

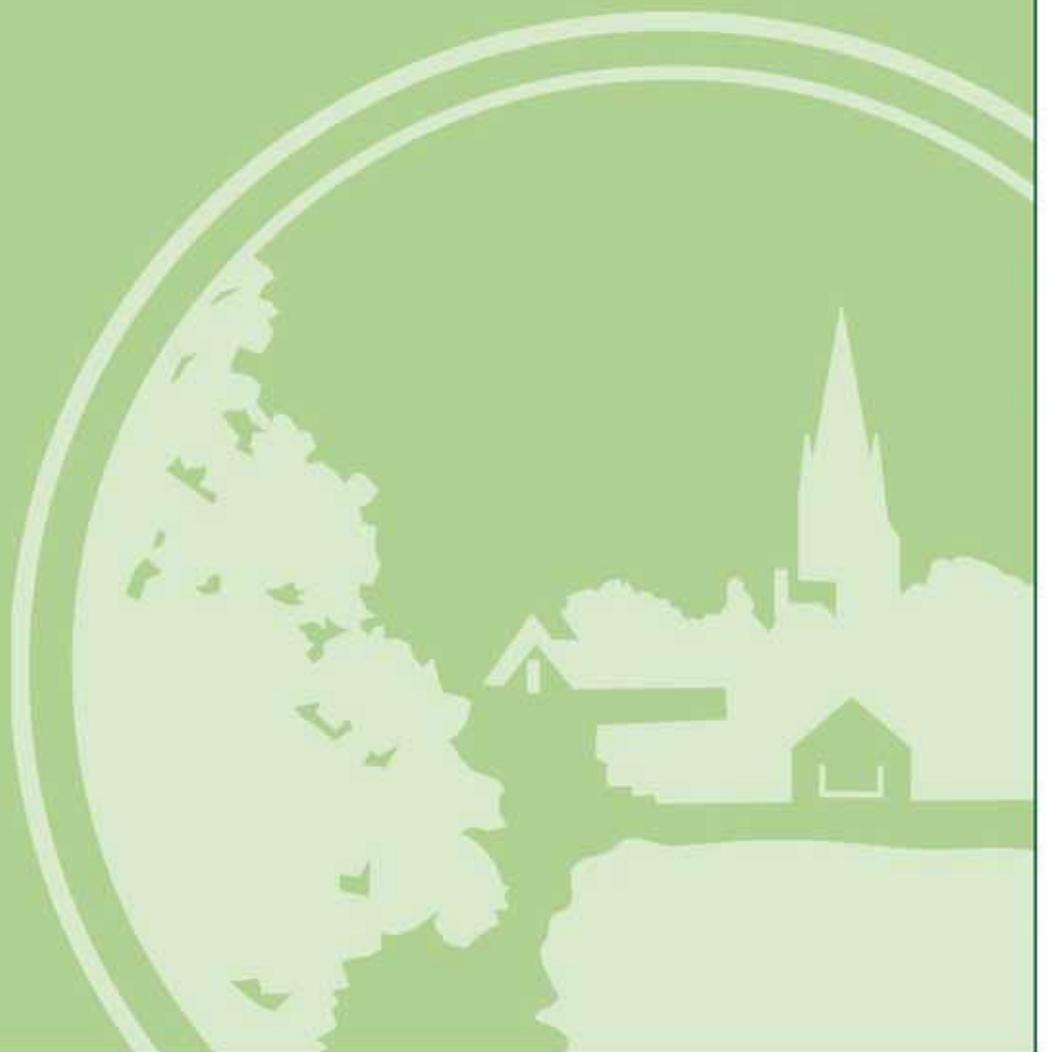


WEST OXFORDSHIRE
DISTRICT COUNCIL

www.westoxon.gov.uk

Parish Flood Report: **Stanton Harcourt**

Version 2 - September 2008



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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 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 organisations 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 powers¹ 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 riparian² land owner, and permissive powers¹ 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.

¹ 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.

² 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 DISTRICT COUNCIL'S ACHIEVEMENTS OVER THE PAST 12 MONTHS

Ditch Clearance

- 1731 Linear metres WODC owned ditches cleared overall
- 1923 Linear metres Privately owned ditches cleared overall
- Overall 2.27 miles of ditches have been cleared

Flood Grants

- 1137 WODC Flood Grants totalling £284,250 given out overall
 - 23 (£5,750) for Stanton Harcourt
- 40 Red Cross Flood Grants totalling £80,929 administered by WODC overall
- 301 Hardship Grants totalling £155,050 given out overall

Reports

- Interim Flooding Report published October 2007
- 12 Parish Flood Reports completed by June 2008, 1 report for Stanton Harcourt

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 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
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 Stanton Harcourt and has been prepared by the Council's Engineering team. It pulls together information from external agencies and individual property owners and seeks to identify the causes of flooding during July 2007 and potential mitigating solutions.

This report recognises the statutory duties of WODC to maintain and enhance the biodiversity, protect local habitats in the UK Biodiversity Action Plan, protect specially protected species, conserve and enhance the character and appearance of Conservation areas and protect or maintain listed buildings.

