of more frequent flooding of this type in future.

As soon as flooding was reported Waveney District Council mobilised to assist flooded residents in the following days, including working closely with Cotman Housing Association to re-home residents and clean the streets. Anglian Water was on the scene early on 25 July to clear the stream of blockages caused by a build-up of debris (natural and fly-tipped material). Anglian Water and Suffolk County Council have since been checking and clearing their drainage systems in Carlton Colville to reduce further risks to the affected resident in Carlton Colville.

3. Why did the flooding occur and who's doing what?

The volume of rainfall in a short period of time appeared to overwhelm the capacity of the drainage systems at certain locations – both Anglian Water's sewers and Suffolk County Council's highway drains. Soon after the flooding the highways teams checked its systems and found them to be functioning satisfactorily. Highways systems are cleansed every nine months – the previous time being in December 2014 (Aldwyck Way area) and January 2015 (Carlton Colville area). The area that drains into the Kirkley Stream is large and increasingly built up, with most surface and highway water eventually ending up in the stream. As development occurs the associated drainage systems have been designed to cope with certain levels of rainfall. Recent events suggest that these systems need to be re-examined in order to determine whether there is adequate capacity. When the stream filled with water the drainage systems were unable to fully discharge and water backed up the system overflowing into roads and gardens. Some drainage outfalls also seem to be close to the bed level of the stream and did not drain out satisfactorily. A survey is currently being undertaken to understand bed levels in the stream.

3.1 Bloodmoor Roundabout to Lake Lothing (the area covered by the draft S19 report)

The Kirkley Stream drains out into Lake Lothing. When the tide is in water is unable to drain out under gravity. Anglian Water has a pumping station at Kirkley Ham which is used to lift water into Lake Lothing. Anglian Water inspected this pump on the night of the flooding and confirmed it was working as it should be and well within its capacity.

The Stream was partly blocked in places by debris washed down and catching on grilles and areas of excessive vegetation. Coupled with the amount of water flowing into the stream, this caused water to overtop the banks and directly flood into the lower areas around, eventually getting into homes and gardens. Some of the debris was natural, but a significant amount of illegally dumped garden and fly-tipped waste contributed to the problem (see photo right). Since 2002 Anglian Water has been carrying out monthly maintenance visits to Kirkley Stream to ensure all key screens along the length of the stream were kept clear of debris. There were occasions when more extensive work was required to remove trees, garden waste and various other types of materials that were dumped into stream – as in this instance.





There is a flood storage area between the stream and Tom Crisp Way – shown on Map 2a. This was designed to be a natural feature and was planted up with reeds after construction to enhance the natural environment and not to need any regular maintenance. We have no evidence to suggest this feature failed to work as a storage area on the night of 25/26 July in spite of a partial blockage by vegetation of the six large pipes between the stream and this flood storage area (see photo left). The blockages have subsequently been cleared and the wider LFRMP will investigate whether increasing the capacity in this storage area could be a mechanism for further reducing flood risk.

Piped inlet into the flood storage area (after clearance)

The channel from Bloodmoor Roundabout to Kirkley Ham Park is the responsibility of Anglian Water and all the surrounding land belongs to Suffolk County Council. Together they are responsible for ensuring access to the stream for the purposes of inspection and for ensuring the channel is flowing freely. There is a need to review the access and inspection points.

There are a number of grilles/culverts along and draining into the stream (also shown on Maps 2a/b). Suffolk County Council Highways inspect its assets regularly for structural integrity and Anglian Water ensures that blockages along the channel are cleared. After the 24 July flooding Anglian Water and Suffolk County Council recognised that there was excessive vegetation in the area and, working together, cleared access routes into the stream and removed bulrushes and other growth from the channel bed.



Area next to Aldwyck Way before (left) and after (right) channel clearance

Currently a survey is being undertaken to inform the hydraulic model which will ascertain whether the bed is silted up to an extent that is increasing flood risk and whether additional vegetation clearance would further reduce flood risk. This is due for completion early November. The result will determine if works are required in which case they will be undertaken as quickly as possible within the constraints of funding, health and safety and UK ecological law – overseen by the LFRMP.

It is worth noting that the area between the Kirkley Stream and Tom Crisp Way was designed to be a 'green corridor' at the suggestion of residents and as a condition of the planning consent when the new road was put in. It was designed to be left natural. It is a valuable nature area rich in flora and fauna and the stream itself hosts several protected species. For this reason any vegetation management that is deemed necessary will need to be undertaken sensitively and at the right time of year. An ecological survey has already been completed to provide guidance on how to undertake such work.

Alongside Tom Crisp Way are three drainage basins/ponds, the responsibility of Suffolk County Council Highways – see Map 2a. These are solely for the collection of water draining off the road and were designed to incorporate some vegetation as another ecological feature. There is no evidence that water flowed out of these ponds during the 24/25 July event and they are not deemed to be a contributing factor to the flooding.

