



# Flood Investigation Report

Report Title:

Pix Brook

Stotfold

Report Reference:

CB/FLO/15/09003

## Report status

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## Abbreviations

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AWS – Anglian Water Services

BLEVEC – Bedfordshire Local Emergency Volunteers Executive Committee

CBC – Central Bedfordshire Council

LLFA – Lead Local Flood Authority

IDB – Internal Drainage Board

The Act – The Flood and Water Management Act 2010

## Flood Investigation Report

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### 1. Purpose of the report

- 1.1. Central Bedfordshire Council (CBC) as the Lead Local Flood Authority (LLFA) for its area has a responsibility to record and report flood incidents as detailed within Section 19 of the Flood and Water Management Act 2010 (the Act).



Section 19 of the Act states:

(1) On becoming aware of a flood in its area, a lead local flood authority must, to the extent that it considers it necessary or appropriate, investigate—

- a) which Risk Management Authorities have relevant flood risk management functions, and
- b) whether each of those Risk Management Authorities has exercised, or is proposing to exercise, those functions in response to the flood.

(2) Where an authority carries out an investigation under subsection (1) it must—

- a) publish the results of its investigation, and
- b) notify any relevant risk management authorities.

- 1.2. Central Bedfordshire Council will, on becoming aware of a flood in its area, assess the necessity and appropriateness of initiating a formal flood investigation.
- 1.3. If initiated, Central Bedfordshire Council will investigate the role and response of the Risk Management Authorities within Central Bedfordshire to the flood event (these are the Environment Agency, Highway Authorities, Water and Sewerage Undertakers, Internal Drainage Boards).
- 1.4. As identified in its Local Flood Risk Management Strategy (adopted 2014), Central Bedfordshire Council will formally investigate flooding where there is a risk to life or serious injury, internal flooding of 5 or more residential or commercial properties in one event, re-occurring internal flooding to less than 5 properties, and flooding impacting on critical services or designated sites.
- 1.5. After a formal flood investigation has been carried out Central Bedfordshire Council will publish a summary of the results of its investigation and notify any relevant Risk Management Authorities and local stakeholders.

## **2. Executive summary**

- 2.1. CBC has completed this Flood Investigation Report under our statutory duties as the Lead Local Flood Authority (LLFA).
- 2.2. It was deemed necessary to complete a formal investigation into the flood incident at Pix Brook, Stotfold that occurred on 4<sup>th</sup> July 2015 as:
  - More than 5 properties were reported to have flooded internally.
  - Reports indicate flooding of a similar nature has occurred at the location in the past.
- 2.3. This met Central Bedfordshire Councils (CBC) threshold for triggering the undertaking of a formal flood investigation.
- 2.4. This report provides a concise review of the rights and responsibilities of all Risk Management Authorities relevant to the event, and an outline of their past or proposed actions, if any. It also makes recommendations that should be considered by all relevant parties to manage the risk of repeat flooding in the future.
- 2.5. Although not a requirement of a formal investigation under Section 19 of the Act, we will also review the responsibilities and steps that can be taken by the wider community, including the Town Council and riparian owners, to better manage their risk of flooding in the future.
- 2.6. The overall cause of flooding on the 4<sup>th</sup> July at Pix Brook was most likely a result of extreme rainfall within a short duration, insufficient capacity available within the drainage system, and obstructions to flow resulting from a high volume of debris entering the channel of the Pix Brook.
- 2.7. Section 8 of this report provides our recommendations, in line with the requirements of the Act, to mitigate the risk of flooding as far as possible in the future.
- 2.8. Our main conclusion is that Risk Management Authorities, and other groups as detailed in this report, continue to work together and share information. The local community should be engaged following the outcomes of this report and its recommendations to enhance their resilience.

## **3. Location of flooding incident**

- 3.1. Stotfold is located in the east of Central Bedfordshire, close to the A1 and A507. The Pix Brook flows in a northerly direction towards and through the village of Stotfold and meets the River Hiz north of Arlesey.
- 3.2. The area of flooding is reported to be at the junction of Brook Street and Coppice Mead.
- 3.3. Pix Brook is culverted beneath Brook Street and further downstream the brook passes beneath Hitchin Road.

- 3.4. The Bedfordshire and River Ivel Internal Drainage Board (IDB) manage the Pix Brook.