Stanton Harcourt is a rural parish of 1400 Hectares (3460 Acres), including the communities of Stanton Harcourt village, Sutton, Blackditch and West End sandwiched between the River Thames to the east, River Windrush to the west and Limb Brook to the north. Several visual walkover surveys have been undertaken of the flooded areas and properties. Meetings have been held with affected residents and the Parish Council. The number of Flare Reports and Applications for Grant Aid has also been investigated.

The flooding of Stanton Harcourt has been assessed in two separate areas (see section 5.1) comprising Blackditch (Area 1) and Sutton (Area 2).

Properties in Blackditch (Area 1) suffered extensive damage which, with respect to run-off from the July 2007 event, was attributable to either or a combination of the following: water discharging across fields to the north of Blackditch Road, under-capacity highway drainage in Blackditch Road, Blackditch open watercourse surcharging due to weed over-growth, intermittent under-sized culvert crossings or the combined sewer running under the village not being able to cope with the significant increase in discharge. Maintenance of Blackditch watercourse is the responsibility of the riparian owners from the junction of the B4449 and Stanton Harcourt Road until it reaches the Enmained watercourse to the rear of Lower Farm.

Similarly Sutton (Area 2) suffered extensive damage which, with respect to run-off from the July 2007 event, was attributable to one or a combination of the following: water table rising through traditional porous floors, overgrown and filled in watercourses, undersized culvert crossings, excess vegetation and silt blocking the free flow path of the ditch running east from Sutton Farm Industrial Estate in the direction of the River Thames, insufficient highway drainage and excess surface water run-off flooding the 150mm diameter combined sewer. Maintenance of the ditch from Sutton Farm in the direction of the River Thames is the responsibility of the riparian owners until it reaches the Enmained watercourse to the rear of Cox's Farm.

Area 1 is considered high priority because some residents in Willowbrook are still to return to their properties having evacuated in July 2007.

Flooding problems and options, including description of works and how each public and private body is affected, effectiveness of each solution, affects on adjacent land and approximate costs, are included in Sections 5 and 6.

Conclusions and recommendations, including maintenance and flood defence improvement schemes and programme, are shown in Section 7.

Some of the recommendations directly affect flood zones and environmentally sensitive areas such as important wildlife sites, listed buildings and Tree Preservation Orders.

In Blackditch (Area 1) at the end of 2007, Thames Water provided a deeper inlet at the Sewage Treatment Works and upgraded the surface water pumping station, in addition to sealing manholes to provide protection against storm water ingress.

4.0 SURVEY

4.1 Description of Area

Stanton Harcourt Parish is approximately 1400 Hectares (3460 acres) in size comprising the communities of Stanton Harcourt Village, Sutton, Blackditch and West End. The parish is rural in nature forming part of the catchment area for the River Thames and River Windrush. The parish is sandwiched between the River Windrush to the west, River Thames to the East and Limb Brook to the north and is dissected by Blackditch watercourse.

There are twelve farms (Pink Hill Farm, Tawney's Farm, Pimm Farm, Cutmill Farm, Friar's Farm, University Farm, Cox's Farm, Lower Farm, Manor Farm, Blackditch Farm, Sutton Farm, Nicholls Farm), two mills on the River Windrush, a Leisure Park, Gravel Pits, Lakeside Industrial Park and Sutton Farm Industrial Estate located within the parish. Numerous listed buildings are located within the Parish.

4.2 Survey

Several visual walk-over surveys and visits to the parish were undertaken, including the Blackditch and Sutton areas, where the property flooding events of 2007 occurred.

See Appendix 1 – Photographs

4.3 Meetings

A meeting was held on 19 December 2007 and 21 February 2008 with Charles Mathew (Parish Council Chairman) and contact made with Nigel Parker (Parish Clerk). A Parish Council meeting was also held on 3 March 2008. Owners of properties that flooded in January 2003 and July 2007 were also contacted and details of the conversations are included in the table below.

Locations	When	Problems/ Issues
Properties in Blackditch	20/2/08 & 19/11/07	<ul style="list-style-type: none"> • Properties flooded from field run-off to the north and highway to the south • Water ponds in field to the north adjacent to the rear garden boundary of properties in Blackditch Road. • Blackditch that runs as open watercourse through the garden of No 8 Willowbrook flooded and severely affected the adjacent properties. Some owners have moved out and are yet to return. • Local knowledge indicates that Stanton Harcourt has flooded 4 times in the previous 50 years. • Highway drainage gullies adjacent to the junction of Blackditch Road and The Row are unable to take flow during peak storms and require cleaning out or connections unblocked. • Blackditch weed overgrowth caused partial blockages and flooding to properties in Farmhouse Close.

Locations	When	Problems/ Issues
Properties in Sutton	20/2/08 & Jan 03	<ul style="list-style-type: none"> • The flooding of is due to watercourses in the gardens of properties being filled in. • Flooding at University Farm is due to water ingress through the ancient stone floor. • Surface water enters the existing foul sewer causing flooding of raw sewage into the garden of "Akedon". • Flooding to Sutton Farm garden is due to the lack of a highway drainage ditch on the northside of Sutton Lane.

