Section 19

Flood and Water Management Act 2010

Ref S19-870

Number of properties covered in this document - 24

Date and version number – 09/12/2024

Version 6

Table of Contents

Abbreviations / Acronyms

- AW – Anglian Water
- EA – Environment Agency
- IDB – Internal Drainage Boards
- LCC – Lincolnshire County Council
- LLFA – Lead Local Flood Authority
- PFR – Property Flood Resilience
- RMA – Risk Management Authority
- S19 – Section 19 of the Flood and Water Management Act 2010
- SKDC – South Kesteven District Council

Property information

Address /Addresses:

Following the initial commissioning of this investigation (see above) it is also understood that the below properties flooded internally and / or externally as a result of Storm Henk-

- [redacted] Bainton Road, Tallington, Stamford, PE9 4RT
- [redacted] Bainton Road, Tallington, Stamford, PE9 4RT
- [redacted] Searson Close, Tallington, Stamford, PE9 4RF
- [redacted] Searson Close, Tallington, Stamford, PE9 4RF
- [redacted], Church Lane, Tallington, Stamford, PE9 4RU
- [redacted], Main Road, Tallington, Stamford, PE9 4RP

- [redacted], Main Road, Tallington, Stamford, PE9 4RP
- [redacted], Main Road, Tallington, Stamford, PE9 4RP
- [redacted], Main Road, Tallington, Stamford, PE9 4RP
- [redacted], Main Road, Tallington, Stamford, PE9 4RP
- [redacted], Main Road, Tallington, Stamford, PE9 4RP
- [redacted] Mill Lane, Tallington, Stamford, PE9 4RR
- [redacted], Tallington, Stamford, PE9 4RR
- The Farm House, Mill Lane, Tallington, Stamford, PE9 4RR

[redacted], Main Road, Tallington, Stamford, PE9 4RP – External flooding only

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For further information regarding this report, please contact FloodRisk@lincolnshire.gov.uk

Version History

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Draft LCC Comment	VV	RH	RH	VV	10/05/24
2.0	Issue to LCC	VV	RH	RH	VV	20/05/24
3.0	Parish Council / Environment Agency Information Update	RD / AB (LCC)	AB	AB	AB	15/08/24
4.0	Update re Culvert Under East Coast mainline	RD (LCC)	AB (LCC)	AB (LCC)	-	25/09/24
5.0	Anglian Water Information Update	RD (LCC)	AB (LCC)	AB (LCC)	AB (LCC)	21/10/24
6.0	Updated in Light of RMA Comments	RD (LCC)	AB (LCC)	AB (LCC)	AB (LCC)	09/12/24

Authorities with Flood Risk Management Functions

The following Risk Management Authorities have flood risk functions within Lincolnshire:

Lead Local Flood Authority - Are responsible for coordinating the mitigation of risk of flooding from surface water, groundwater and ordinary watercourses (non-main rivers). The LLFA is also responsible for developing, maintaining and applying a strategy for local flood risk management in their area and for maintaining a register of flood risk assets. LLFAs also have a statutory duty to investigate significant flood events to the extent they consider necessary.

Environment Agency - Is tasked with the protection and conservation of the water environment in England, the natural beauty of rivers and wetlands and the wildlife that lives there. There responsibilities include: water quality and resources; fisheries; conservation and ecology; and operational responsibility for managing the risk of flooding from main rivers (usually large streams and rivers), reservoirs, estuaries and the sea. Flood risk management work can include: constructing and maintaining 'assets' (such as flood banks or pumping stations) and works to main rivers to manage water levels and make sure flood water can flow freely; operating flood risk management assets during a flood; dredging the river; and issuing flood warnings. The Environment Agency can also do work to prevent environmental damage to watercourses, or to restore conditions where damage has already been done.

Internal Drainage Board - Are independent public bodies, established in areas of special drainage need known as drainage districts. The IDB is responsible for the supervision of land drainage, water level management and flood risk management works and regulation of ordinary watercourses within their Drainage District. The IDB also plays an important role in the areas they cover (approximately 10% of England at present) in working in partnership with other authorities to actively manage and reduce the risk of flooding.

Highways Authority - Is responsible for maintaining the highway drainage system to an acceptable standard and ensuring that road projects do not increase flood risk.

Water & Sewage Company - Water and sewerage companies are responsible for the provision of wastewater collection and treatment systems, including for managing the risks of flooding from surface water and foul or combined public sewer systems providing drainage from buildings and yards.

District Councils - Including Borough and City Councils, have powers to carry out works to manage flood risk from ordinary watercourses (outside the internal drainage district of Internal Drainage Boards) and the sea. They are also planning authorities, responsible for developing a local plan, which must have regard to national planning policy and work with

Lead Local Flood Authorities and others to ensure decisions on development in their area effectively manage the risks from flooding. Additionally, those District Councils that are next to the sea are also designated coast protection authorities. This role includes leading on coastal erosion risk management activities, leading and supporting coastal groups, and leading the production of shoreline management plans.

In addition to the above, other parties that may have responsibilities include:

Riparian Landowners - Riparian landowners who own land or property crossed by or next to a river, stream or ditch, (including where this runs through a pipe or culvert), have rights and responsibilities over the management of the land including: a responsibility to let water flow through the land without any obstruction, pollution or diversion which affects the rights of others; keeping banks clear of anything that could cause an obstruction and increase flood risk; maintaining the bed and banks of the watercourse; and keeping structures clear of debris.

Residents - Should find out about any flood risk in the area, sign up for the Environment Agency's free flood warnings and make a written plan of how they will respond to a flood situation. Business owners should also make a flood plan for their business. There are measures that can be taken to reduce the amount of damage caused by flooding and properties at risk should be insured. Local residents can find out if their property is at risk, prepare for flooding, get help during a flood and get help after a flood.

Executive Summary

The purpose of this Section 19 (S19) Flood Investigation Report is to identify the cause of flooding. The report will provide an overview of the problem, identify the flooding mechanisms, identify relevant Risk Management Authorities (RMAs) and stakeholders, and provide a list of recommendations.