#### **4. Flood incident as recorded**

- 4.1. On 4 July 2015 the CBC Duty First Contact Officer received a call at approx. 2am regarding flooding at Pix Brook, Stotfold.
- 4.2. The Fire and Rescue Services were reported to be on site at Brook Street/Coppice Mead and providing assistance.
- 4.3. Debris was reported by the Fire and Rescue Service to be blocking the Pix Brook and causing water to enter residential properties.
- 4.4. Two properties were reported to have had electricity isolated, the National Grid were contacted and subsequently arrived on site.
- 4.5. The Fire and Rescue Services deployed aqua sacs to limit flood water entering properties, at this stage 12 properties were reported to have been affected.
- 4.6. The report was escalated to CBCs Silver Commander and the Bedfordshire Local Emergency Volunteers Executive Committee (BLEVEC) was informed.
- 4.7. The Red Cross also attended to provide assistance to vulnerable residents.
- 4.8. The local councillor was also on site during the event.
- 4.9. A grab lorry was deployed from Dunstable by the local Highways Authority to clear debris, and arrived on site approx. 6.30am. The debris was cleared and following this the Brook was reported to be flowing again. Concern was expressed at the time by the Fire and Rescue Service that the situation would arise again due to local factors.
- 4.10. Approx. 7.45am it was reported to the CBC Duty First Officer that there were concerns regarding an upstream sluice gate being forced open (located at the standalone reservoir and control gates). The Environment Agency incorrectly advised that this structure was under Local Authority control (it is managed by the IDB). Highways were contacted by the Duty First Contact Officer for advice, no response was received.
- 4.11. Between approx. 8.45am and 1.00pm IDB operatives were on site continuing to clear debris from the Brook Street trash screen and Valerian Way trash screen. The IDB also removed the Brook Street trash screen under instruction from incident police at the scene.
- 4.12. On 5 July Highways responded to requests to remove debris from the bank of the brook which had been left following its removal from within the channel. Whilst debris was reported to contain large amounts of vegetation, timber and other materials were also removed.

## **5. Summary of desk top study, site investigation and information received**

- 5.1. The River Ivel catchment is a fast responding catchment meaning it is vulnerable to flash flooding following a significant rainfall event.
- 5.2. Environment Agency data of estimated average from sites at Ashbrook and Letchworth indicates 25mm rain fell over 90 minutes, which is deemed significant rainfall.
- 5.3. The Environment Agency's Flood Map for Surface Water shows the area of Brook Street, Coppice Mead and Hazel Grove as areas susceptible to flood risk.
- 5.4. A walk over of the Pix Brook was undertaken by CBC Flood Risk Officers and the CBC Ecologist. It was determined the majority of debris originated from the mixed broadleaf plantation woodland to the south of the flood location. The woodland has a heavy understory of nettles but little else, meaning that any fallen deadwood can be readily washed in to the brook as there is nothing to hold it back.
- 5.5. The watercress plant is quick growing in the spring, compounded by the nutrients from the sewage treatment works to the south of Stotfold, and therefore was particularly problematic in July when the flood event occurred. It tends to grow more profusely in open shallow water, and therefore exacerbated the problem from the wooded areas along the Pix Brook where the woody debris arises. The watercress plant's floating root system also means it will be easily mobilised in summer floods, whereas, it will likely be less of a problem in the winter months when it has died back.
- 5.6. Given the intensity of the rain fall event on 4 July, a significant quantity of debris was conveyed along the Pix Brook to the IDB gantry and debris prevention grid (trash screen) during the event on 4 July 2015.
- 5.7. The screen was installed in 2015, following stakeholder engagement, to prevent debris entering and blocking the twin culvert and also to enable safer access for operatives to perform maintenance and clearing.
- 5.8. There are 2 surface water outfalls from the South Stotfold development which flow directly into the Brook upstream of the flood location. Residents believe that these may exacerbate flooding along the Brook, however new development close to the flood location was found to have adequate mitigation measures to manage increases in surface water. These outfalls are currently under an adoption agreement between the developer and Anglian Water Services (AWS).  
work with partners to support measures at Stotfold which would better prepare the community for an emergency such as flooding (subject to available funding and prioritisation of projects).

