



WEST OXFORDSHIRE  
DISTRICT COUNCIL

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# Parish Flood Report: **Aston, Cote, Shifford & Chimney**

July 2008

Version 1 – This report may be revised in the future to incorporate ongoing consultation results



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## **1.0 INTRODUCTION**

On the 20th July 2007 large parts of the South of England were subjected to intensive storms. The scale and speed of the rainfall was unprecedented and took most communities by surprise causing widespread flooding of highways and property. On this occasion, unlike previous storms / flooding experienced, this impacted on many properties that had never been affected before, due to much of the flooding coming in the form of rain water run off from land.

A swathe of the district was particularly badly affected by the massive storms, which commenced in the morning and subsided in the evening. During the following days further disruption occurred due to rising river levels. At RAF Brize Norton, the records show that over 125 mm (5 inches) of rain fell in 12 hours, and this is a record going back over 100 years. Not only that, but the period from May to July had been the wettest on record since 1903 and meant that the ground was saturated and unable to absorb any more water.

On the 10th October 2007, the District Council's Cabinet considered a report of the Head of Street Scene and approved additional resources in order that a review of the affected areas could be carried out and further reports be prepared for the Council's considerations.

### **1.1 Purpose of the report**

In response to requests from both the Parish and Town Councils and the general public West Oxfordshire District Council has produced a number of reports that identify each individual cause of flooding within the Parish / Town, what work is being carried out by external agencies (EA, Thames water etc); what the potential options are for future mitigation - and who might be best placed to fund such schemes. The reports themselves reflect the series of water systems that all played a part in the flooding experienced in July 2007 and will help all the organisations involved understand the need to sequence their activities.

This report has been prepared by a qualified Engineer in consultation with the key external agencies and seeks to explore the main reason behind why the floods happened in July 2007 and give an overview of the event itself. It will also provide an understanding of the different roles and levels of responsibility for the agencies involved.

This report should be used to make sure that all the agencies involved with flood prevention – like the Environment Agency, Thames Water, Oxfordshire County Council, Town / Parish Councils and private land owners – work in true partnership for the good of everyone in the local community.

A key outcome of the reports is that residents are given a broad overview of the complex linkages between the different organisations involved and also the range of options available.

### **1.2 Roles and responsibilities**

One of West Oxfordshire District Councils key ongoing roles is to continue to lobby National agencies / Government on behalf of the residents and businesses of the district to secure funding and/or additional resources to assist with flood prevention and other relevant activities. The Council will also work closely with other agencies and organisation in order to highlight the local issues and actions identified in the report.

The legal responsibility for dealing with flooding lies with different agencies and is complex, so below is a simplified summary.

**Environment Agency (EA)** – permissive powers<sup>1</sup> for main rivers

**Oxfordshire County Council (OCC)** – Responsible for adopted highways and highway drainage.

**Thames Water (TW)** – Responsible for adopted foul and surface water sewers.

**West Oxfordshire District Council (WODC)** – duties as a riparian<sup>2</sup> land owner, and permissive powers<sup>1</sup> under Land Drainage Act 1991, Public Health Act 1936, Highways Act 1980 and Environmental Protection Act 1990.

**Private land owners** - duties as a riparian land owner.

### **1.3 Consultation and consent**

The key organisations mentioned above are currently carrying out their own investigations, but operate independently of each other, have different methods of prioritisation and different funding criteria. The District Council has consulted with these agencies together with Parish Councils, Town Councils and individual property owners in order to prepare this report.

It is recognised that the majority of the options proposed in this report require further investigations / feasibility studies and / or consultation before they are carried out. Therefore these options may not be appropriate in every case when full costings, environmental, landscaping, biodiversity, built environment and historic factors are fully considered.

When considering protection against future flooding, it must be emphasised that the risk and impact of flooding can be mitigated against but in some cases not fully removed.

### **1.4 Response to this report**

The options section of this report highlights the potential areas of work / activities under the responsible agency, for example the Environment Agency, West Oxfordshire District Council etc. If you have any specific questions relating to these activities please contact the relevant agency using the contact details provided at the top of the chart.