3.2 Carlton Colville area

The flooding in the Carlton Colville area was predominantly on the roads as a result of the highway drains being unable to discharge into the stream. Suffolk County Council highways has since cleared local gullies and jetted a culverted section of the Kirkley Stream from Bell Vue, The Street to No.73 The Street, to ensure the system is running freely. It has also agreed to postpone the installation of a zebra crossing nearby until the associated drainage issues have been fully considered.

As part of the wider LFRMP, it is recognised that this section of the stream requires some vegetation clearance and the Environment Agency had planned this work for late autumn 2015. The Partnership sent out a note to the Town Council in August detailing the works planned. Further investigations have suggested that beyond this routine clearance there may need to be some additional work to assist flows and enable drains to discharge more easily. This may involve the removal of a large tree in the channel. These suggestions are being considered for implementation as part of the LFRMP. The Environment Agency is responsible for this section of the Stream that is designated as ‘main river’ – see Map 2b. This means it has powers to undertake works and to enforce other riparian owners to do work deemed necessary to prevent flood risk. (For details of riparian owners’ responsibilities please see <https://www.gov.uk/government/publications/riverside-ownership-rights-and-responsibilities>). However, these are permissive powers and it takes a risk-based approach, so will not undertake works if the costs greatly outweigh public benefits.

4. Next steps and timetable

The draft Section 19 report makes a number of recommendations in relation to the area between Bloodmoor Roundabout and Kirkley Ham and included below are these (with added explanations) and recommendations for the Carlton Colville area.

1. Maintenance procedures and responsibilities for the whole of Kirkley Stream to be reviewed. Environment Agency, Anglian Water Suffolk County and Waveney District Council’s to discuss and report by end February 2016. This will include reviewing access arrangements for inspection and maintenance. Any short term requirements will be implemented as soon as possible, with other activities linked to the wider Lowestoft Flood Risk Management Project (LFRMP).
2. A full topographical survey of Kirkley Stream (bed and bank) in relation to property thresholds, highway attenuation areas, flood storage area etc is currently underway – due to be completed in November. This will help inform actions needed both in the short and longer term. We intend to provide more details by early next year.
3. Anglian Water and Suffolk County Council drainage system designs to be reviewed. Increasing the capacity of these systems is likely to be costly and alternative ways of making space for flood water - such as additional or large flood storage areas - may prove more suitable options. This will be considered as part of the LFRMP as a longer term action.
4. Anglian Water’s trash screen, which catches debris as it flows down the stream, may need to be redesigned and its suitability for a telemetry monitoring system assessed. This would give a warning when blockages are occurring allowing more rapid removal of debris, reducing the chances of flooding caused by blockages within the stream. Anglian Water will report on this early in 2016.

5. Flood resilience measures to be considered for all properties at significant flood risk. This will be a matter for the home owners and Housing Association to progress.
6. Flood volunteers to be trained and appointed to aid vulnerable residents in the event of future flooding emergencies. Suffolk Joint Emergency Planning Unit will support volunteer Community Emergency Planning (CEP) Groups and the development of their Community Emergency Plans'. The volunteers could also be trained to provide advice to residents about actions that may contribute towards flooding.
7. Consideration to be given to the creation of some means to limit any new discharges into the Kirkley Stream, thereby reducing the potential impacts of future development. Suffolk County Council, Waveney District Council (as planning authority), Anglian Water and the Environment Agency to consider this proposal and make recommendation to the Suffolk Flood Risk Management Partnership in spring 2016.

We do not currently have all the answers about what measures would help to reduce flood risk, or precise details about when anything required can be actioned. This report should thus be regarded as an interim update with an expectation that we will keep residents informed as progress is made. There will also be public consultation as the Lowestoft Flood Risk Management Project progresses so that affected residents and interested parties can shape longer-term options for flood risk management as they are taken forward.

Please let us have any further evidence you feel would assist us further by contacting any authority listed below.

Helpful contacts:

Anglian Water: 03457 145 145 (24-hour, 7 days a week)

Environment Agency Flood Line: 0345 988 188 (24-hour)