Following Storm Henk (02/01/2024) residents were alerted to rising water levels in the adjacent River Welland and contacted the appropriate authorities for support.

Internal property flooding commenced at approximately midnight on 04/01/2024 with a total of 24 properties reporting flooding to LCC and other Risk Management Authorities.

It is recognised that like many areas the numbers of properties reporting flooding to the Risk Management Authorities may differ to the number which experienced internal property flooding during this event.

The flooding in Tallington resulted from numerous mechanisms interacting with one another to give cause to the flooding realised. Known flood mechanisms included surface water, surcharging of drainage systems, condition of watercourses, groundwater infiltration, and

potential performance of a flap valve on the River Welland, although it is worth noting that, to date, no reports or tangible evidence of water coming through and / or breaching the banks of the River Welland have been received.

In relation to this flood event, the following RMAs have relevant flood risk management functions:

- Anglian Water Services
- Environment Agency
- Lincolnshire County Council as a LLFA
- Lincolnshire County Council Highways Authority
- South Kesteven District Council

Network Rail has also been identified as a relevant stakeholder in this instance.

A record as to whether the above RMAs have exercised, or are proposing to exercise those functions in response to the flood shall be monitored through the existing Joint Lincolnshire Flood Risk and Water Management Partnership.

Following the flooding incident, the village has been pragmatic and established the Tallington rapid response flood team, local flood wardens and the Parish Council have also purchased two pumps to aid in future incidents.

The report details the responses of the RMAs during and directly after the event and concludes with a number of recommendations.

Seven recommendations are made:

a) LCC / AW / SKDC: Consider a partnership funded project to repair / refurbish the surface water sewer which runs along Main Street to Searsons Court and / or explore what other opportunities may exist to reduce the risk of surface water flooding in Tallington.
b) Riparian Owners: Maintain local land drains and culverts adjacent to the River Welland to ensure natural flow of water, LCC to consider use of enforcement powers where necessary.
c) EA: to consider reviewing the need for a permanent pump or alternative solution should be investigated and employed at the River Welland bridge (NGR 509225E, 307802N).
d) EA: to consider investigating the River Welland Flap Valve functionality (NGR 509221E, 307797N) and, if necessary, consider an appropriate replacement / improvement to the asset to ensure correct functionality. Following a CCTV survey on the 14th of May 2024, it is understood that works to replace the existing flap valve with a more heavy duty variety are currently being considered by the EA.
e) The relevant RMAs in collaboration with Network Rail: To establish ownership of the surface water culvert under the A1175 / East Coast mainline crossing.

f) LCC: to offer support to Tallington rapid response flood team, local flood wardens and Parish Council should the creation of an emergency flood response plan be deemed desirable.

g) LCC in collaboration with partner RMAs: to consider the installation of telemetry at strategic locations in the catchment.

1.Introduction

1.1 The purpose of this S19

The purpose of this investigation is threefold-

1. To understand and determine the cause of flooding following a recent flood event that occurred between the dates 2nd of January to the 8th of January 2024, with further flooding occurring on the 18th – 22nd February 2024.
2. To suggest recommendations that may alleviate potential future flooding events or if the affected properties or location should be considered as suitable for a capital project.
3. To determine which Risk Management Authorities (RMAs) have relevant flood risk management functions.

1.2 Previous S19 investigations

A Section 19, reference S19-129 was previously undertaken following a flood on 04/07/2015 when a single dwelling reported internal flooding due to issues within the local surface water drainage system.

To reduce the risk of future flooding it was recommended that:

a) AW consider carrying out investigations into their system and programming remedial works in order to minimise the risk of flooding;
b) AW consider investigating the whole length of the system;
c) AW consider ensuring that the system is clear and running freely;
d) AW consider investigating whether the capacity of the system is sufficient for the catchment area and investigate to ensure the outfall is sufficient for the volumes of water expected;
e) AW consider inspecting and servicing the flood gates installed at the property.

In response to this flood Anglian Water (AW) undertook a review of their assets including a capacity assessment using a hydraulic model and additional surveys to determine local connectivity. No PFR measures were visible when FPS Environmental Ltd visited site on the 09/04/2024

2. Background Information

2.1 Site location

The Properties are located within the village of Tallington within the South Kesteven District Council area of Lincolnshire (Figure 1). The properties are also situated within the extended area of the Welland and Deeping Internal Drainage Board ("the Board").

The properties are situated on the Kellaways Clay Member bedrock.

While the area is relatively flat and low lying, the properties impacted are situated in topographic low spots with 1m DTM Lidar data suggesting that the open spaces and properties with the highest impact are situated at approximately 14.2m AOD lower than the adjacent highway, other internally flooded properties are situated at approximately 14.7 – 15m AOD with lower areas allowing flow paths via gardens / open spaces.

(*Figure 1 – Location of known affected properties*)

2.2 Flood risk overview

The properties are within Flood Zone level 1, which indicates they have a low probability (less than a 0.1% chance of flooding in any given year) of flooding from rivers and the sea. It is important to note that this data is "*based on present day flood risk*, [i.e., it does] *not show how it may change in* [the] *future because of climate change*", and it "*ignores the effect any flood defences shown could have*".

The Properties are situated in an area where the risk of surface water flooding is identified as being very low to medium (Figure 2).

Medium risk of surface water flooding means an area has an annual chance of flooding of between 1% and 3.3%. Low risk means an area has an annual chance of flooding of between 0.1% and 1%, with very low risk meaning an area has an annual chance of flooding of less than 0.1%.

(*Figure 2 – Surface water flooding risk to the affected properties*)

It should however be noted that the above analysis carries the following disclaimer-

"All information, particularly the likelihood of surface water flooding, is a general indicator of an area's flood risk. As such, it is not suitable for identifying whether an individual property will flood. This service uses computer models to assess an area's long-term flood risk from rivers, the sea, surface water and some groundwater. It does not include flood risk from sources such as blocked drains and burst pipes".