If you have any general questions please contact your Parish / Town Council who have been a key contributor to the production of the report and have agreed to act as the first point of contact.

The Council is also planning to hold a series of ‘road shows’ in the Parish areas where representatives from all the relevant areas will be available to answer any questions local residents have as well as provide more information on ways residents may help themselves.

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<sup>1</sup> Permissive powers are when an organisation may choose whether or not to exercise their powers. I.e. they are NOT under a duty. In making this choice account must be taken of any factors required by the legislation, plus for example how urgent, how necessary they are, cost, likely result, etc

<sup>2</sup> Riparian owners are responsible for the maintenance of any watercourse within or adjacent to the boundaries of their property.

## **1.5 Legal**

No part of this report is to be reproduced, copied or used by any third party without the prior express written consent of WODC in its absolute discretion. All those reading this report acknowledge that any conditions, warranties or other terms implied by statute or common law are excluded to the fullest extent permitted by law. Without limiting the scope of the foregoing, West Oxfordshire District Council does not give any warranty, representation or undertaking as to the efficacy or usefulness of the information contained within this report, nor that any advice contained within this report will produce satisfactory results if followed. West Oxfordshire District Council hereby excludes liability to the fullest extent permitted by law for any reliance placed in this report by third parties.

## 2.0 THE DISTRICT COUNCIL'S ACHIEVEMENTS OVER THE PAST 12 MONTHS

### Flood Grants

- 24 WODC Flood Grants totalling £ (see Alison) were given out.
- \*\* (see Alison) Red Cross Flood Grants totalling \*\* (see Alison) administered by WODC

### Reports

- Environment Agency Flood Review published July 2007
- WODC Parish Flood Report completed in June 2008

### Actions from the Council's Interim Report published in January 2008

- The table below provides a summary of some of the completed actions identified in the report

Bronze command procedure to be updated to recognise the need for ensuring shift rotas are in place in the early stages of an emergency
Consider producing a revised warning system that identifies a higher category of risk that is only issued in exceptional circumstances
The emergency plan specifically addresses the need to keep in regular contact with elected members
That the Emergency Plan recognises the role the elected members can play in emergency and recovery situations
That in future emergency situations District Councils ensure that they have a representative present at Silver Command from the start of the emergency to act as a conduit for information between Silver Command and the District Councils
The council should encourage all residents residing in the flood plain and in areas at risk of flooding to sign up to the EA Flood Alert system.
Provide clear information to residents and businesses about what type of waste we can collect and how it will be collected
Explanations to residents of our need for bulky waste to be placed on the roadside for collection
Commence a review of the mapping of the many thousands of privately owned ditches and culverts, and ensure they are kept clear and well maintained in accordance with the new policy (2 TOR 3)
Lobby central government for a single agency to take control of all land drainage issues
WODC continues to act in a coordination capacity with key external agencies
Continue to liaise with EA to ensure that procedures relating to planning consultations are robust. Seminar being arranged to take place early in 2008 to progress this
Progress the Strategic Flood Risk Assessment
Consider producing a revised warning system that identifies a higher category of risk that is only issued in exceptional circumstances
Approaches to be made to the EA and Metrological Office with regard to improving their predictive capability
Lobby central government for a single agency to take control of all land drainage issues
WODC continues to act in a coordination capacity with key external agencies
During emergency events, have an external media person (BBC) in Bronze Command
Purchase digital TVs to assist with reviewing weather, local and national news to assist emergency management

### 3.0 EXECUTIVE SUMMARY

Following the flooding events of July 2007, West Oxfordshire District Council (WODC) has responded to requests from both Town and Parish Councils to aid the coordination of all the agencies and bodies that were undertaking their own investigations into the floods through the production of Parish Flood Reports.

This document is the Parish Flood Report for the villages of Aston, Cote, Shifford and Chimney and has been prepared by the Council's Engineering team. It pulls together information from external agencies and individual property owners. It identifies the causes of flooding in the Parish of Aston, Cote, Shifford and Chimney during July 2007 and potential mitigating solutions.