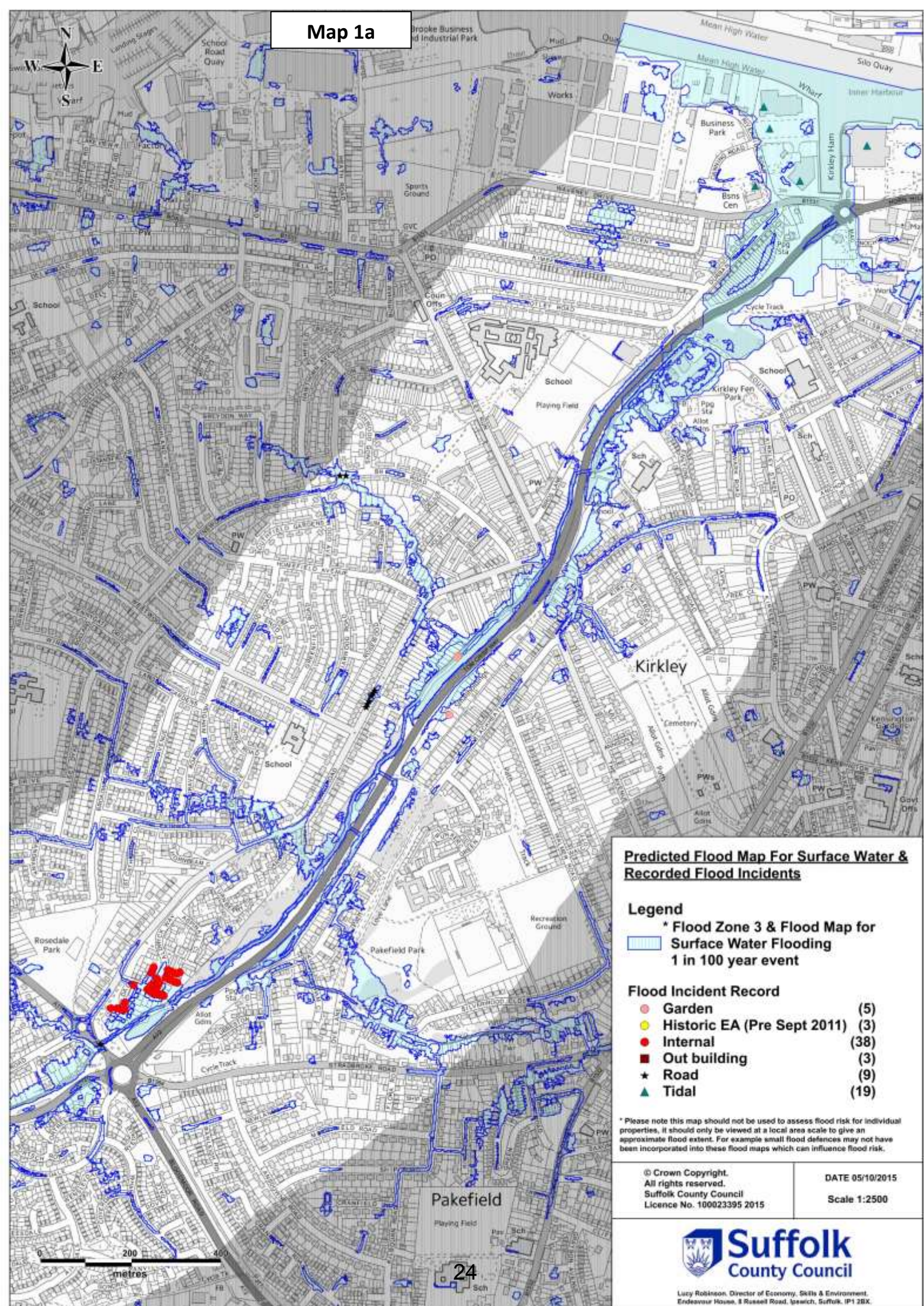
Suffolk County Council: 0345 606 6171 (emergencies);
0345 606 6067 (office hours)
floods@suffolk.org.uk or online reporting on www.suffolk.gov.uk

Waveney District Council: 01502 527133 (emergencies); 01502 562111 (office hours)

Suffolk Joint Emergency Planning Unit: 01502 523321 (office hours);
contact via Waveney District Council in an emergency

*Report prepared on behalf of the Suffolk Flood Risk Management Partnership
30 November 2015*