2.3 Drainage arrangement

The village of Tallington, south of the Main Road (A1175) lies within the Maxey unpumped catchment, which is the operational boundary of the Welland & Deepings IDB. The Maxey unpumped catchment covers an area 37,862,011m^2 including parts of Tallington, Bainton and

Glinton but not Tallington Lakes, Uffington or Stamford. IDB assets south of Tallington include the Beldham Dyke.

There are known EA managed / installed flood management assets on the nearby open watercourse. Natural high ground (139312) ties into raised embankments which are visible along both sides of the River Welland watercourse (Open Channel: 377422) with the raised embankments running along both banks north and south and upstream and downstream of the road bridge (Embankment: 136549 & Embankment D/S Lolham Cut Sluice L). A flap valve is situated on the northern bank of the river, directly upstream (west) of the bridge.

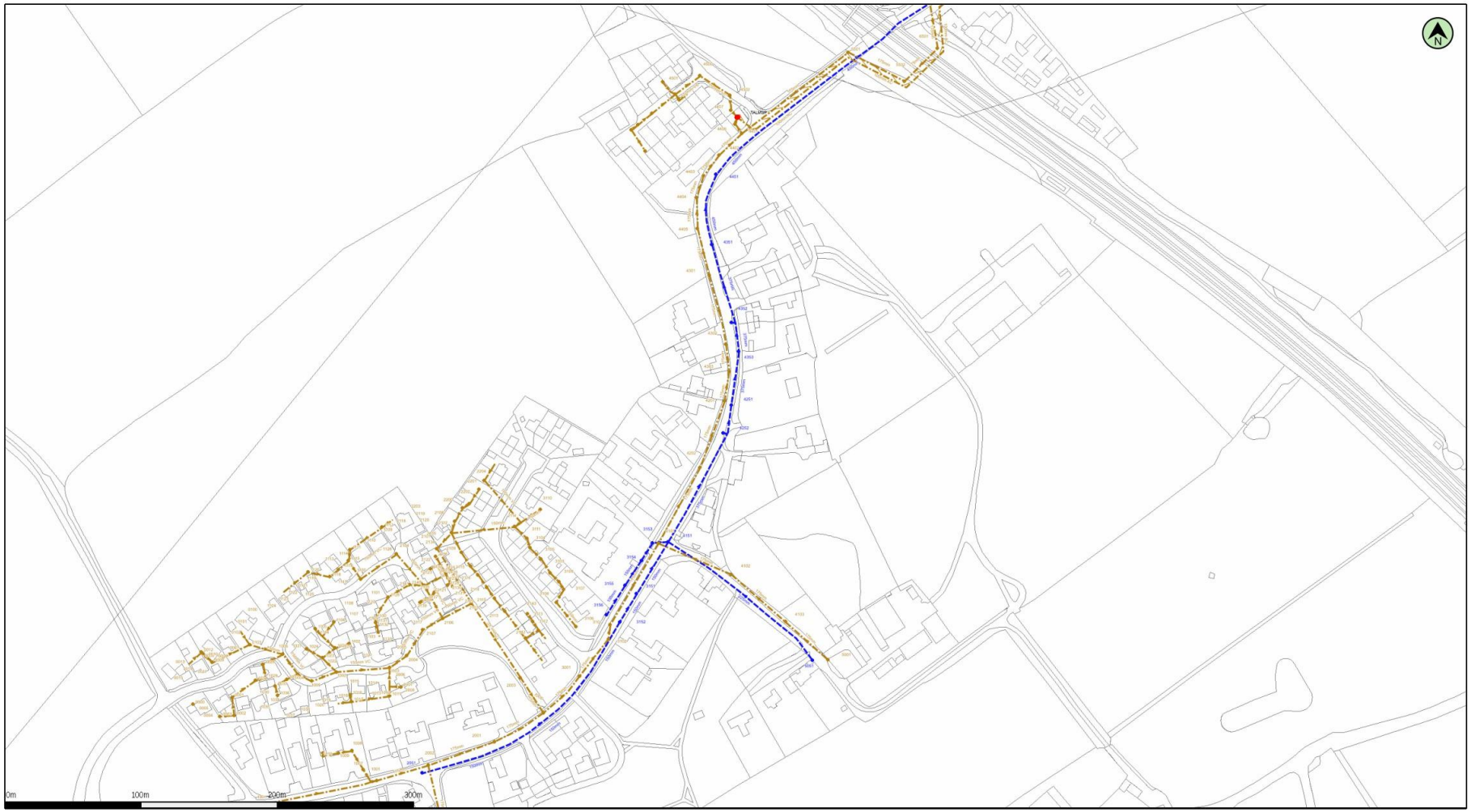
Based on available records, the drainage connectivity of the local area is outlined in Figures 3 and 4 below. Notwithstanding the current asset records shown in Figure 3, it is understood by LCC through correspondence with Anglian Water that they are looking to de-vest the surface water sewer (which flows under the East Coast mainline) as it does not serve any of their statutory duties under the Water Industry Act 1991.

Following the 2015 flood event (refence S19-129) Anglian Water undertook a review of their assets including a capacity assessment using a hydraulic model and additional surveys to determine local connectivity.

The foul network is gravity drained to a foul water pumping station near Searson Close, where the foul is pumped east under the railway line.

Surface water is also gravity drained towards Searson Close. The AW survey found that most properties drain directly to soakaways with only 8 properties draining roof water into the foul sewer.

LCC does not have a continuous coverage of recorded highway drainage assets in this area, with some highway gullies connected to local surface water sewers and AW sewers. The highway gullies at the junction of Tallington Road and Main Road connect to a highway drain, and a highway drain is noted along the junction will Mill Lane and Main Road, which extends north east along the Main Road and under the railway lines.



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- Foul Sewer
- Surface Sewer
- Combined Sewer
- Final Effluent
- Rising Main*
- Private Sewer*
- Decommissioned Sewer*
- Outfall*
- Inlet*
- Manhole*
- Sewage Treatment Works
- Public Pumping Station
- Decommissioned Pumping Station

*(Colour denotes effluent type)

ryan.davies@lincolnshire.gov.uk
Anglian Water Assets

love every drop anglianwater

(*Figure 3 – Anglian Water assets in the affected area*)

(*Figure 4 – Drainage connectivity in the affected area*)

It is understood that discussions are on-going with respect to determining ownership of the surface water sewer which flows under the A1175 / East Coast mainline. A review of historical maps does not show the presence of a natural watercourse along the route.