The report itself is broken down into a number of sections and will include;

- An overview of flooding history in Aston, Cote, Shifford and Chimney and flood related issues raised by residents
- A presentation of the problems and causes of flooding in Aston, Cote, Shifford and Chimney during July 2007, with the town divided into fifteen areas for clarity
- A summary of all the flooding issues and potential mitigation options in each area
- A breakdown of the recommendations for immediate, mid-term and long term actions for each area including the responsible agency based on the options identified

The table below provides a summary of some of the main causes of the flooding in Aston, Cote, Shifford and Chimney and the mitigation options that could be applied to alleviate the different flooding problems. More detail is provided regarding the specific locations of the causes of flooding in section 5 of the report

Source of flooding	Potential mitigation measures
Blocked ditch opposite Kingsway Cottages	Clear/ maintain ditch on a regular basis by OCC. All highway ditches in Aston, Cote, Shifford and Chimney, if not already, to be cleared as part of an on-going maintenance.
Surcharging of Yelford Drain	Clear/ maintain Yelford Drain as above/ provide a flood protection bund for properties west of Shifford Road.
Agricultural run-off onto the Public Highway	Provide cut-off bund and ditch to intercept and control agricultural land run-off.
Blocked/ Collapsed highway drainage	Survey, repair collapsed pipe, and/ or jet out highway drainage.
Highway run-off to low-lying Kingsway Cottages	Provide highway ramp and channel to prevent the passage of water flooding Kingsway Cottages.
Run-off from footway passing under door thresholds	Provide doorway threshold barrier plates to properties at risk.
Raised water table passing through porous traditional floor construction	Provide property perimeter land drainage and/or relay internal floor using a hygroscopic membrane.

## **4.0 SURVEY**

### **4.1 Description of area**

The parish of Aston, Cote, Shifford and Chimney is approximately 1400 Hectares (3400 Acres) in size. The Parish is rural in nature forming part of the catchment area for the River Thames via Great Brook.

The village of Aston (the focal point of the Parish) is approximately 6km south of Witney.

Aston Ditch passes the western side of the village, north to south, before discharging into the Shill Brook and then Great Brook, and Bull Lane Ditch/ Cote Ditch passes the eastern side of the village, north to south, also discharging into Great Brook.

The River Thames forms the southern boundary of the Parish, Brighthampton Cut the eastern boundary, Elm Bank Ditch the northern boundary and Aston Ditch the western boundary.

Aston Ditch, Shill Brook, Great Brook, Bull Lane Ditch, Cote Ditch, Brighthampton Cut and Elm Bank Ditch are all Enmained watercourses (form part of the Main River system).

There are 12 farms (Newhouse Farm, New Shifford Farm, South Farm, Old Shifford Farm, Chimney Farm, Kingsway Farm, Whitehouse Farm, North Street Farm, Cote Lodge Farm, Willow Farm, Cote House Farm), Aston and Cote village amenities (Schools, churches, shops etc) and a chicken hatchery located within the Parish.

A map of the Parish is shown in Figure 2.

### **4.2 Survey approach**

Visual walk-over surveys have been undertaken. Photographs of some of the flood affected areas are in Appendix I.

A review of all correspondence, received by the Council about the July 2007 flooding in the Parish of Aston, Cote, Shifford and Chimney, has been carried out and incorporated within the findings of the report.

### 4.3 Meetings

Details of key meetings attended by District Council representatives about the flooding of Aston, Cote, Shifford and Chimney in July 2007 are given in Table below;

<b>Date</b>	<b>Main participants and Venue</b>	<b>Description</b>
06/03/08	Site Meeting to speak to residents of Kingsway Cottages and Westfield House.	Discussed concerns, issues and solutions directly relating to flooding of properties of Bampton Road.
06/03/08	Parish Council Meeting at Aston Parish Hall.	Discussed flooding in relation to cause, affect and possible solutions to mitigate flooding in Aston, Cote, Shifford and Chimney. Discussed WODC's production of the Parish Flood Defence Report.
24/03/08	Site Meeting with Chairman of Parish Council (John Little).	Visited properties that flooded and discussed issues relating to prevention of future flooding and damage to properties.
13/5/08	Parish Council Meeting at Aston	Requested further information from residents on location of concern and give update on WODC actions since July 2007.