Map 1a



Predicted Flood Map For Surface Water & Recorded Flood Incidents

Legend

* Flood Zone 3 & Flood Map for Surface Water Flooding 1 in 100 year event

Flood Incident Record

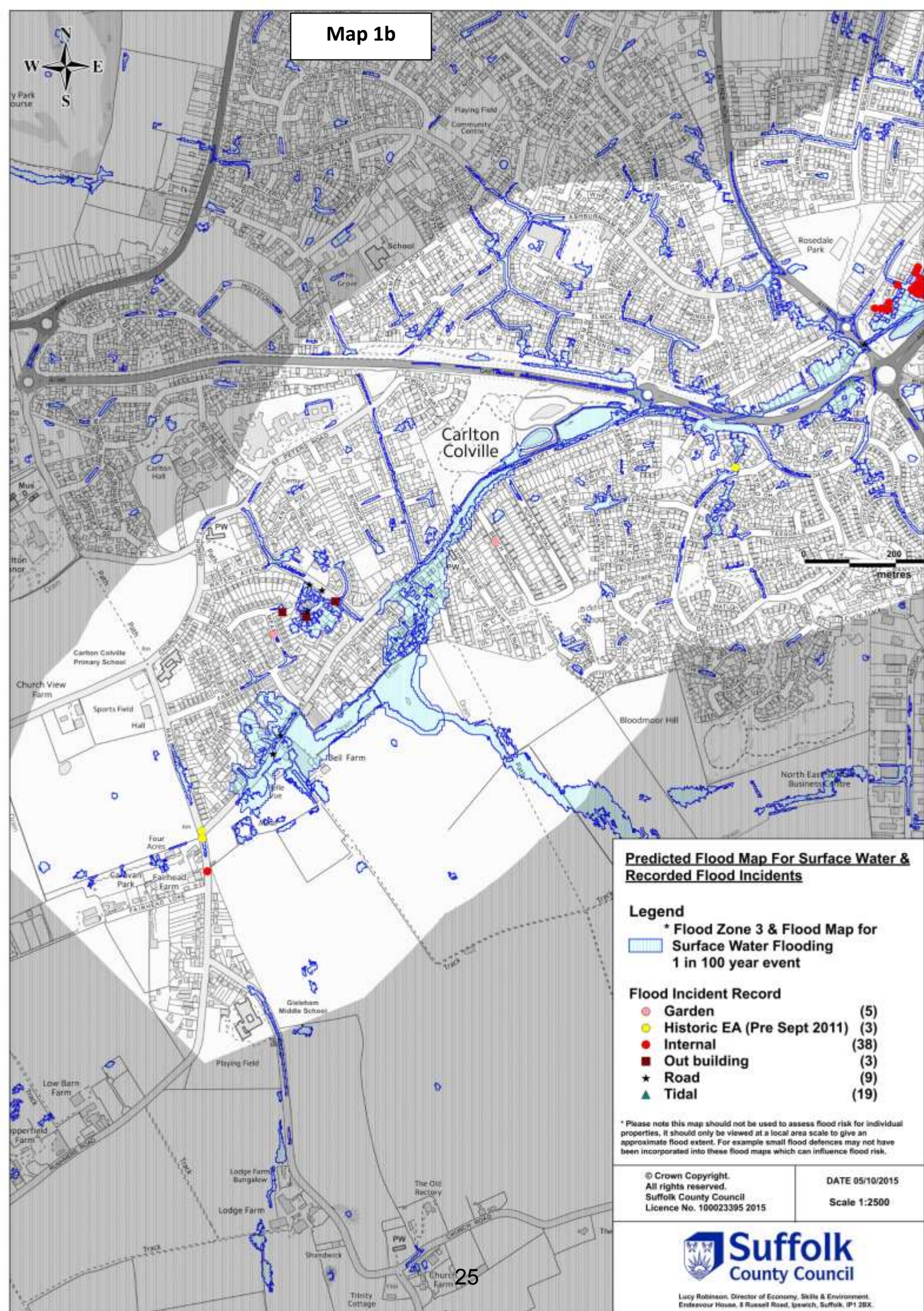
● Garden	(5)
● Historic EA (Pre Sept 2011)	(3)
● Internal	(38)
■ Out building	(3)
★ Road	(9)
▲ Tidal	(19)

* Please note this map should not be used to assess flood risk for individual properties, it should only be viewed at a local area scale to give an approximate flood extent. For example small flood defences may not have been incorporated into these flood maps which can influence flood risk.

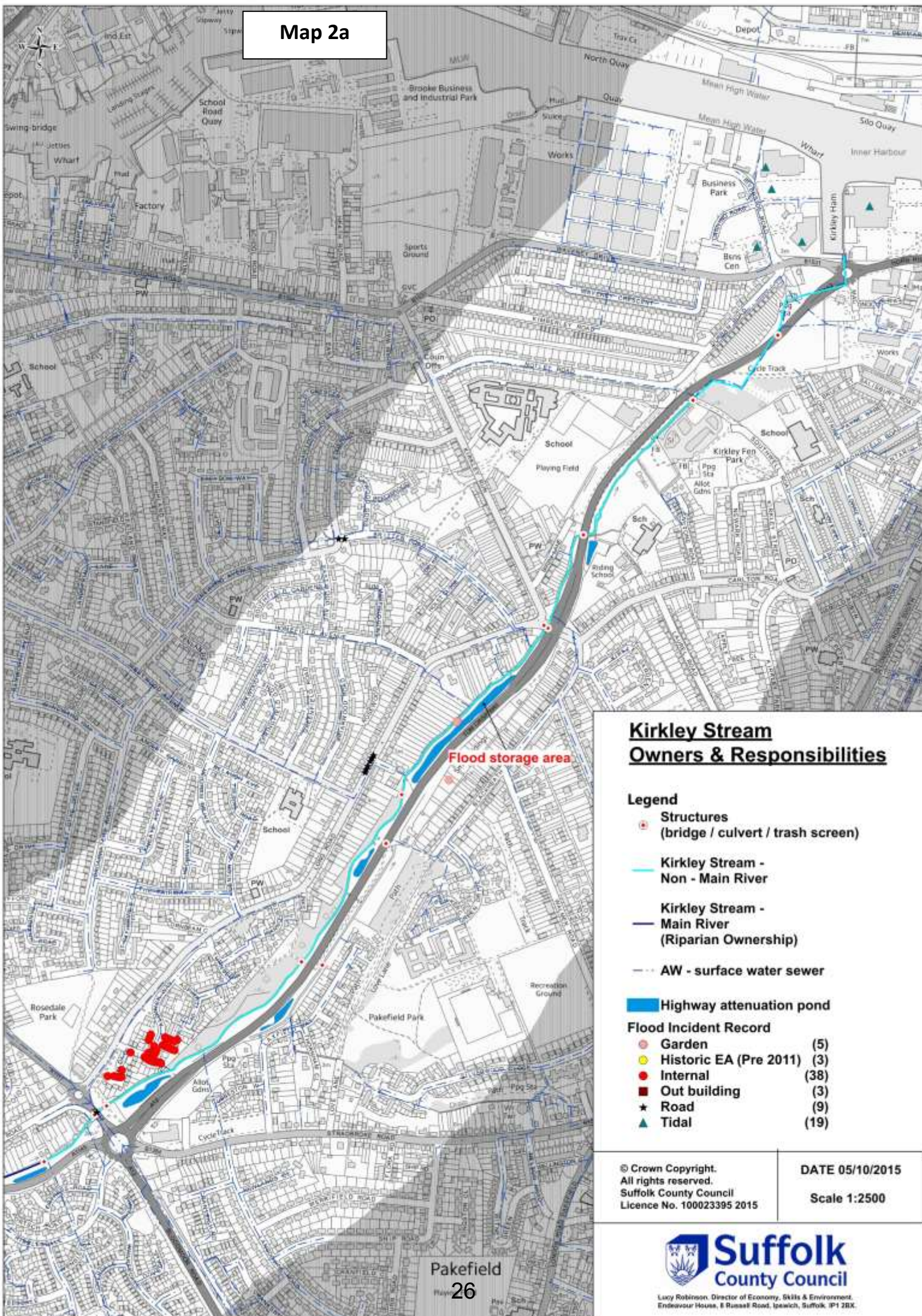
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DATE 05/10/2015
Scale 1:2500