- 5.9. AWS operate the Letchworth Sewage Treatment works to the south, which has a base flow of treated waste water into Pix Brook and has storm water tanks that operate in times of flood to store excess sewer water until it is treated.
- 5.10. Following site visits by CBC Officers, CBC launched a questionnaire to residents in the affected area to identify the true nature and extent of the flood event. 14 responses were received at the time this report was drafted, the majority of which indicated flooding had been experienced in the past and had been affected internally or externally on the 4<sup>th</sup> July 2015. Flood water was also indicated to have been a problem on the 24<sup>th</sup> July 2015 and 13<sup>th</sup> August 2015. Despite heavy rainfall no internal flooding was reported on these subsequent dates, however, on 24<sup>th</sup> July 2015 debris reportedly blocked the twin-culvert approx. 250m downstream causing surface water to accumulate on Brook Street/Coppice Mead.
- 5.11. In the past the IDB have undertaken measures to manage the risk at Pix Brook. In 2015 the IDB co-ordinated a project to reduce the possibility of the Brook Street twin-culvert bridge blocking and to provide a safe environment to remove debris by their operatives. The design ensured that there was no loss of discharge capacity through the culvert bridge.
- 5.12. the IDB have informed CBC that they perform annual watercourse maintenance of the Pix Brook and monthly checks on known 'flood-hots-spots' such as the Brook Street twin-culverts. The date of the last maintenance undertaken is unknown to CBC The IDB is reportedly constrained to hand work in some reaches along the Pix Brook due to the lack of access from trees and hedges and deep channels.
- 5.13. The IDB have undertaken a technical report into the flood event to identify possible remediation actions. The report will not be made public until the current insurance claim issues are resolved.
- 5.14. A meeting was held with the MP, CBC Councillors, IDB, Town Council and local residents on 4<sup>th</sup> August 2015 to discuss the flood event and to establish what the response to this would be, attendees were informed about the status of the IDB and CBC reports.

## **6. Summary of impacts**

- 6.1. Information relating to the impacts experienced at the flood location are detailed below.

**Risk to life:** Yes

**Internal Flooding:** Yes

**External Flooding (gardens / grounds):** Yes

**Critical infrastructure:** No



**Obstruction of Access:** Yes (estimated at 24hours)

**Repeat event:** Yes

## **7. Investigation findings**

### **7.1. What caused the flooding**

- 7.1.1. The flood event on 4<sup>th</sup> July 2015 occurred due to rainfall which resulted in high flows within the Pix Brook coupled with debris being conveyed to the trash screen at the road junction of Brook Street, blocking the flow of water into the highway culvert and overtopping the banks of the brook.
- 7.1.2. The dominant weed obstructing the trash screen has been confirmed as watercress. It grows rapidly in springtime in shallow slow flowing water, has an adventitious root system, and is easily dislodged in higher flows.
- 7.1.3. The trash screen is known to have been designed by a competent consultant to prevent debris from entering the twin-culvert bridge. The spacing between the bars of the screen meets national guidance standards prescribed by the EA and is smaller than the width of the culvert. Debris is intended to accumulate on the screen to prevent inaccessible blockages within the culvert and ensure maintenance needs are visible when debris starts to accumulate. In high flows, debris will accumulate at a faster rate causing water to back up the channel.
- 7.1.4. The significant rainfall and consequent high flows in the Pix Brook at the location of the screen caused a rapid build-up of debris which could not be removed quickly enough. The trash screen became overwhelmed and blocked, causing water levels upstream to rise rapidly and flood the local area.

### **7.2. Who has responsibilities to manage the cause(s) of the flood?**

- 7.2.1. With reference to the above factors, responsibilities to manage the causes of the flood are listed below.
- 7.2.2. The Internal Drainage Board;
- The IDB is a designated Risk Management Authority under Part 1 of the Flood and Water Management Act 2010.
  - The IDB has permissive powers to maintain watercourses within their internal drainage district (IDD), under the Land Drainage Act 1991, and therefore has management responsibility for the Pix Brook.
- 7.2.3. Central Bedfordshire Council;
- The Lead Local Flood Risk Authority is a designated Risk Management Authority under Part 1 of the Flood and Water Management Act 2010. It has responsibilities to assess reports of flooding; to evaluate significance of drainage assets and structures within its area; and build partnerships to





ensure effective working between authorities that have control over flood risks.

- The local Highway Authority is a designated Risk Management Authority under Part 1 of the Flood and Water Management Act 2010. It is an asset owner for designated highway bridges and road drainage out-falling into the reach of the Pix Brook.
- Emergency Planning have a responsibility to respond to and record the extent of the event.

#### 7.2.4. The Environment Agency;

- The Environment Agency is a designated Risk Management Authority under Part 1 of the Flood and Water Management Act 2010.
- It responsibilities for managing the flood risk from main rivers, the sea and reservoirs, and to issue flood warnings. It may maintain a main river using permissive powers, the Pix Brook is not a main river.

#### 7.2.5. Water and Sewerage Companies;

- Anglian Water Services is a designated Risk Management Authority under Part 1 of the Flood and Water Management Act 2010.
- It is the statutory sewerage undertaker with responsibility for the public sewer network at the Pix Brook location, under the Water Industries Act 1991.
- There are 2 surface water outfalls from the land south of Stotfold development which AWS are in the process of adopting.