The District Council has liaised with the Environment Agency, Oxfordshire County Council and Thames Water. The Environment Agency has carried out visual surveys of the flooded areas affected by the main river.

The District Council has contacted some of the owners of properties that flooded in July 2007.

#### 4.3.1 Application for Grant Aid

The District Council has distributed a range of financial support to the residents of district in the form of;

- Emergency Flood Relief Grant Aid of £250

Whilst the Emergency Flood Relief Grant Aid was not paid to industrial and commercial properties, the Council did provide advice and support to local business affected by the flooding on funding available from Business Link and other organisations.

### 4.3.2 Flooding History

The flooding history relevant to the Parish of Aston, Cote, Shifford and Chimney is as follows:

- June 1903      Flooding on the upper Thames. Highest levels locks upstream of the Cherwell since records began. Number of properties affected unknown.
- March 1947      Catchment wide flooding of the Thames including the Lee catchment. Over 10,000 properties affected.
- July 1968      Flooding in the mid to lower Thames and severe flooding in the Mole and Wey catchments. Approximately 10,000 properties affected.
- Nov 1974      Flooding in the lower Thames and its tributaries including Addlestone Bourne, Blackwater, Beam, Loddon, Emm Brook.
- Easter 1998      Flooding in the Cherwell catchment. Approximately 1000 properties affected.
- Oct/Nov 2000      Catchment wide flooding in the Thames. Approximately 1100 properties affected.
- Jan 2003      Catchment wide flooding in the Thames. Over 500 properties affected.
- July 2007      Catchment wide flooding in the Thames. Over 500 properties affected.

## 5.0 PROBLEMS AND CAUSES

### 5.1 Plans

Figure 1 (see Appendix 2) is a map showing areas in Aston, Cote, Shifford & Chimney where flooding occurred in July 2007.

Figure 2 (see Appendix 2) contains the following:

- **Aston, Cote, Shifford & Chimney Parish boundary**
- **Environment Agency** - main rivers and enmained water courses in the area.
- **Flood Zone 2, January 2008** - 0.1% annual probability of flooding occurring or low to medium risk. Previously referred to as 1:1,000 year flooding.
- **Flood Zone 3, January 2008** - 1% annual probability of flooding occurring or high risk. Previously referred to as 1:100 year flooding

**Note – this EA map has been updated to reflect the events of July 2007. All references to flood zones in this report refer to the previous EA flood zone map i.e. pre July 2007.**

### 5.2 Area 1 – Aston Village Centre

Nine properties flooded in Aston Village centre including Ham Lane, West End, The Square and Bampton Road.

This was attributable to one or a combination of the following: (i) low-level doorway thresholds in relation to the adjacent highway. (ii) Water table rising through traditional building porous floors. (iii) Flooding of Aston Ditch opposite Thames Water Pumping Station in Bampton Road.

The cause of flooding is the following:

#### 5.2.1 Low-level Doorway Thresholds

There are a number of properties with low level doorway threshold levels in relation to the adjacent Public Highway. In July 2007 water cascaded down West End and The Square, rising up over the footway and beneath the front doors of some older properties without a deep threshold lip. This was particularly prevalent for older properties where the level of the adjacent highway had built up over time.

#### 5.2.2 Water Table Rising through Porous Floors

As above, older properties experienced flooding problems, where water rose up and through the traditionally constructed porous floors. This occurred due to the local rise in water table triggered by the prolonged duration of the rainfall event.

#### 5.2.3 Flooding of Aston Ditch

Low lying properties in Bampton Road experienced flooding due to run-off from the fields to the rear and highway to the front. This was particularly evident in Bampton Road opposite the Thames Water Pumping Station where Aston Ditch flooded onto the adjacent highway.

### 5.3 Area 2 – Bull Street and Church Lane

Five properties flooded in the Bull Street/ Church Lane area of the Parish.