Map 1b



Map 2a



Kirkley Stream Owners & Responsibilities

Legend

• Structures
(bridge / culvert / trash screen)

— Kirkley Stream -
Non - Main River

— Kirkley Stream -
Main River
(Riparian Ownership)

--- AW - surface water sewer

■ Highway attenuation pond

Flood Incident Record

• Garden	(5)
• Historic EA (Pre 2011)	(3)
• Internal	(38)
■ Out building	(3)
★ Road	(9)
▲ Tidal	(19)

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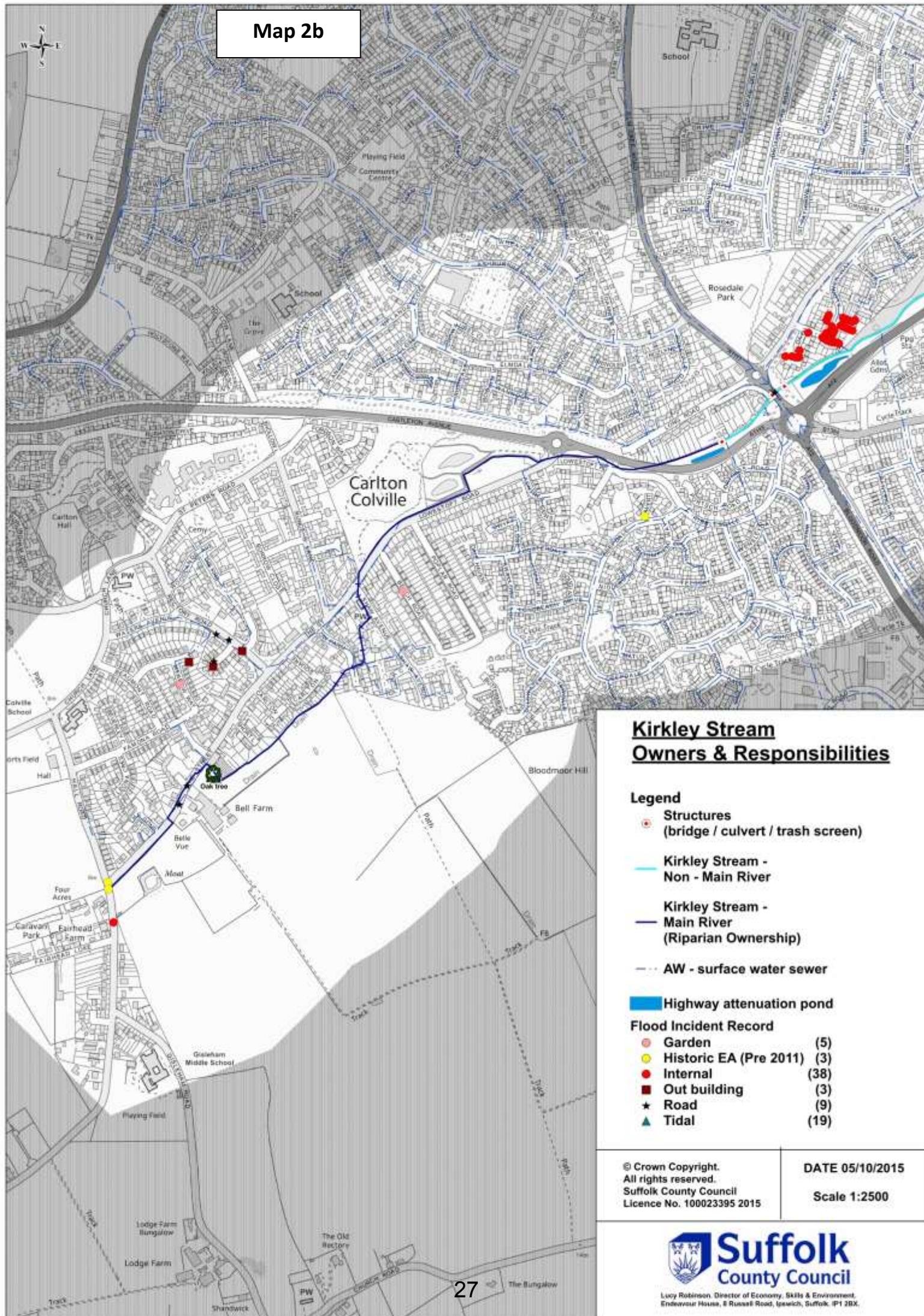
Scale 1:2500