#### 7.2.6. Riparian Owners;

- Whilst not a Risk Management Authority named under the Flood and Water Management Act 2010, any person who owns land adjacent to the Pix Brook is considered a riparian owner.
- Riparian owners are those who own land or property that adjoins a watercourse, they have rights and responsibilities relating to the management of that watercourse, including: to receive and pass on a flow of water in its natural state, without undue interference in quantity or quality; to maintain the bed and banks of an open watercourse and any trees/shrubs growing on the banks; clearing of any debris even if it did not originate from their land; keeping any structures that they own clear of debris.
- If they do not carry out their responsibilities, they may face action under the Land Drainage Act 1991.

### 7.3. **What was the response of the relevant authorities in relation to the cause of the flood?**

7.3.1. The responses of the organisations to the flood event are listed below.

7.3.2. The Internal Drainage Board;



- Attended the incident on 4<sup>th</sup> July to assist in clearing the trash screens at Brook Street, Valerian Way and other structures.
- Removed the trash screen following instructions from the police.
- Undertook a report assessing the causes, scale and contributing factors to the flood event, outlining possible options for remediation.
- The IDB will review the feasibility of the options they have already identified, as well as any recommendations by this Section 19 report.

#### 7.3.3. Central Bedfordshire Council;

- In its role as the Lead Local Flood Authority, CBC co-ordinated a Section 19 Flood Investigation and made recommendations for managing the future risk of flooding. This has been informed by community engagement and post-flood site appraisal.

#### 7.3.4. The Environment Agency;

- Provided assistance to residents during the emergency via the floodline service, however reportedly advised that structures were under the jurisdiction of CBC and not the IDB.

#### 7.3.5. Riparian Owners;

- Alerted relevant authorities, made efforts to protect their own properties from flooding, and provided information to authorities following the event.

## 8. Recommendations

- 8.1. The recommendations highlighted below are referenced against the factors detailed above and should not be considered in isolation.
- 8.2. It must be noted that although CBC has a duty under the Flood and Water management Act 2010 to suggest possible causes of flooding at the Pix Brook and to make recommendations for the relevant authorities to endeavour to mitigate flood risk as far as possible, the Act does not provide CBC with the mandate or funding to tackle all identified causes of flooding.
- 8.3. The method for prioritising works on or near watercourses will vary for each Risk Management Authority involved, dependant on factors such as resources available, operational area, and interpretation of flood risk. It is therefore important that all Risk Management Authorities are open and honest with the community about what actions will or won't be taken, and why.
- 8.4. Provided the consequences of flooding at Pix Brook continue to be recorded, if and when resources become available, the evidence base may provide justification for a range measures.



- 8.5. Partnership working across all agencies will be key to delivering this work, in order to avoid duplication and ensure best use of resource, including viewing the local community as a key partner.
- 8.6. For recommendations see overleaf.



Authority/ Stakeholder	Recommended Actions to manage the risk of flooding in the future
CBC: Emergency Planning	Emergency Planning could work with partners to support measures at Stotfold which would empower the local community to increase their resilience against flooding (subject to available funding and prioritisation).
CBC: Lead Local Flood Authority	<p>Work with the IDB and other relevant stakeholders to ensure a package of agreed improvement measures are implemented to manage flood risk.</p> <p>Continue to keep a record of all reported flood incidents and any significant flood risk assets within the area.</p> <p>To continue to work with residents and riparian owners to make them aware of their responsibilities and to improve understanding of appropriate measures they could take to protect their property.</p> <p>To work with partners to support measures at Stotfold which would empower the local community to increase their resilience against flooding (subject to available funding and prioritisation).</p>
CBC: Highways Authority	CBC Highways to consider contingency measures for the possible debris blocking of the culvert at Pix Brook and any other relevant assets, this should include evaluating the benefits of using a clear span bridge in the location of the culvert.
CBC: Local Planning Authority	To note the findings and summaries of this report when allocating planning permissions in the future within the area of Stotfold and endeavour to ensure surface water is managed sustainably.
Stotfold Town Council	<p>The Town Council should continue to engage with the wider community and support the creation of a community response group, and consider approaching locally organised groups in order to encourage local action to improve resilience and to raise awareness of riparian owners and their responsibilities. This could, for example, include hosting a campaign to reduce debris and fly tipping affecting the Pix Brook and creation of a Local Flood Action Plan.</p> <p>Any action taken by the Town Council should be informed by this report and advice from the IDB and CBC to ensure any measures taken are safe and legal.</p>



