Flood and Water Management Act 2010

Section 19 Flood Investigation Report

Immingham, North East Lincolnshire

28 June 2012

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Under Section 19 of the Flood and Water Management Act 2010 the relevant Lead Local Flood Authority is required to investigate flooding events where appropriate and publish a report of the results. The triggers for this being designated a Section 19 flood were:

- internal flooding of any property
- extensive flooding of the public highway and resultant disruption
- flooding of or access to critical or vulnerable infrastructure

Flood Locations – Immingham June 2012

Date of Event: 28 June 2012
Duration: Less than 2 hours
Date that Investigation commenced: 29 June 2012
Source of Flooding: Pluvial (intense rainfall event)

Location: Immingham, North East Lincolnshire

Affected Streets: Ash Tree Close, Bowman Way, Blair Walk, Brocklesby Avenue, Church Avenue, Civic shopping centre, Copse Close, Craik Hill Avenue, Highland Tarn, Hadleigh Road, Harlech Walk, Hollingsworth Close, Hume Brae, Manby Road, Maple Grove, Oaklands Road, Pelham Road, Robert Close, Sonya Crest, Stallingborough Road, Thornbury Road, Washdyke Lane, Woodlands Avenue, Worsley Road, (This list is only a representation of the worst flooding, other streets may also have been affected)

Recommendations and conclusions are in bold italics

A flash flood event took place on Thursday 28th June 2012 which affected only the town of Immingham in the Borough of North East Lincolnshire. Although the weather forecast had predicted periods of heavy rain, the intensity of the storm was of a sort not seen for many years. A figure of 70 millimetres of rainfall in 2 hours has been reported by the Environment Agency. The storm resulted in internal flooding to 5 properties and the library. A further 18 properties flooded through airbricks in 7 different locations and there was a serious threat of internal flooding to many more properties at several more locations. Furthermore one electricity sub-station was flooded which resulted in a local power outage and there was extensive flooding of the public highway throughout the town. A second storm happened on 6 July 2012. This event had been predicted by the MET office several days in advance but with the British climate the duration and intensity of rainfall can never be predicted exactly. As it happened the rainfall was quite prolonged but less intense so only localised external flooding occurred. Again it was Immingham that was predicted to suffer and action was taken in advance. 350 sand bags were distributed to those that suffered a week earlier and a high pressure jetvac unit, gully suction tanker and mobile jetting unit were all deployed from early in the morning.

Flooded Locations

Manby Road
Although reports of flooding were received, a site visit during the flood event found no serious flooding to report.

Ash Tree Close (15 Internal Flooding – Airbricks)
Residents reported surface water running off the road from surcharging gullies and manholes, down their drive ways towards the houses. 15 were internally flooded (airbricks) and one had flood water inside the conservatory and the garage.

A site investigation of the surface water sewers in Woodlands Avenue on 11 July showed that the manhole and pipework is partially silted up, and would benefit from being jetted.

ACTION:
The jetting work has been undertaken by Anglian Water, as the authority for maintaining the sewer. Residents will be encouraged through the community engagement as part of the Local Flood Risk Management Strategy to purchase and fit air brick covers.

Maple Grove & Oaklands Road
Most gardens in Maple Grove flooded on the Thursday. The water near the roundabout was about 500mm deep. Only one external garage at Maple Grove was flooded, but none of the houses were internally flooded.

Washdyke Lane (1 Severe Internal Flooding of sub-station)
Some localised flooding occurred; however no houses were thought to be under threat. One electricity sub-station did flood internally and as a result the road was closed by Police until the situation was made safe by electrical engineers.

ACTION:
The surface water sewer from Washdyke Lane flows along the Oasis Academy boundary and the rear of the Resource Centre through to North East Lindsey Drainage Board (NELDB) ditch near the end of Thornbury Road. The outfall was restricted by debris which had become trapped against the screen. The screen has been cleared and Anglian Water have agreed to inspect this monthly.

Woodlands Avenue/ Copse Close (3 Internal flooding – airbricks , 4 Severe Internal Flooding)
The main extent of the flooding was from the junction with Washdyke Lane to the west end of Woodlands Avenue. In total 7 properties were affected. The worst internal flooding (over the threshold) occurred at 2 properties in Woodlands Avenue. A week later the surface water public sewer that runs south from Woodlands Ave into Washdyke Lane was investigated and some jetting requirements were found.