Suffolk
County Council

Luxy Robinson, Director of Economy, Skills & Environment,
Enterprise House, 6 Russell Road, Ipswich, Suffolk, IP1 2BX.

Map 2b



Kirkley Stream Flood Report – December 2015

1. Background

This newsletter is to update you on progress since the distribution of the October newsletter and public meeting. Please refer to the October newsletter for background details.

This update covers the whole of the Kirkley Stream (or Brook as it is sometimes known) from Carlton Colville to its outfall into Lake Lothing at Kirkley Ham, not just the area around Velda Close/Adwyck Way that was the subject of the Section 19 (Flood & Water Management Act) investigation.

2. Reports published

We received a few minor corrections/comments on the draft Section 19 Investigation Report and the wider Kirkley Stream Report and we have now published the final versions reflecting these comments. The Section 19 report is attached to this newsletter and both reports can be viewed and downloaded from: www.greensuffolk.org/SFRMP/FIR.

3. Taking forward the recommendations in the Reports

The reports make a number of recommendations in relation to the Kirkley Stream. Progress against these recommendations is detailed below.

1. A topographical survey of Kirkley Stream from Bloodmoor Roundabout to Kirkley Ham (bed and bank) in relation to property thresholds, highway attenuation areas, flood storage area, etc has been completed. This has indicated the extent of clearance work that is needed and will also be used to determine longer term actions that might further reduce flood risk. We have also reviewed access arrangements for inspection and maintenance.
2. Clearance of vegetation and removal of silt in those areas where the survey has indicated this is needed has been agreed. The work will take place in early March and will be jointly funded by Anglian Water and Suffolk County Council directly. The work will include clearing more access routes into the stream and removal of vegetation in the channel and banks, in accordance with an agreed specification. The work timetable and specification have been influenced by advice from our ecologists, who will be on site during the works.
3. Upstream of Bloodmoor Roundabout, in the section defined as main river, the Environment Agency has undertaken clearance work to increase flows in the stream. Removal of a mature oak tree in the stream, that may be a factor increasing flood risk, has had to be delayed. The tree may be an important bat roost and until we can determine this when they emerge from hibernation in late March, we can do nothing due to the legal protection afforded to the bats. If the tree cannot be removed a by-pass channel will have to be considered and agreed with the landowner. Suffolk Highways and Anglian Water have also inspected and, as necessary cleared, their drainage systems in the Carlton Colville area.
4. The key agencies are currently in the process of agreeing ongoing maintenance procedures and responsibilities. These plans will be shared with you shortly. Having undertaken the necessary clearance of the stream all the way along, these procedures will be put in place.

5. The survey undertaken has been utilised to inform the flood risk model and we are also looking at whether other options, such as increasing the capacity of the flood storage and highway lagoons or providing other attenuation areas, would further reduce flood risk. These longer-term activities will become part of the wider Lowestoft Flood Risk Management Project (LFRMP). This £25+ million project aims to reduce all flood risks – tidal, river and surface water – delivering surface water improvements in the next few years and tidal protection by 2019/20. The Kirkley Stream area will be given the highest priority.
6. Anglian Water's trash screen, at the junction of Tom Crisp Way & Southwell Road, which catches debris as it flows down the stream, is being reviewed and may be redesigned and a telemetry monitoring system put in place. This would give a warning when blockages are occurring allowing more rapid and easier removal of debris, reducing the chances of flooding caused by blockages within the stream. Anglian Water will report on the feasibility of this early in 2016. In the interim a level monitor will be installing on the current grill. This monitor will have a radio link to the Anglian Water pumping station in Fen Park. This will notify their Operational Management Centre in Lincoln if water levels rise in Kirkley Stream to enable local action to ensure the stream is kept free from such blockages. This work should be completed by the end of January.
7. Another matter that was a cause of concern was the impact on new development on flood risk and whether there are any means to limit any new discharges into the Kirkley Stream. All relevant parties are meeting to discuss this in January. This is largely a matter for Waveney District Council (as planning authority) but Anglian Water and the Environment Agency and Suffolk County Council are working with them to consider what can be done and make recommendations to the Suffolk Flood Risk Management Partnership in spring 2016.
8. The report proposed that flood resilience measures to be considered for properties at significant flood risk. This will be a matter for the home owners and Housing Association to progress as they see fit. We understand that few property owners are intending to install flood resilience measures as these are expensive and not covered by insurance.
We are aware that the Cotman Housing Association residents are now back in their homes but several of the private residents in Velda Close are still not back in their properties and it may be many more months before they can return. Our thoughts are with everyone who faces a difficult Christmas in temporary accommodation and to all who live with the ongoing stress, anxiety and many practical effects resulting from the one night of flooding last July. To all in this unenviable position please rest assured that we are all doing our best to reduce the risk of it happening again.
9. The Suffolk Joint Emergency Planning Unit (JEPU) will continue to provide support to the residents of Carlton Colville and Aldwyck Way/Velda Close in the development of their own Community Emergency Planning groups.