This was caused by one or a combination of the following: (i) Run-off from adjacent fields in Church Lane. (ii) Collapsed Highway Drain in Bull Street. (iii) Flooding of Great Brook. (iv) Water table rising through traditional porous floors.

### **5.3.1 Run-off from Fields in Church Lane**

Agricultural run-off cascaded across Church Lane flooding Gaston Cottage with the adjacent gutter proving ineffective.

### **5.3.2 Collapsed Highway Drain**

Oxfordshire County Council have surveyed the highway drainage in Bull Street and located a collapsed pipe. It is understood that there are proposals afoot to repair the pipe. The collapsed highway drainage is one of the reasons for the flooding of Bull Street as highway run-off has no means of escape.

### **5.3.3 Flooding of Great Brook**

In July 2007 Great Brook surcharged which flooded agricultural land to the north. The run-off from the fields then flooded Bull Street and Bull Lane ditch.

### **5.3.4 Water Table Rising through Porous Floors**

As in paragraph 5.2.2, older properties in the Bull Street/ Church Lane area experienced flooding problems, where water rose up and through the traditionally constructed porous floors.

## **5.4 Area 3 – Back Lane**

Back Lane was flooded in the Parish of Aston, Cote, Shifford and Chimney in July 2007. The flooding was caused by a combination of the property being constructed at a low level in relation to the adjacent highway and a blocked ditch running across its frontage.

### **5.4.1 Low Lying Property**

The historic property is constructed at a low level and consequently vulnerable to flooding from highway run-off from both Back Lane to the north and North Street to the east.

### **5.4.2 Blocked Ditch**

The highway drainage ditch running across the frontage of Properties off Back Lane is blocked and floods regularly. There is believed to be a blocked pipe connection between the ditch and the highway drainage in North Street.

## **5.5 Area 4 - Cote**

Seven properties flooded in the Cote area to the west of the Parish. This was caused by one or a combination of either surface water spray from vehicles at the junction of the B4449 and Shifford Road or the surcharging of Yelford Drain to the rear of properties west of Shifford Road. Yelford Drain is not Enmained.

### **5.5.1 Surface Water Spray**

In July 2007 ponding of surface water occurred at the junction of Shifford Road and the B4449. Vehicles passing through the standing water created extensive spray which washed up, over and through properties to the north of the junction.

### **5.5.2 Surcharging of Yelford Drain**

In July 2007 Yelford Drain, which is a tributary to Great Brook, surcharged and flooded gardens and properties to the west of Shifford Road. The properties that flooded were generally old and constructed at a much lower level than the adjacent highway.

### **5.5.3 Combined Sewer**

Excess surface water reaches the combined sewer running under Rack End and surcharging occurs.

## **6.0 OPTIONS**

The following table shows the possible options available for flood alleviation schemes throughout the Parish, and their potential effectiveness, as assessed by the District Council Engineers.

Many of these options will require further detailed investigation along with the agreement of the responsible landowner, identification of budget and a cost benefit analysis to be carried out before they could be implemented.

Some of the options shown are also mutually exclusive, that is if one option is carried out then another will not be necessary, to find if this is the case for an option, please look at the detailed description in the Conclusions and Recommendations Section (6.0).

If you require further information regarding a particular option, please contact the agency that would be responsible for implementation of the proposal, where this has been shown, using the contact information at the top of the column. If no contact details are shown, there may be a private landowner responsible. If this is the case the District Council will ensure that private landowners are made aware of their responsibilities.