ACTION:
Anglian Water were advised (13 July 2012) and surface water sewer jetting / CCTV recommended. A scheme to provide an overflow to the main sewer was completed by NELC during April 2013 with new gullies provided at the low spot within the street which outfalls to the ditch at the rear. NELC also cleaned out this ditch downstream to the NELDB watercourse and a section of undersized culvert is to be re-opened as a ditch. The riparian land owner will maintain responsibility for its maintenance in the future.

Photos showing flooding at Woodlands Avenue and opposite at Woodlands Avenue

Church Lane / Hollingsworth Close
At the junction of Church Lane and Hollingsworth Close extensive highway flooding occurred. Although no reports of internal flooding were received, air bricks may have been breached.

Photos showing flooding at Church Lane / Hollingsworth Close junction

Sonja Crest

The surface water sewers of Sonja Crest connect to the same system as Robert Close and are affected by the same restriction. Once the Robert Close scheme is complete, this should alleviate the problems in Sonya Crest.

Photos showing flooding at Sonya Crest

Robert Close

The cul-de-sac suffered extensive external flooding but there was no internal flooding. The cul-de-sac also suffered significant flooding in June 2007 with 4 properties reporting internal flooding. Anglian Water has acknowledged that the public sewer serving the Close is under capacity and confirmed that a scheme is currently being designed to increase capacity and remove the restriction to flows.

ACTION:

Anglian Water has completed a scheme to increase the capacity of the sewers through to Pelham Road which should solve the issues in Robert Close.

Photos showing flooding at Robert Close

ACTION:

The Robert Close scheme will have reduced flows in the existing system which will assist drainage in Sonja Crest.

Brocklesby Avenue (1 – Internal Flooding)
One property suffered internal flooding as a result of run-off from the adjacent as yet undeveloped field. This is a new housing estate still under construction. This was not as a result of sewer or drainage problems but the topography of the land.

Comment:
This is a land drainage problem that should be resolved when the adjacent land is developed and a positive drainage system is installed.

Stallingborough Road
Although several gardens suffered flooding, no internal flooding was reported. However one property was at serious risk of internal flooding. This property was internally flooded in 2007 and came close on this occasion. A road gully is located outside the driveway entrance and this is connected to an old piped ditch in the verge. Only 50m upstream this ditch remains open and takes water from the fields. Water was surcharging from the gully and running into the garden to make the problem worse.

ACTION:
Investigations found the piped ditch to be heavily silted. The pipework has been jetted and a CCTV survey carried out up to where it connects to the public sewer, which found several sections of damaged pipe. Jetting was carried out by NELC on Sunday 15 July 2012 and sections of the system lined during May 2013.

Hume Brae / Bowman Way
Flooding occurred at three main locations along Hume Brae; Mackenzie Place to James Way, and on the corner with Blossom Way. At these three locations the flooding was across the entire carriageway width and onto the footpaths. In some locations the flooding extended across the footpath into the front gardens. The electrical substation came close to being flooded but remained operational. The majority of the properties are set well back from the public highway and are generally higher. In June 2007 flood water flowed from Hume Brae though gardens and caused internal flooding at one property in Bowman Way, although the extent on this occasion was less severe. Investigations found that highway gullies at the upstream end of the system were surcharging out onto the public highway.

Investigations one week later found that the surface water sewers towards the upstream end (near James Way) were full of water. In the mid part of the system (Clarence Close) heavy silt and root ingress was found but at the manhole adjacent to the southern boundary of the Blossom Way playing field the sewer was clear.

ACTION:
The highway gullies have been repaired on Hume Brae.

Photos showing flooding at Hume Brae

Highland Tarn

A report was received on Friday 29 June, from a property in Highland Tarn about flooding the previous day. A site meeting was held with the resident. He explained that it is a persistent problem due to his garden being the low spot, and he often gets run off from the road going down his driveway. His external garage had flooded on 28 June and also previously in the June 2007 floods. He had photos of the event which were provided.

A level survey was carried out to see if the run off from the highway issue could be resolved. The survey showed no significant level problem, only slight low spots, and whilst the survey was being carried out it was raining and the water was getting away. The site is to be re-checked during heavy rainfall to see the extent of the problem with surface water run off from the highway.

ACTION:

This system outfalls to an NELDB ditch at the rear of Meakin Court. The outfall was restricted by debris which had become trapped against the screen. The screen has been cleared and AWS have cut off the lower portion of the screen to allow debris through. This will also be inspected monthly and access steps to the screen have also been erected.