4. Next steps

We will continue to keep you informed about our activities by sending out updates such as this one and have arranged another public meeting on **Friday 1st April 2016 4.00-6.00pm at Waveney District Council, Riverside**. We hope to see you there. Meanwhile, please do not hesitate to get in touch if you would like further information.

Best wishes for Christmas and a Happy New Year from us all

Helpful contacts:

Anglian Water: 03457 145 145 (24-hour, 7 days a week)

Environment Agency Flood Line: 0345 988 188 (24-hour)

Suffolk County Council: 0345 606 6171 (emergencies);
0345 606 6067 (office hours)
floods@suffolk.org.uk or online reporting on www.suffolk.gov.uk

Waveney District Council: 01502 527133 (emergencies); 01502
562111 (office hours)

Suffolk Joint Emergency Planning Unit: 01502 523321 (office hours);
contact via Waveney District Council in an emergency

Report prepared on behalf of the Suffolk Flood Risk Management Partnership
18/12/2015

Kirkley Stream Flood Report – January 2016

1. Background

This newsletter is to update you on progress since the distribution of the December newsletter. Please refer to this and the October newsletter for background details. The S19 Flood investigation and wider reports can be viewed and downloaded from: www.greensuffolk.org/SFRMP/FIR

This update covers the whole of the Kirkley Stream (or Brook as it is sometimes known) from Carlton Colville to its outfall into Lake Lothing at Kirkley Ham.

2. Clearance works starting week commencing 1st February 2016

A topographical survey of Kirkley Stream from Bloodmoor Roundabout to Kirkley Ham was completed and has indicated the extent of clearance work that is needed. This work will commence next week, led by the Environment Agency (Project Manager: Paul Beck) on behalf of the Partnership. The East Suffolk Internal Drainage Board and Waveney Norse are also supplying labour, to ensure we get the work done quickly before birds start nesting.

You will notice a small site compound on land just off Bloodmoor Roundabout and there are likely to be about six people involved in the work plus an environmental expert who will ensure the work complies with ecological regulations and does not disturb water vole burrows. Most of the clearance work will be done by hand or remote control flail.

The objective is to clear dense willow and other shrubs from the stream bed to about 2 metres up the bank. The willows will be coppiced to near the trunk base and cut material taken off site. (We are currently looking for a use for the willow material, but if none can be found it will be chipped and removed). The willow roots will be left to ensure the stability of the banks. Overhanging branches of established trees will also be removed and in April we intend to spray the bulrushes to prevent them spreading. The extent of clearance needed varies along the stream, so you will see less activity in some areas.



Typical willow growth that will be coppiced

The aim of all this work is to ensure the water can flow freely without the risk of debris snagging on vegetation and blocking the channel.

There are areas where garden waste and other debris will also need to be removed (see picture).

We ask that local residents ensure this is not replaced with similar material in the future!



Silt levels are low to moderate, and generally accumulate near to structures and along the toe of the channel where there are willows, as would be expected. . We do not believe this is contributing significantly to flood risk and thus we will not be undertaking any silt removal. Neither will we be undertaking any clearance of the flood storage area until further studies have confirmed whether this would further reduce flood risk.

We expect the initial work to take two to three weeks, it will be jointly funded jointly by Suffolk County Council and Anglian Water.

3. Taking forward other recommendations in the reports

The reports make a number of other recommendations in relation to the Kirkley Stream. Progress against these recommendations is detailed below.

1. Upstream of Bloodmoor Roundabout, in the section defined as main river, the Environment Agency has undertaken clearance work to increase flows in the stream. This has partially solved the problem and further discussions between all parties are ongoing. Any possible options will be considered as part of the longer term Lowestoft Flood Management Project that is examining potential improvements across the town. Waveney District Council, who is responsible for the maintenance of the channel adjacent to Meadow Park, confirms that clearance work in this area is likely to take place this autumn at the end of the bird breeding season.
2. The key agencies are currently in the process of agreeing ongoing maintenance procedures and responsibilities. These plans will be shared with you shortly. Having undertaken the necessary clearance of the stream, detailed above, these procedures will be put in place.
3. Potential improvements to Anglian Water's trash screen, at the junction of Tom Crisp Way and Southwell Road, which catches debris as it flows down the stream, are currently being reviewed and a telemetry monitoring system put in place next week. This system will give a warning when blockages are occurring allowing more rapid removal of debris, reducing the chances of flooding caused by blockages within the stream.
4. Another matter that was a cause of concern was the impact on new development on flood risk and whether there are any means to limit any new discharges into the Kirkley Stream. All relevant parties met to discuss this in January. In the short term this is a matter for Waveney District