Riparian owners	<p>Riparian owners must be aware of their responsibilities to maintain the beds and banks of the Pix Brook adjacent to their property, and to keep this clear of obstructions such as vegetation and any other debris. This may include cutting back vegetation, removing blockages, ensuring that rubbish and garden waste is not stored along the banks of the watercourse where it can fall in were the water level to rise.</p> <p>Riparian Owners must not build a new structure (for example a footbridge) that encroaches upon the watercourse or that alters the flow of water without first obtaining permission from the IDB. The Land Drainage Act 1991 Section 23 prohibits any person from causing an obstruction to flow in any ordinary watercourse. This is applicable to both permanent and temporary works. Applicants for Consent must also comply with the IDB's Byelaws, which protect the water corridor to ensure the watercourse is accessible for inspection and maintenance. Riparian owners must not carry out work without consent, if they do the IDB may reclaim from them the cost of removing, altering or pulling down the works.</p>
Land owner	<p>All residents likely to be at risk of flooding should consider measures to protect their own premises through provision of appropriate flood defences. Actions taken can include storing and laying sandbags and moving valuable items to higher ground, or more permanent measures such as installing floodgates, raising electrical sockets, and fitting non-return valves on waste pipes. They must also keep any debris clear of the watercourse or culvert, even if it this has not originated from their land.</p> <p>Community resilience is important in providing information and support to each other if flooding is anticipated. A community response group may be created to manage the risk of ongoing flood issues at the Pix Brook. Advice should be sought from the IDB and CBC to ensure any measures taken are safe and legal.</p> <p>Anyone affected by flooding should try to document as much information about the incident as possible. As the Pix Brook is classed an IDB watercourse, residents are advised to report incidents to the IDB on 01234 767995. CBC should also be contacted and will make a record of the details provided. In a flood emergency, residents are advised to contact the Fire and Rescue Service.</p>
IDB	<p>Under the IDB's permissive powers it could:</p> <ul style="list-style-type: none"> <li>a) Liaise with land owners of the conservation woodland area adjacent to the Pix Brook, which has been identified as a prime source of debris including water cress. This should endeavour to establish a maintenance procedure to reduce wood branches on the ground in the immediate vicinity of the watercourse, and to establish a process to monitor and control watercress growth in this area. They should also review additional land owners that</li> </ul>



	<p>could be engaged, such as the AWS sewerage works and adjacent farmlands.</p> <p>b) Review the current inspection and maintenance regime to:</p> <ul style="list-style-type: none"> <li>• Manage debris sources, as identified in this report, along the corridor of the Pix Brook between the conservation wood and A507 road bridge.</li> <li>• Reduce possible debris sources along the back channel that runs parallel with the gardens of Brook Street.</li> </ul> <p>c) Consider the planting of a series of baffle hedges along the line of the surface water discharge drain from the outfall structure to the main Pix Brook channel to trap debris on the raised flood channel.</p> <p>d) If necessary remove unconsented tree planting (and 3rd party structures) and increase vegetation maintenance to an appropriate standard, e.g. to reduce fallen debris to work with partners to support measures at Stotfold which would better prepare the community for an emergency such as flooding (subject to available funding and prioritisation of projects). prevent this from accumulating and entering the watercourse during flood flows.</p> <p>e) Consider further trials as proposed by options within the IDB's report, e.g. floating trash booms at the A507 road bridge.</p> <p>f) Any proposed trash screen along the Pix Brook or alternative locations, must be shown to follow the Environment Agency Trash and Security Screen Guidance 2009, and should recognise and make allowances for the significant debris load of the Pix Brook system. Any maintenance regimes for these structures must also take into account the debris loading in the Pix Brook.</p> <p>g) Advise CBC Highway Authority of compromises in asset performance of the culvert bridges during flood events.</p> <p>h) Survey the Brook Street highway bridge for accumulated sediment, which could reduce the discharge capacity of this CBC asset.</p> <p>i) Review the refurbishment works to the flood gates at the Pix Brook Reservoir and consider the need for monitoring, such as remote water-level monitoring using telemetry, to give early indication of a developing problem (it should be noted that although this will not remove the flood risk, it would help to manage the response should a blockage occur).</p> <p>j) To work with partners to support measures at Stotfold which would empower the local community to increase their resilience against flooding (subject to available funding and prioritisation).</p>
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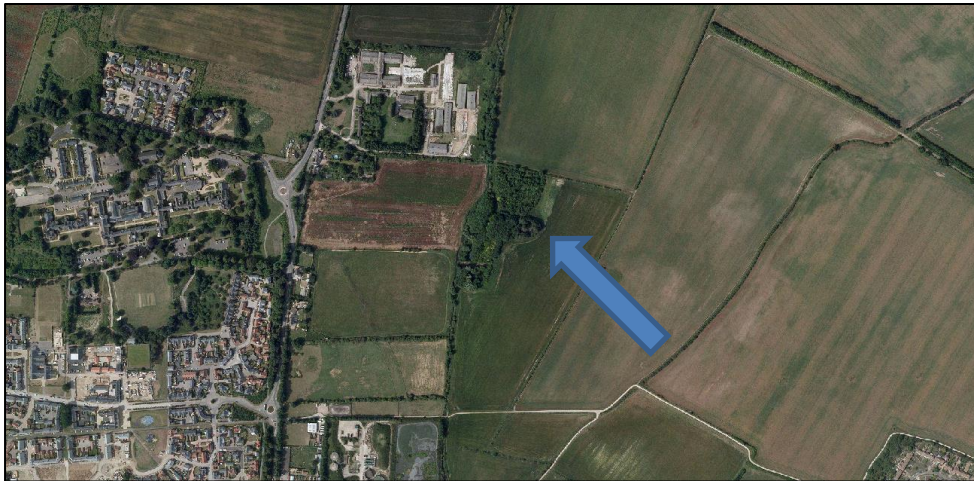