# West Oxfordshire District Council

## Parish Flood Defence Report – Options summary

### Aston, Cote, Shifford and Chimney Parish

June 2008

Option ref	Problem overview	Description of work required					Key issues			Comments
		Environment Agency	Oxfordshire County Council	Thames Water	WODC	Private/ Riparian	Effectiveness	Effects on adjacent land	Cost	
	<b>Options</b>									
		<b>For queries</b> Tel 08708 506 506 or email <a href="mailto:enquiries@environment-agency.gov.uk">enquiries@environment-agency.gov.uk</a>	<b>For queries</b> Tel: 0845 310 1111 or e-mail <a href="mailto:northernarea@oxfordshire.gov.uk">northernarea@oxfordshire.gov.uk</a>	<b>For queries</b> Tel: 08459 200800	<b>For queries</b> Tel: 01993 861000 or e-mail <a href="mailto:enquiries@westoxon.gov.uk">enquiries@westoxon.gov.uk</a>	Aston, Cote, Shifford and Chimney Parish Council				
<b>Area 1 – Aston Village Centre</b>										
	Nine properties flooded – estimated frequency every 1 to 5 years. Primary causes - (i) Low level doorway thresholds (ii) Water table rising through porous floors (iii) Flooding of Aston Ditch.									
Action 1	Clear out ditch west of “Westfield House” from the Thames Water Pumping Station to the Enmained watercourse opposite the junction of Westmoor Lane and Bampton Road.		OCC to undertake this work in conjunction with Thames Water. <b>OCC comments required.</b>	Thames Water to undertake this work in conjunction with OCC. <b>OCC comments required.</b>	WODC to co-ordinate works with this proposal.		Provides protection to properties fronting Bampton Road.	None	Up to £5k.	
Action 2	Provide perimeter land drainage to flooded properties with well point pump to on-site storage tank.				WODC to co-ordinate works with this proposal.	Work to be undertaken and funded wholly by the private owner. WODC to provide guidance only. Riparian Owner to fund on-going maintenance of pump.	This option will prevent water rising through the floor but will not prevent flooding of gardens/ driveway etc.	May require planning permission and land drainage consent.	£5k to £20k.	
Action 3	Provide a protective bund at the entrance to the driveway of Kingsway Cottages.		OCC to undertake this work. <b>OCC comments required.</b>		WODC to co-ordinate works with this proposal.		Provides protection to properties fronting Bampton Road.	None.	Up to £5k.	

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	<b>Options</b>									
		<b>For queries</b> Tel 08708 506 506 or email <a href="mailto:enquiries@environment-agency.gov.uk">enquiries@environment-agency.gov.uk</a>	<b>For queries</b> Tel: 0845 310 1111 or e-mail <a href="mailto:northernarea@oxfordshire.gov.uk">northernarea@oxfordshire.gov.uk</a>	<b>For queries</b> Tel: 08459 200800	<b>For queries</b> Tel: 01993 861000 or e-mail <a href="mailto:enquiries@westoxon.gov.uk">enquiries@westoxon.gov.uk</a>	Aston, Cote, Shifford and Chimney Parish Council				
<b>Area 2 - Bull Street &amp; Church Lane</b>										
	Five properties flooded – estimated frequency every 1 to 5 years. Primary causes - (i) Run-off from fields off Church Lane. (ii) Collapsed highway drain in Bull Street (iii) Flooding of Great Brook (iv) Water table rising through porous floors.									
Action 1	Provide perimeter land drainage to flooded properties with well point pump to on-site storage tank. Tank to be emptied at regular intervals during peak rainfall events.	EA to advise on pumping rate and discharge quantity required to lower the water table.			WODC to co-ordinate works with this proposal.	Work to be undertaken and funded wholly by the private owner. WODC to provide guidance only. Riparian Owner to fund on-going maintenance of pump.	This option will prevent water rising through the floor but will not prevent flooding of gardens/ driveway etc.	May require planning permission and land drainage consent.	£5k to £20k.	
Action 2	Provide a cut off bund and ditch at the head of Church Lane.		OCC to undertake this work and provide full funding. <b>OCC comments required.</b>		WODC to co-ordinate works with this proposal.	Work is to be undertaken and funded wholly by OCC.	This option will prevent surcharging and flooding of "Manor Farm" and adjacent properties	Work to be undertaken on private land.	£5k to £20k	
Action 3	Repair highway drainage in Bull Street.		OCC to undertake this work and provide full funding. <b>OCC comments required.</b>		WODC to co-ordinate works with this proposal.				£5k to £20k	
Action 4	Low lying properties to have floors re-laid with a suitable hygroscopic membrane. Work to be undertaken to satisfaction of WODC Planning Dept.				WODC to co-ordinate works with this proposal.	Work to be undertaken and funded wholly by the private owner.	This option will prevent water rising through the floor but will not prevent flooding of gardens/ driveway etc.		£20K to £50K.	