Council, as planning authority, to ensure flood risk is properly considered, for each proposed development. Decisions will be supported with advice from partners (including the County Council, Anglian Water and the Environment Agency who are statutory consultees within the planning process) and working closely with developers. As Waveney updates the Lowestoft Strategic Flood Risk Assessment and Local Plan, it may be possible to provide greater guidance to prospective developers in this area to strengthen the need to reduce run off from development sites.

4. Next steps

We will continue to keep you informed about our activities by sending out updates such as this one and have arranged another public meeting on **Friday 1st April 2016, 4.00-6.00pm at Waveney District Council, Riverside**. We hope to see you there. Meanwhile, please do not hesitate to get in touch if you would like further information.

Helpful contacts:

Anglian Water: 03457 145 145 (24-hour, 7 days a week)

Environment Agency Flood Line: 0345 988 188 (24-hour)

Suffolk County Council: 0345 606 6171 (emergencies);
0345 606 6067 (office hours)
floods@suffolk.org.uk or online reporting on www.suffolk.gov.uk

Waveney District Council: 01502 527133 (emergencies); 01502 562111 (office hours)

Suffolk Joint Emergency Planning Unit: 01502 523321 (office hours);
contact via Waveney District Council in an emergency

*Report prepared on behalf of the Suffolk Flood Risk Management Partnership
28/01/2016*

Kirkley Stream Flood Report – March 2016

1. Background

This newsletter is to update you on progress since the distribution of the January newsletter and to remind you that there will be another public meeting on **Friday 1st April 2016, 4.00-6.00pm at Waveney District Council, Riverside**. We hope to see you there.

Please refer to previous newsletters for background details to this matter. The S19 Flood Investigation and update reports can be viewed and downloaded from: www.greensuffolk.org/SFRMP/FIR

This update covers the whole of the Kirkley Stream (or Brook as it is sometimes known) from Carlton Colville to its outfall into Lake Lothing at Kirkley Ham.

2. Clearance works February-March 2016

The clearance work on the stream from Bloodmoor Roundabout to Kirkley Ham as described in the last update has been completed. This work was led by the Environment Agency (Project Manager: Paul Beck) on behalf of the Partnership.

The objective was to clear dense willow and other shrubs from the stream bed to about 2 metres up the bank. The willows have been coppiced to near the trunk base and cut material was shredded or will be secured on adjacent land. Overhanging branches of established trees have also been removed and in April/May we intend to spray the bankside vegetation, including bulrushes, to prevent further spreading. The extent of clearance required varied along the stream, so you will see less activity in some areas.

The aim of all this work is to ensure the water can move freely during high flows by reducing the amount of natural debris in the channel that can result in snagging and blockages which was the cause of the flooding in July 2015.



Typical willow growth before clearance



Stream after clearance

3. Taking forward other recommendations in the reports

The reports make a number of other recommendations in relation to the Kirkley Stream. Progress against these recommendations is detailed below.

1. Upstream of Bloodmoor Roundabout at Carlton Colville, in the section defined as Main River, the Environment Agency has undertaken clearance work to improve the capacity of the channel and reduce the likelihood of blockages occurring. Further discussions between all parties are ongoing, which will include options to further reduce flood risk that will be considered as part of the Lowestoft Flood Risk Management Project

Waveney District Council, who is responsible for the maintenance of the channel adjacent to Meadow Park, will be working with the Environment Agency to carry out scrub and vegetation clearance work in this area during autumn 2016. This will allow the Environment Agency machine access to Kirkley Stream to carry out vegetation clearance and dredging works which will improve the channel capacity and reduce the likelihood of blockages occurring.

2. The key agencies have agreed the principles for ongoing maintenance procedures and responsibilities. Having undertaken the necessary clearance of the stream these will be refined and implemented to ensure risks of blockages and resulting flooding are reduced.
3. Anglian Water's trash screen, at the junction of Tom Crisp Way and Southwell Road, which catches debris as it flows down the stream, now has a telemetry monitoring system in place. This system will give a warning when blockages are developing allowing more rapid removal of debris, further reducing the risk of flooding caused by blockages within the stream.
4. A full topographical survey of the stream has been undertaken and this information has been fed into the Lowestoft Flood Risk Management Project. This information will be used to determine if there are opportunities to further reduce flood risk in the area, within the resources available, as part to this longer term project. We will continue to engage in dialogue with interested parties as options become more clearly defined, with a period of public consultation commencing at the end of May.

Helpful contacts:

Anglian Water: 03457 145 145 (24-hour, 7 days a week)

Environment Agency Flood Line: 0345 988 188 (24-hour)

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