## Appendix 1

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### Ecological Report

Having walked the section of the Pix Brook from the footpath by the sewage works north to the A507 I am of the opinion that the majority of the debris at Brook Street came from the area of woodland as indicated below.



This is a piece of mixed broadleaf plantation woodland which has a heavy understory of nettles but little else. This means that any fallen deadwood can be readily washed in to the brook as there is nothing to hold it back as the following photo shows.



You can see that the woodland has been inundated as water has washed down the hill from Norton and where it has burst its banks, carrying debris back into the flow.





Photograph taken approx. 200m North of the footbridge and shows how high flows were experienced hence inundating the woodland further downstream.



Having looked again at the 'weed' that we saw I think it was watercress. Whilst the woodland did contain large swathes of hogweed (not of the Giant variety) I don't believe it to be this. The following photo shows a small patch of watercress left up a small tributary and this looks just like the weed pulled out at Brook Street so it could have been there was a larger stand of it in this woodland that has become dislodged and flowed downstream.





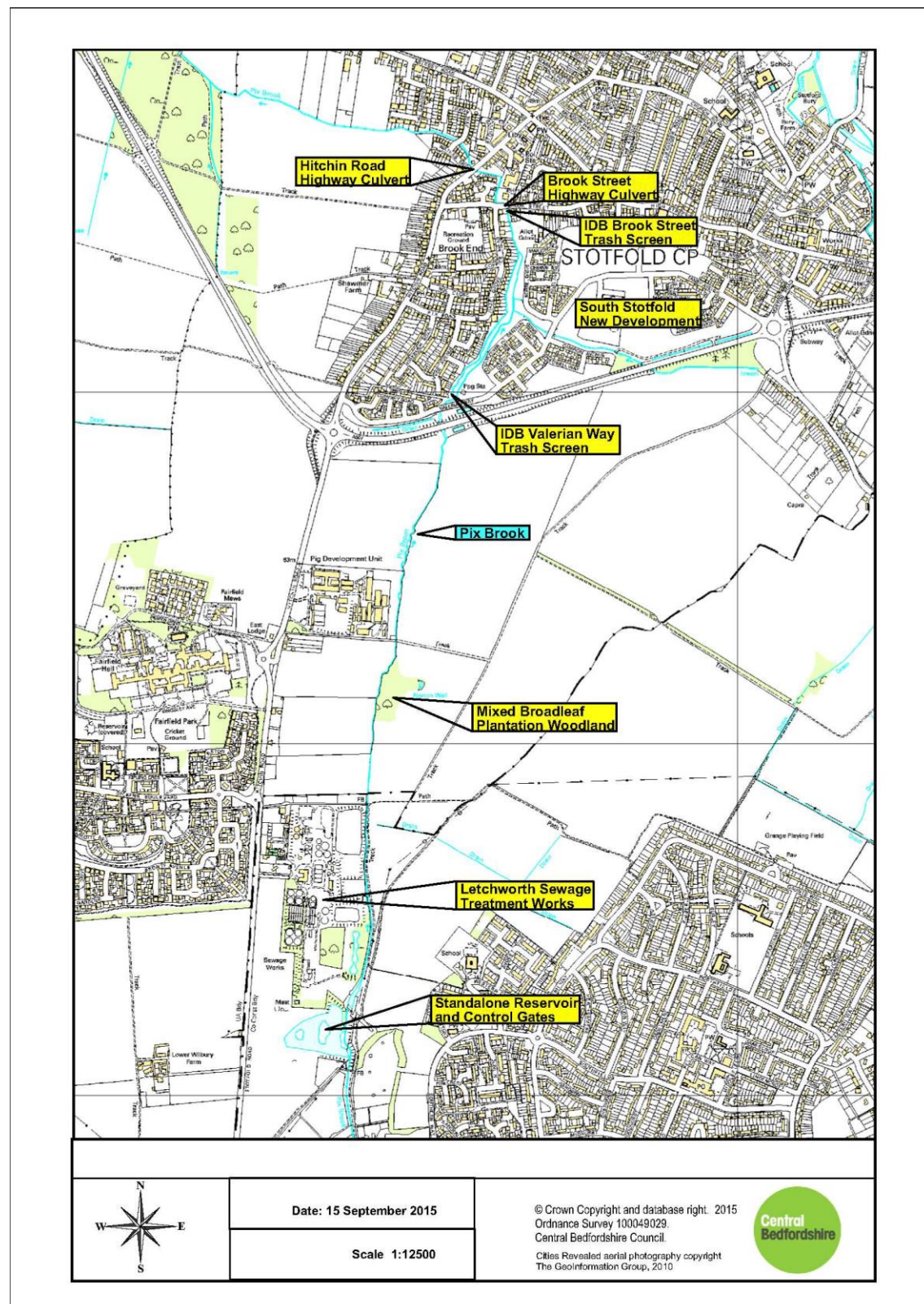
Following our site visit today it is clear that the properties on Coppice Mead are considerably lower than the land on the East of the Brook. As seen today, there is an area of open space that should act as a 'floodplain' further upstream but the real problem is where the two channels of the Pix re-converge. Here the Eastern bank is much higher so doesn't offer any solution to raised water levels which will back up along the old channel and into the properties of Coppice Mead.

Vegetation is currently growing in the Pix channel in South Stotfold and this is primarily *Phragmites* which is fairly resilient to strong flowing water. The banks are also well vegetated which helps to restrict the flow of debris into the channel.

By allowing more water to flow into the lower levels of the floodplain water retention will be increased but interception of debris needs to occur before the two channels meet and the surrounding land levels increase.