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	<b>Options</b>									
		<b>For queries</b> Tel 08708 506 506 or email <a href="mailto:enquiries@environment-agency.gov.uk">enquiries@environment-agency.gov.uk</a>	<b>For queries</b> Tel: 0845 310 1111 or e-mail <a href="mailto:northernarea@oxfordshire.gov.uk">northernarea@oxfordshire.gov.uk</a>	<b>For queries</b> Tel: 08459 200800	<b>For queries</b> Tel: 01993 861000 or e-mail <a href="mailto:enquiries@westoxon.gov.uk">enquiries@westoxon.gov.uk</a>	Aston, Cote, Shifford and Chimney Parish Council				
Action 5	Provide a flood protection cut-off bund to protect Bull St from the flooding of Great Brook.	The EA is to undertake and wholly fund this work. <b>EA comments required.</b>			WODC to co-ordinate works with this proposal.			Work to be undertaken on private land.	£5k to £20k	
<b>Area 3 – Back Lane</b>										
	One property flooded – estimated frequency every 1 to 5 years. <u>Primary causes</u> – (i) Low lying property vulnerable to highway run-off. (ii) Blocked ditch crossing frontage.									
Action 1	Provide perimeter land drainage to flooded property with well point pump to on-site storage tank. Tank to be emptied at regular intervals during peak rainfall events.				WODC to co-ordinate works with this proposal.	Work to be undertaken and funded wholly by the private owner. WODC to provide guidance only. Riparian Owner to fund on-going maintenance of pump.	This option will prevent water rising through the floor but will not prevent flooding of gardens/ driveway etc.	May require planning permission and land drainage consent.	£5k to £20k.	
Action 2	Provide new highway drainage culvert or unblock existing between Back Lane and North Street.		OCC to undertake this work. <b>OCC comments required.</b>		WODC to co-ordinate works with this proposal.			None	£5k to £20k.	

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		For queries Tel 08708 506 506 or email enquiries@environment-agency.gov.uk	For queries Tel: 0845 310 1111 or e-mail northernarea@oxfordshire.gov.uk	For queries Tel: 08459 200800	For queries Tel: 01993 861000 or e-mail <a href="mailto:enquiries@westoxon.gov.uk">enquiries@westoxon.gov.uk</a>	Aston, Cote, Shifford and Chimney Parish Council				
<b>Area 4 – Cote</b>										
	Sven properties flooded – estimated frequency every 1 to 5 years. <u>Primary causes</u> – (i) Surface water spray from B4449 (ii) Surcharging of Yelford Drain.									
Action 1	Provide door threshold flood barriers to properties on the B4449		OCC to undertake this work. <b>OCC comments required.</b>		WODC to co-ordinate works with this proposal.		Localised effective solution.	None	Up to £5k. Per dwelling	
Action 2	Clear out Yelford Drain					Work to be undertaken and funded wholly by the private owner.	Localised effective solution.	Access required to properties west of Shifford Road.	£5k to £20k.	
Action 3	Provide Flood Bund to Yelford Drain	Yelford Drain is not Enmained therefore no action for the EA.				Work to be undertaken and funded wholly by the private owner.	Localised effective solution.	Land required from properties west of Shifford Road to construct the bund.	£5k to £20k	
Action 4	Provide new surface water tank sewer & hydrobrake under Shifford Road to attenuate flow. Highway, roof, yard and driveway drainage to be connected & change the existing 150mm diameter combined sewer to foul only.	EA to advise on permissible discharge rate from tank sewer to avoid flooding.		Thames Water to install new facility. All highway, roof, yard and driveway drainage to be connected to the new sewer to change the combined sewer to foul only. <b>Thames Water comments required.</b>	WODC to co-ordinate works with this proposal.	Private surface water drainage connections to be diverted to the new sewer by Thames Water.	Level of protection dependant on size of tank sewer which is dependant on available land.	This option will remove excess load currently taken by the pumping stations.	£100K to £200K	

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 Area 1 – Aston Village Centre**

#### **7.1.1 Maintenance**

The following on-going maintenance is recommended:

- Action 1 – OCC in conjunction with Thames Water to clear out ditch west of Westfield House on a regular basis as they take highway drainage.