There is however mapped evidence of areas of marsh / ponding, and the former route of the Stamford Canal, part of the Welland Navigation used (mid-17th century for 200 years) a section of which is still visible from Herons Close and along Millenium Green.

A presentation by Anglian Water to the Parish Council on 10/07/2018 identified that the condition of 482m of the sewer running down the Main Road from Bainton Road towards Searson Court was classified as grade 5 and as such was in need of refurbishment or replacement.

The presentation also raised concerns about the maintenance of local riparian owned watercourses and the need to clear debris and vegetation and in some instances possible regrading is recommended.

2.4 Previous flooding incidents – outline of historic flood events:

The summary table below highlights historic flood events that have been reported to LCC / recorded in the area since 1st of January 2019 to the 31st of December 2023.

Report No.	Enquiry number	Status	Enquiry Summary	Address
1	352419	Third Party Responsibility	*Flooding on A1175 onto shared drive and adjacent driveway.* *Dropped kerb allowing water flow path onto property.* *Is it possible to raise the kerb height?*	[redacted] Main Road, Tallington, PE9 4RP
2	383259	Assessed – no action proposed	*Flooding on A1175 onto shared drive and adjacent driveway.* *Dropped kerb allowing water flow path onto property.* *Is it possible to raise the kerb height?*	[redacted] Main Road, Tallington, PE9 4RP
3	402495	Job complete - Resolved	*Flooding on A1175 onto shared drive and adjacent driveway.* *Dropped kerb allowing water flow path onto property.* *Is it possible to raise the kerb height?* *Works undertaken to raise dropped kerbs*	[redacted] Main Road, Tallington, PE9 4RP
4				[redacted] Main Road, Tallington,

	405237	Job complete - Resolved	*Flooding on A1175 onto shared drive and adjacent driveway.* *Dropped kerb allowing water flow path onto property.* *Is it possible to raise the kerb height?*	PE9 4RP

			Works undertaken to raise dropped kerbs	
5	1809404	Job complete - Resolved	*Flooding, gully tanker required*	[redacted] Bainton Road, Tallington
6	4164774	Third Party Responsibility	**no current flooding**	Near _ Season close, Tallington

Reports 1,2, 3, and 4 are regarding an ongoing issue impacting properties reported at [redacted], where a dropped kerb is reported to allow water to flow from the A1175 onto private driveways impacting property and outbuildings.

Report 5 is from a property experiencing flooding and LCC is recorded as sending a tanker to resolve the issue.

Report 6 has limited details.

3. Flood event

3.1 Conditions prior to the event

The EA Water situation report records that the week of 27th December 2023 to 2nd January 2024 was a very wet week. The total averaged rainfall of 114mm recorded in December was 206% of the Long Term Average. That is just over double the rain that would normally be expected to fall in December. The months preceding were also wetter than average.

Storm Gerrit brought damaging winds and heavy rain to the UK from 27 to 28 December. Between 6 to 12mm of rain fell across the rain gauges serving the Welland catchment on 27 December with some further 10-12mm affecting the Stamford/Etton area on the 28 December.

Despite not being named storms, there were further bouts of heavy rain on 31 December (10 to 20mm) and 1 January 2024 (9 to 15mm).

3.2 Rainfall Analysis

Storm Henk arrived on 2 January, bringing rainfall totals of up to 33mm. The rainfall totals were higher towards the lower end of the catchment. For example, Stamford recorded 26.6mm and 29.4mm in a 24 hour period. The rainfall was intense with the majority of that rain falling between 10:00 and 15:30.

Rainfall totals for the seven days from 27 December to 2 January were between 56 to 90 mm across the Welland catchment.

The hyetograph below shows the two peaks of the storm event on the evening of the 01/01/2024 and the afternoon of the 02/02/2024.

High rainfall within the already saturated catchment caused levels in the River Welland to rise, with a new record high water level of 2.05m recorded on 03/01/2024 at the EA River Welland level at Tallington gauging station.