## Appendix 2

### Annotated Map of flood event (4<sup>th</sup> July 2015)





## Appendix 3

### Summary of questionnaire returns.

This table represents the main issues and has been edited to remove address information.

1. Date of latest flooding	2. What was affected	3. Approximate depth	4. Additional details
17/07/2015	Garage or Outhouse, Garden	n/a	On 04/07/2015 the flood was caused by debris bridge.
10/07/2015	Other - Car	The water did not get into my house but it was in my car. It completely flooded the foot wells. I had to hire a machine to suck the water out. Now it has dampness and smells very badly.	The river at the bottom of my stream was blocked/had too much water. This was not helped by the steel Bridge that has been installed.
04/07/2015	House (internal living areas), Garage or outhouse Garden	A couple of cms through the back door into the dining room. But with neighbours helping we mopped rapidly for a couple of house to contain it to the dining too, and it went nowhere else.	We think the trash screen installed recently in front of the bridge prevented small debris and vegetation from the stream from flowing steadily through the bridge. The huge amount of debris meant the water could not flow freely and the water build up came into and around our house.
15/07/2015	n/a	n/a	n/a
04/07/2015	n/a	n/a	Cause was wholly and exclusively due to the fundamentally flawed bridge filter in the Brook Street. Combs acted as a Dam when trees and other debris was washed into it and trapped. I would say remove it.
04/07/2015	Other - Car	n/a	Overflow of the brook. Heavy rain.
04/07/2015, 16-17/07/2015	House (internal living areas), Garage or outhouse, Garden	House 3 inches. Garage 9 inches. Hobbies room 5 inches. Bick shed 6 inches.	4th new trash strainer at brook street bridge blocked by debris caused overflow of pixy directly into back garden and also down brook street into coppice mead. 16/17th heavy rainfall caused overflow directly into back gardens.
04/07/2015, 16/07/2015	Other - Access to/from house	n/a	04/07/2015 - blocked trash screen installed by RIDB alongside Brook street culvert. Flood plain was ineffective and inlet screen to old pixy