Photos showing flooding at Highland Tarn / Hamish Walk junction

ACTIONS:

Anglian Water were advised (13 July 2012) and surface water sewer jetting was recommended.

At the rear of 13 – 27 Highland Tarn, root ingress problems in the surface water public sewer were found by the Council drainage team. AWS carried out some investigatory works and root cutting and they have exposed two buried manholes.

Craik Hill Avenue

Flooding across the entire carriageway and both footpaths, although no internal flooding occurred. A subsequent investigation found that the public sewer at the head of the system in Craik Hill Avenue was partially blocked with bricks and part of a manhole cover. The manhole cover had recently been replaced. There was also siltation build ups in the public sewer.

ACTIONS:

Anglian Water have been advised to clean the manhole out and carry out sewer jetting as debris is likely to have built up in the pipework.

A broken cover and debris was found inside an AWS manhole, causing a blockage. This has now been cleared.

Photos showing flooding at Craik Hill Avenue

Library, Civic Centre and Kennedy Way Shopping Centre (1 Internal Flooding)

The roundabout adjacent to the Civic Centre was completely impassable. The following day, a site visit to the Civic Centre found that there was internal flooding to the library, and a small amount of water getting into the doorway at the civic.

ACTION:

The Civic Centre will be partially re-developed during 2014 with the construction of a new Tesco supermarket and a B & M store. As part of the drainage strategy for the proposed development, the outflow from the site has been reduced to less than 30% of the current discharge rate by the provision of vortex flow controls. As the reduced outflow would lead to on-site flooding, cellular storage has been proposed to accommodate a storm with an annual probability of 1% (1 in 100 chance) including an allowance for climate change.

Pelham Road

Although several front gardens suffered serious flooding; no internal flooding was reported from houses, although sand bags were deployed. A public sewer manhole in the verge outside no. 250 was found to have 300mm of silt inside and the pipe was not visible. This was reported to Anglian Water for sewer jetting. A Jet/vac was used to clear this chamber and the only incoming pipework was found to be a road gully on Pelham Road.

Internal flooding did occur at Canon Peter Hall C of E Primary School.

ACTION:

Investigations are on-going and flood mitigation measures will be proposed. These are likely to entail an upgrade of the pipework with a new overflow arrangement and funding will be sought over the next 2 – 3 years.

Worsley Road

Flooding occurred at two main locations along Worsley Road, and at the junction with Sackville Road. At these locations the flooding was across the entire carriageway width and onto the footpaths. In some locations the flooding extended across the footpath into the front gardens. The properties are close to the public highway and are generally only 200mm higher. Traffic had to be slowed down by the police as waves created an internal flood risk. Initial investigations were inconclusive, so NELC will undertake a CCTV survey of the highway gully leads to establish where they outfall to.

ACTION:

CCTV results showed that the sewers through to the Ings Lane track were silted. This was reported to Anglian Water. NELC to check the sewers are cleared.

Hadleigh Road

Various locations along Hadleigh Road were flooded, but no internal flooding was reported.

Thornbury Road

Four properties requested sand bags, although none reported internal flooding.

Blair Walk

A report of flooding was received but a site visit found no flooding.

Summary of actions taken

North East Lincolnshire Council carried out the following mitigation works:

- Installation of an overflow from the surface water public sewer in Woodlands Avenue.
- Installation of drainage from the lowest spot in Woodlands Avenue
- Repairs and lining of the surface water drain serving several properties at Stallingborough Road.
- Cleaning of land drainage systems serving the Woodlands Avenue

There will be further engagement with those residents in flood risk areas on the issue of property level flood resilience covering issues like flood barriers at air bricks, door openings, external gullies and service conduits etc.

Anglian Water have carried out the works outlined within this report including the sewer relief scheme serving Robert Close and Sonja Crest. A follow up inspection identified any outstanding maintenance requirements and a letter was sent to Anglian Water on 22 May 2013 to highlight these and request that they be attended to. An e-mail in response confirmed that all outstanding actions were planned to be completed by the end of September 2013 which has now happened.

In the longer term, North East Lincolnshire Council is compiling funding bids for improvements to the land drainage systems serving North Immingham and the surface water system serving Manby Road and Pelham Road. Both projects will be subject to a partnership approach; North Immingham with North East Lindsey Drainage Board and Manby Road/Pelham Road with Anglian Water.