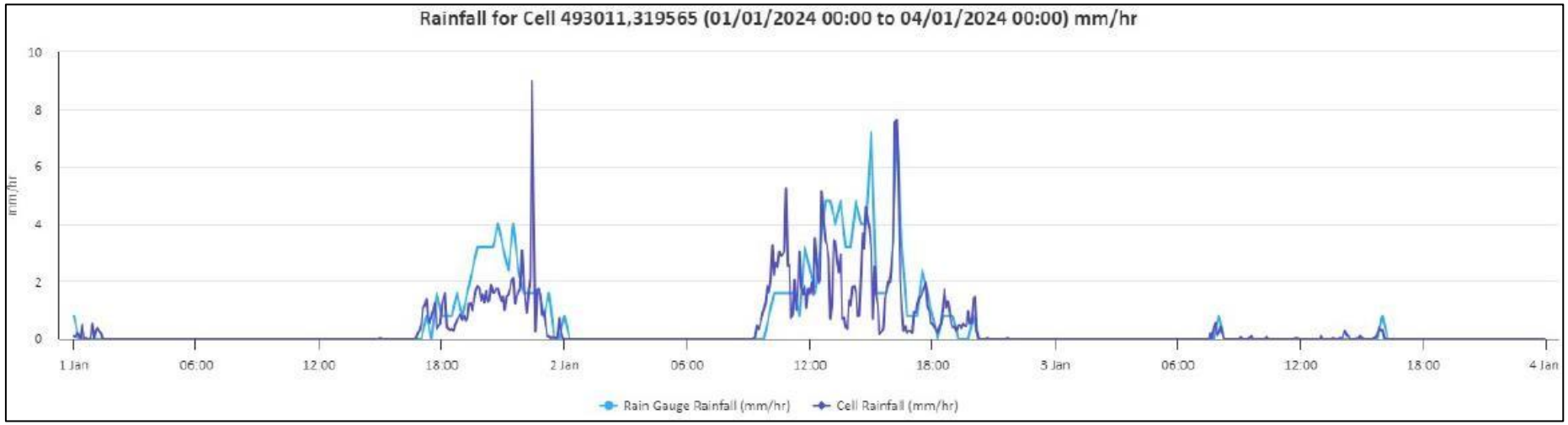


Figure 5 Rainfall Hyetograph from gauge E7155

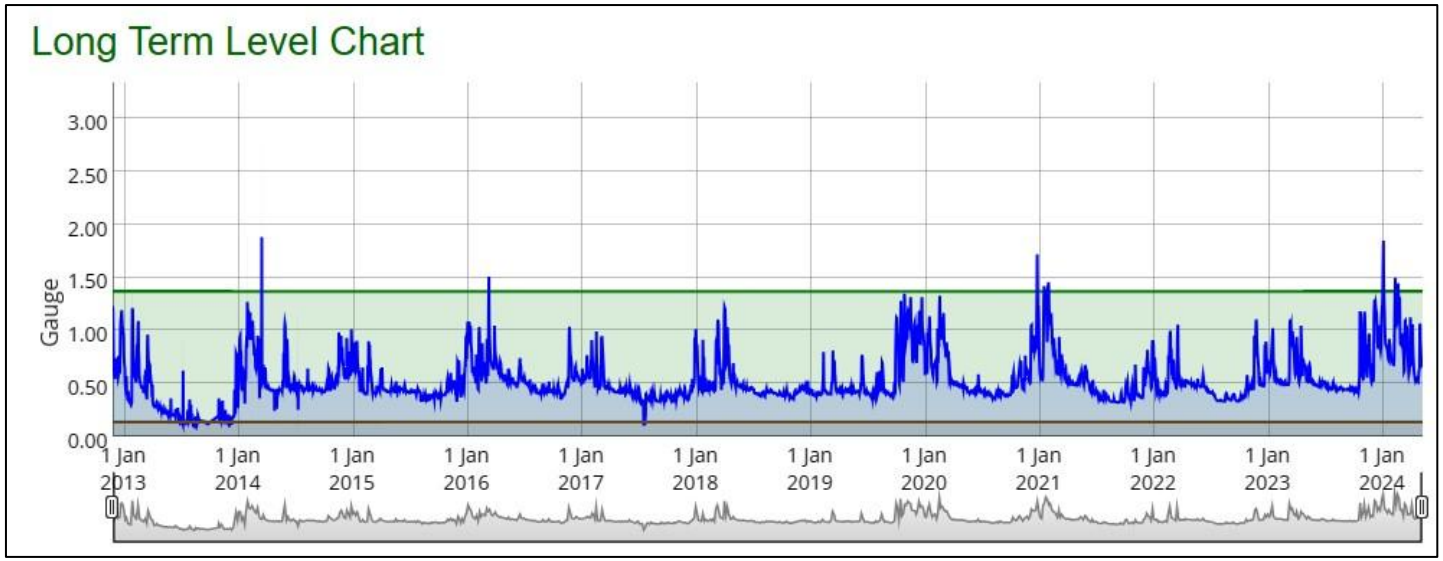
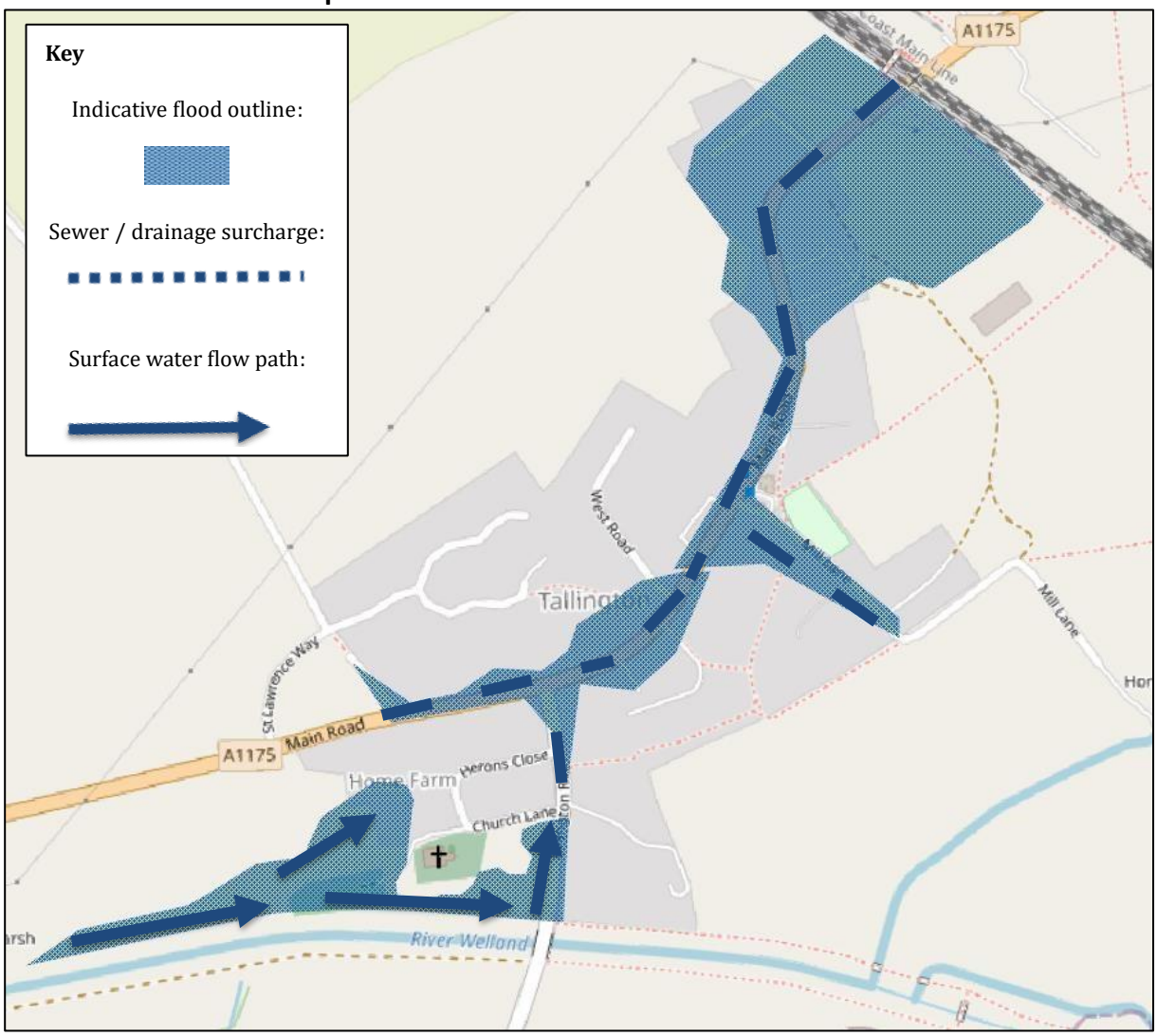