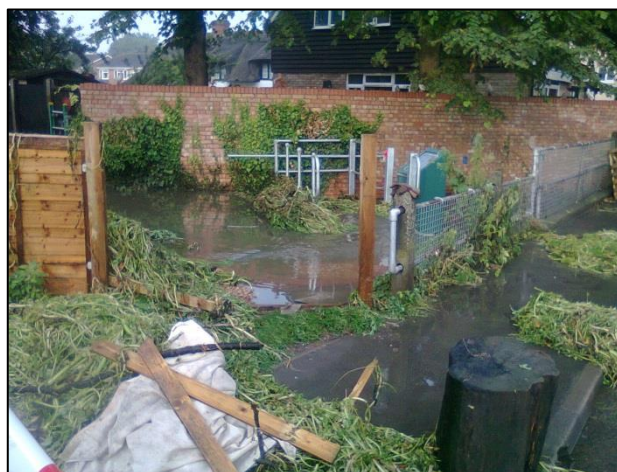
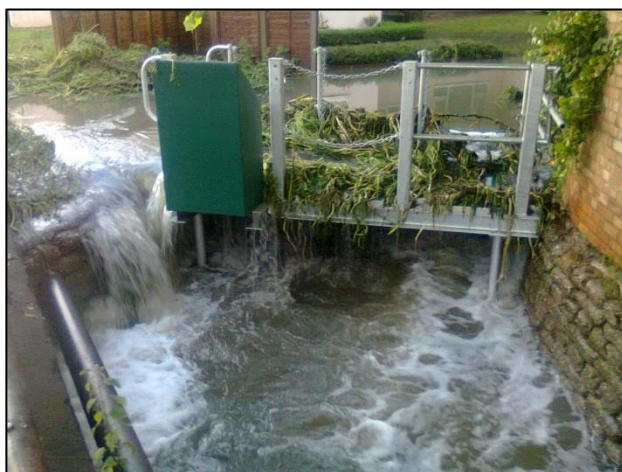
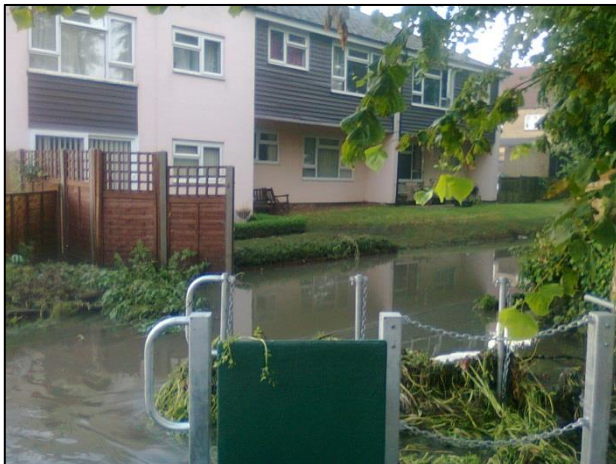


			brook course blocked so no flow there for relief. 16/07/2015- partial blockage at Hitchin Road culvert holding back flow.
04/07/2015	Garage or outhouse, Garden,	n/a	...trash gate river authorities installed in the brook which collected debris wasn't cleared so caused flooding. No allowance have been made for the million litres of rain water that comes direct into the brook, if there is a storm the brook can not take the amount of rain water. The bridge by the Pig and Whistle is not suitable to take the amount of water. We have an app 'met office weather warnings' as we fear of flooding again. Something needs to be urgently done. See photos attached.
Date of latest flooding: 4.7.15	Garden	n/a	<p>In the last 10 years the Brook Street flooded on one previous occasion to my knowledge when the water rose to 2-3 brick height but did not enter the property as my door does not open onto Brook Street but onto the car park at the back. The fire brigade were called to help to divert the water from the road.</p> <p>I believe there have been high water levels over the years and the flooding is likely due to:</p> <ul style="list-style-type: none"> <li>- heavy rainfall</li> <li>- debris/rubbish carried along the water course, blocking the bridge and the new gate built recently formed a dam over which the water levels rose and breached</li> <li>- I have also noted that there is water running along the kerbs and wonder if this is due to poor drainage/drains overflowing.</li> </ul>
04/07/2015	Garden	n/a	The bridge/gate installed in brook, to catch rubbish and debris.

## Appendix 4

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### Photos



## Disclaimer

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Although every effort has been taken to ensure the accuracy of the information contained within the pages of the report, we cannot guarantee that the contents will always be current, accurate, or complete.

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