#### **7.1.2 Flood defence improvement schemes**

The following flood defence improvement schemes are recommended:

##### Mid-Term (under 1 -2 years)

- Action 3 – OCC to provide protective bund at the entrance to the driveway of Kingsway Cottages to protect highway drainage flooding.
- Action 2 – Private owner to provide perimeter land drainage.

### **7.2 Area 2 – Bull Street and Church Lane**

#### **7.2.1 Maintenance**

The following on-going maintenance is recommended:

- Action 1 – OCC to repair highway drainage collapse in Bull Street.

#### **7.2.2 Flood defence improvement schemes**

The following flood defence improvement schemes are recommended:

##### Mid-Term (under 1 -2 years)

- Action 2 – OCC to provide cut-off bund and ditch at the head of Church Lane.
- Action 5 – EA to provide cut-off bund and ditch to protect Bull Street from the flooding of Great Brook.

##### Long – Term (under 2-5 years)

- Action 1 – Riparian owner to provide perimeter land drainage with well point pump to on-site storage tank.
- Action 4 – Riparian owner to provide low lying floors re-laid with a suitable hygroscopic membrane.

### **7.3 Area 3 – Back Lane**

#### **7.3.1 Maintenance**

The following on-going maintenance is recommended:

- Action 2 – OCC to unblock and repair the existing culvert between Back Lane and North Street.

### **7.4 Area 4 - Cote**

#### **7.4.1 Maintenance**

The following on-going maintenance is recommended:

- Action 2 – Yelford Drain to be cleaned out by the riparian owner.

#### **7.4.2 Flood defence improvement schemes**

The following flood defence improvement schemes are recommended:

Mid-Term (under 1 -2 years)

- Action 1 – OCC to provide threshold plates to properties flooding from highway run-off because they have increased the level of the road.

## Appendix I: Photographs



Area 1: Thames Water Pumping station opposite Kingsway Cottages.



Area 1: No 2 West End (Low Threshold).



Area 1: Bampton Rd. In front of Kingsway Cottages.



Area 1: Aston Ditch tributary opposite.



Area 1: Merton & Tanglyn Cottages opposite Aston Ditch tributary.



Area 1: Kingsway Cottages driveway. Kingsway Cottages



Area 2: The Square.



Area 2: Red Lion PH Threshold Drainage.



Area 2: Drainage at the Red Lion PH.



Area 2: Red Lion PH Threshold Drainage.



Area 2: Gaston Cottage.



Area 2: No 19 Bull Street.



Area 2: No 38 Bull Street.



Area 2: Bull Street



Area 2: Fieldview, Ham Lane.



Area 2: Aston Church



Area 2: Flooded property in Bull Lane



Area 2: Church Lane.



Area 2: Highway Drainage protection bund



Area 2: Sterile field due to flooding.



Area 2: Highway Drainage in Bull Street.



Area 2: Direction of overland Storm flow from Great Brook.



Area 2: Thames Water pumping station in Bull Street.



Area 2: No 6 Manor Close.



Area 3: Michelmas House, Back Lane.



Area 3: Highway drainage ditch at Michealmas House.



Area 4: Yelford drain.



Area 4: Pond Cottage, Cote



Area 4: Cote Drain.



Area 4: Danielwood, Shifford Road, Cote.



Area 4: Cote Villa, Cote Road



Area 4: Moss Rose Cottage, Cote Road



Area 4: Little End Cottage, Cote Road.



Area 4: Highway Drainage at Danelwood, Cote



Area 4: Cote Villa, Cote Road



Pond House, Cote.