Figure 6 River Welland Level at Tallington gauging station

3.3 Flooding Mechanism / Causation

The flooding in Tallington resulted from numerous mechanisms interacting with one another to give cause to the flooding realised. Known flood mechanisms (Figure 6) included:

- **Surface water / overland flow**
- **Surcharging of drainage systems**
- **Groundwater infiltration**
- **Condition of watercourses**
- **Performance of flap valve of the River Welland**



(Figure 7 Indicative flood event outline as reported by residents)

Information provided by residents to the Parish Council suggests that a total of 24 properties were internally flooded throughout the village on Tallington Road, Church Lane, Main Road, Mill Lane and Searson Close. Most properties impacted were located directly adjacent to a highway / surface water sewer.

(*Photo 1 – Aerial view of flooding in Tallington at approximately 15:30 on the 04th of January 2024. Source: Environment Agency*)

Storm Henk Event Dates: 02/01/24 - 04/01/2024

03/01/2024: Residents reported noticing a rise in the river level down at the River Welland bridge. With the river levels rising throughout 03/01/2024 and the nearby village of Greatford already underwater. Tallington Parish Council reportedly attempted to contact a local Environment Agency officer to request support in the form of a pump at the Tallington Bridge. When contact could not be established they contacted the EA's national incident hot line. It is reported by Tallington Parish Council that an EA employee had visited the village in response to this call and identified that, at time of inspection, the flooding was thought not likely to be from main river assets.

04/01/2024: SKDC and LCC delivered sandbags which resulted in the distribution and deployment of over 1000 sandbags throughout 04/01/2024 by volunteers.

Based on discussions with residents and/or the Parish it was stated that the River Welland banks didn't breech/overtop. Surface water collected in the saturated fields, flowed down dry side of bank then flowed down road to junction at end and at Tennyson Cottage, right to Mill Lane.

Flooding occurred first just after midnight on 04/01/2024, in the south adjacent to the river then pushing up Tallington Road, towards the A1175 Main Road, the Mill Lane flooding homes

and businesses as artificial drainage systems became hydraulically locked and reached capacity / surcharged.

4 large pumps were deployed by Lincolnshire Fire and Rescue in the hours after 5pm on the 04/01/2024 which provided some relief and is credited with preventing further property flooding. Additionally an 8” pump was deployed by AW to drain Mill Lane and was in situ for 3 months.

(Photo 2 - 03/01/2024 Just north of the River Bridge looking west)

(Photo 3 - 07:20 04.01.2024 Mill Lane)

(Photo 4 - 08:28 04/01/2024 Junction of Main Road and Bainton Road) **08/01/2024:** Lincolnshire Fire and Rescue pumps were removed from the village by 1pm and replaced by an EA pump.

09/01/2024: Sandbags that had been put in place on the 16th of November 2024 by the EA to prevent any backflow from the river into the village were removed by the EA after a review the night before. It is reported that there was no visible back flow from the river despite the flap valve still being under water, indicating that the flap valve at that time appeared to be functional.

11/01/2024: The EA pump was removed on the morning of 11/01/2024. It is reported that the pump was not used and was removed to the Spalding depot with an assurance it could quickly be deployed again if needed.

16/01/2024: Groundwater levels throughout the village and in the surrounding fields was reported to be still at record levels. This continued to cause problems with toilets backing up on Searson Close and Main Road (after the Village Hall) to the Rail Crossing and even to some homes on St Lawrence Way. Owners on the [redacted] also having issues. Although the exact impact is unsubstantiated, given that the surface water culvert which flows under the East Coast mainline has a sand bottom, then it is likely that high groundwater levels would have elevated flows within the system, increasing the risk of overwhelming it and subsequent surcharge.

Anecdotal evidence suggests that there was potentially a pump failure with one of the two AW pumps at Searson Close pumping station. However, through further correspondence with AW it is understood that no malfunctions occurred, rather the system was overwhelmed. The overwhelming of the pumping station was likely, in part, as a result of actions taken by private residents to lift inspection covers, which subsequently allowed groundwater to flow into the foul network.

18/01/2024: Mill Lane flooded again with water coming up through the ground, sewer and surface water drains similar to events of early morning 04/01/2024, after only moderate to heavy rainfall.

In addition, rising water in front of the [redacted], at the [redacted] courtyard and at the end of Searson close with two homes affected. Many properties were left without use of their toilets.

Calls for assistance resulted in the LCC highways emergency team sending a tanker late afternoon and with the help of a highways team commenced taking the rising water from Mill Lane and later moved to the [redacted] chamber and then to road outside [redacted] from where it stayed till late after making numerous trips from village.

20/01/2024: The EA replaced the sandbags to block up the flap valve again due to the reported discovery of fish in the dyke parallel to the River Welland (509221E, 307797N), indicating a potential malfunction. Approximately, 45 sandbags were deployed to create a double skin barrier on the village side and this appears to have substantially reduced backflow from the river. It is reported that the Parish Council have agreed with the EA Ops Manager Field Teams that this is only a temporary measure, pending a review and appropriate improvements.

22/02/2024: [redacted] and [redacted] experienced further flooding with water reported to rise through the floors from the surface water drains.

The EA responded, returning with the trailer pump, and pumped from the dyke to the river for 3hrs.

LCC responded provided 2 gully tankers from Sleaford, working from 6pm and operating for 8 hours till 2 am and again throughout 23/02/2024 relocating water from the surface water drains into the river.

In addition to the above, the 2" Parish Council pump was deployed at the [redacted] / Searson Close on and off until 25/02/2024 pumping water to the waste land next to the East Coast mainline. An additional 3 pumps were brought in by residents to tackle the rising water coming up through the surface water and foul drains throughout the week.

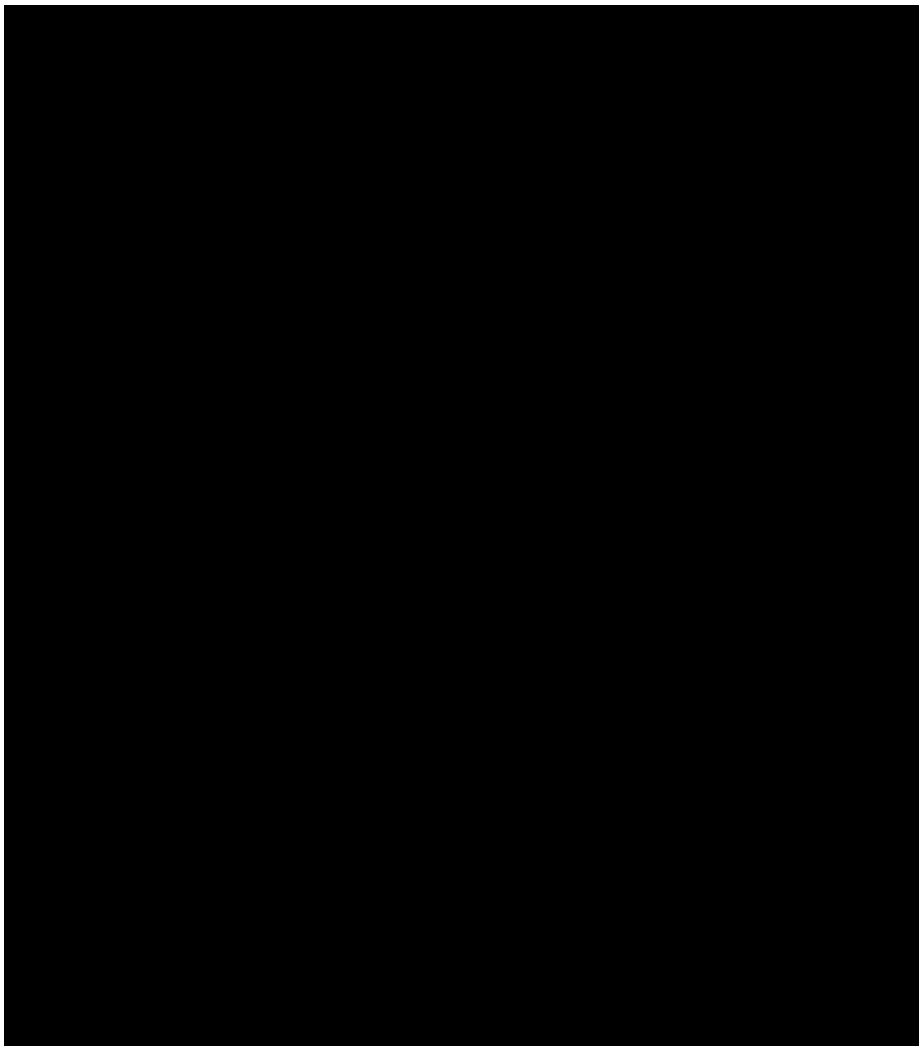


Photo 5 22/02/2024 Mill Lane

Photo 6 23/02/2024 Mill Lane

Photo 7 23/02/2024 Old Post Office

27/02/2024: Following a detailed appraisal by Anglian Water of their assets from Mill Lane towards the East coast mainline it was reported that there was at least one blockage somewhere between the chamber opposite the [redacted] to the Chamber across the crossing to just in front of the [redacted].

It was also reported that the stone topped surface water culvert from the [redacted] chamber to the open ditches to the east of the crossing were 80% blocked. AW spent 3 days/nights clearing this culvert with specialist tankers.

Photo 8 Tallington Surface Water Drain after cleansing

It has been reported that there is also long-term standing water issues at Casewick Lane to the west of the village that have regularly marooned residents when the dykes through the fields to the north of the village that go under the East Coast mainline and through the cement works a quarter of a mile north of the crossing exceed capacity. The railway culvert is also reported to be overgrown and in need of clearance as are the dykes in the cement works which are reported to be full of polystyrene, weeds, debris and plastic containers. It is reported that this is also restricting the fields to the North of the village draining as they should. SKDC officers are following up on the Casewick Lane drainage issues.

09/04/2024: During a site visit on 09/04/2024 an EA pump was situated on the bank of the river and the sandbags were still in-situ on the dyke side face of the flap valve. The flap valve was not visible as it was under the water level.

Photo 9 EA Trailer pump and flap valve asset adjacent to the bridge and sandbags deployed dyke side of flap valve

4. Issues Identified

4.1 Surface Water Drainage

During extreme events, surface water flows into open dykes and in some instances flow paths are restricted by either dyke capacity and/or culvert blockage.

Pumped solutions are utilised to currently deal with surface water from overland flow routes at the north of the river bank and from sewers in the [redacted] / Searson Close area.

4.2 River Welland Flap Valve (509221E , 307797N)

A temporary sandbag barrier solution has been implemented to prevent backflow from the river into the local dyke network via a flap valve on the main river, directly upstream of the River Welland bridge. This feature is important during times of flooding as it should allow surface water from the dyke network to drain to the river.

4.3 EA River Banks Asset Ref. 0553050510708L53A

The Parish Council have raised concerns around the works to the river banks adjacent to the church. It is believed by the Parish Council that the works undertaken by the EA in December 2023 to the gravel banks has led to an increased rate of seepage through the banks. Although it is worth noting that, to date, no reports or tangible evidence of water coming through and / or breaching the banks of the River Welland have been received.

4.4 Riparian Owned Surface Water Drainage Assets

The main surface water sewer that flows down Main Road east towards and under the railway line is an old culvert, which reaches capacity and surcharges. Anglian water have cleansed and investigated this system and recommended investment to refurbish this sewer and restore its full capacity.

4.5 Anglian Water assets / pumping station

Connectivity between the surface water and foul sewers and a potential malfunction at the pumping station may have impacted a number of properties .

4.6 Network Rail Surface Water Drainage Assets

It has been reported that the surface water sewer which flows under the East Coast Main Line rail crossing at Tallington was not free flowing. It is understood that between the 0303/03/2024 Network Rail's contractors CML carried out a scheduled 5-year culvert clean and condition survey, identifying a surface water sewer collapse/blockage. It is also understood that works to reinstate this section of surface water sewer has now been completed (including installation of new access chambers) by AW in collaboration with Network Rail and partner RMAs.

4.7 LCC Highway Drainage Assets

Highway gullies are reported to drain predominantly to a large surface water sewer that flows down Main Road. Gullies should be cleaned and inspected on a regular basis. When the surface water reaches capacity, gullies surcharge and are unable to drain water way.

5. Risk Management Authorities

In relation to this flood event, the following RMAs have relevant flood risk management functions:

- Anglian Water Services
- Environment Agency
- Lincolnshire County Council as a LLFA
- Lincolnshire County Council Highways Authority
- South Kesteven District Council

Network Rail has also been identified as a relevant stakeholder in this instance.

A record as to whether the above RMAs have exercised, or are proposing to exercise those functions in response to the flood shall be monitored through the existing Joint Lincolnshire Flood Risk and Water Management Partnership.

6. Recommendations for Consideration

6.1 Partnership funded project

It is recommended that AW, LCC, and SKDC consider supporting a partnership funded project to repair / refurbish the surface water sewer that runs along Main Street to Searsons Court and / or to explore what other opportunities may exist to reduce the risk of surface water flooding in Tallington.

6.2 Land Drainage

It is recommended that all local land drains and culverts are maintained to allow the free flow of water by their riparian owners and enforcement action is considered by LCC if necessary. It is understood that SKDC are already engaging with landowners to the northwest of Tallington.

6.3 Environment Agency Temporary Pump (NGR 509225E, 307802N)

A temporary pump has been provided by the Environment Agency, which was seen on site stationed at NGR 509225E , 307802N. During the flood event various other pumps were also deployed to alleviate flood waters.

The need for a permanent pump or alternative solution should be considered for investigation by the Environment Agency.

6.4 River Welland Flap Valve (NGR 509221E , 307797N)

A flap valve is situated on the northern bank of the River Welland, directly upstream (west) of the bridge and NGR (509221E , 307797N) . This asset is believed to be an EA asset, although no asset number has been confirmed, the ownership of this asset requires confirmation.

It is recommended that the ownership of the flap valve asset is confirmed by the EA and the asset owner then considers investigating the flap valve functionality and replace / improve the asset to ensure correct functionality is maintained.

Following a CCTV survey on the 14th of May 2024, it is understood that works to replace the existing flap valve with a more heavy duty variety are currently being considered by the EA.

6.5 Culvert under the A1175 / East Coast mainline

It is recommended that the relevant RMAs in collaboration with Network Rail establish ownership of the surface water culvert under the A1175 / East Coast mainline crossing.

6.6 Emergency Planning

It is recommended that the Tallington rapid response flood team, local flood wardens and Parish Council create an emergency flood response plan supported by LCC (as required) to support residents and reduce the impact of any future flood events.

6.7 Installation of catchment telemetry

LCC in collaboration with partner RMAs should consider the installation of telemetry at strategic locations in the catchment. This telemetry could be used to inform future feasibility studies as well as aid in emergency preparedness.

7. References

7.1 Anglian Water

Anglian Water Presentation to Tallington Parish Council, 10/07/2018.

7.2 S19-129

https://www.lincolnshire.gov.uk/flood-risk-management/flood-investigations

8. Appendices

8.1 Definitions

Culvert - Where a watercourse flows through a pipe, often underground.

Flap valve - Hinged valve placed on a pipe outlet into a river. Stays open during normal flow but closes when it is submerged, to prevent flow from backing up the pipe.

Foul sewer - Sewer which carries wastewater (e.g. from toilets, sinks, showers and kitchen appliances) to a sewage works for treatment.

Gully - Drainage pit covered by an open metal grate, located at the edge of a road. Drains rainwater from the road into either the surface water sewer or into nearby watercourses.

HYRAD - Real-time radar display system for weather.

Lead Local Flood Authority - County councils and unitary authorities which lead in managing local sources of flood risk (i.e. flooding from surface water, groundwater and ordinary watercourses)

Internal Drainage Boards - A public authority that managed water levels within an Internal Drainage District.

Main river - A watercourse shown as such on the main river map for England and includes any structure or appliance for controlling or regulating the flow of water into, in or out of the channel which—

a) is a structure or appliance situated in the channel or in any part of the banks of the channel; and

b) is not a structure or appliance vested in or controlled by an internal drainage board.

Ordinary Watercourse - A watercourse that does not form part of a main river.

Public sewer - Sewers owned and maintained by a Sewerage Company (e.g. Anglian Water). Are usually located in roads or public open spaces by may run through private gardens.

Riparian owner - The owner of land that is next to a watercourse or has a watercourse running through or beneath it.

Surface water sewer - Sewer which carries rainwater directly to a watercourse.

Telemetry - Instruments used to monitor the level of water in a watercourse.

Weir - A small dam structure built across a watercourse to raise the water level or to divert flow.

8.2 Anglian Water Presentation to Tallington Parish Council, 10/07/2018