4.4 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
- 'Hardship' Grants
- Red Cross Grants

There have been 20 applications for Grant Aid from Stanton Harcourt. Many locations have been surveyed to verify the claim. All claimants have been given a sum of £250 towards Emergency Aid.

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.

4.5 Flooding Assessment

This report is based on flooding knowledge gained from meetings with local residents (paragraph 4.3), Applications for Grant Aid (paragraph 4.4) and discussions with utilities.

Discussions were held with Thames Water who advised that in 2007 they undertook works to alleviate flooding in the Blackditch area. The works included constructing a deeper inlet, pumping station and attenuation tank at the Sewage Treatment Works and sealing 14 manholes to prevent flood water ingress. Additionally the pumping station at Blackditch was upgraded and nearly all sewers re-laid and/or re-graded.

Discussions were held with Oxfordshire County Council Highways Department and Stanton Harcourt Parish Council who advised that surface and foul water sewage flooding of Stanton Harcourt village has occurred in the recent past at the following locations: Harcourt Arms Public House, All Saints Cottages, Smithy Cottage, Parsonage House, Farmhouse Close and Sutton Lane frequently.

5.0 PROBLEMS AND CAUSES

5.1 Location plans

Figure 1 (in Appendix 2) shows areas in Stanton Harcourt Parish where flood damage occurred during 2007.

A further map included in Appendix 2 shows:

- **1% annual probability of flooding - Flood Zone 3 (previously referred to as 1 in 100 year flooding)**

A plan showing the 2008 Environment Agency 1% annual probability Flood Zone, this is the area defined by the EA as the extent of a flood with a 1 per cent chance happening in any year. This is the high probability risk zone.

- **0.1% annual probability of flooding – Flood Zone 2 (previously referred to as 1 in 1000 year flooding)**

A plan showing the 2008 Environment Agency 0.1% annual probability Flood Zone, this is the area defined by the EA as the extent of a flood with a 0.1 per cent chance happening in any year. This is the medium probability risk zone.

5.2 Area 1 – Blackditch

Seventeen properties claimed Flood Relief Grant Aid in the Blackditch area in July 2007. This was attributable to either or a combination of the following: water discharging across fields to the north of Blackditch Road, under-capacity highway drainage in Blackditch Road, Blackditch open watercourse surcharging due to weed over-growth, intermittent under-sized culvert crossings or the combined sewer running under the village not being able to cope with the significant increase in discharge. Maintenance of Blackditch watercourse is the responsibility of the riparian owners from the junction of the B4449 and Stanton Harcourt Road until it reaches the Enmained watercourse to the rear of Lower Farm.

Local residents who have lived in the Blackditch area their whole lives claim flooding of the area has occurred 4 times in the last 50 years and more so since Blackditch open watercourse was culverted to construct new drive ways over (approx 30 year ago). Blackditch used to run as an open watercourse along what is now the hedgeline across the front gardens of properties in Blackditch Road.

We have assessed the cause of flooding to be one or a combination of the following:

5.2.1 Flooding of properties in Blackditch Road from overland flow

Large volumes of flood water discharge across fields to the north of Blackditch Road during periods of intense rainfall. The flood water emanates from the Blackditch brook which is culverted at the junction of the B4449 and Stanton Harcourt Road. As it appears that the capacity of the culvert is insufficient to accept such high volumes of run-off, water overflows onto adjacent agricultural land. It then flows overland to reach a low point at the boundary to the back gardens of No's 1 to 10 Blackditch Road.

This accumulation of water spills into the gardens and around onto the highway. Properties are then flooded from the front (southerly) and rear (northerly) directions.

5.2.2 Flooding of highway at junction of Blackditch Road and The Row

There are two large highway gullies located at a low point along Blackditch Road adjacent to its junction with The Row. At periods of intense rainfall the gullies are unable to accept the high volumes of run-off and flooding of the highway occurs outside Dorrells Cott.

5.2.3 Flooding along Blackditch (Barlin Ditch) watercourse

Blackditch (also known locally as Barlin Ditch) surcharges and floods adjacent gardens and properties during periods of intense rainfall. This is likely to be caused by a combination of weed overgrowth and accumulation of debris blocking the flow path and/or undersized culvert crossings under land belonging to the car park and barn adjacent to Fox's House and Blackditch Farm. This occurs from where Blackditch culvert discharges into Blackditch open watercourse at Willowbrook up to the Stanton Harcourt to Bablock Hythe Road.

5.2.4 Combined Sewer

Excess surface water reaches the combined sewer running under Stanton Harcourt and surcharging occurs. A combined sewer should accept as little surface water as possible with the majority of run-off directed to adjacent watercourses or ditches wherever possible. If excess surface water is connected to a combined sewer, foul pumping stations cease to operate effectively, foul sewage surcharges out of manhole covers and pollution of adjacent land or watercourses occurs.

5.2.5 Farmhouse Close

Surface water flooding occurs in Farmhouse Close because the outfall to Blackditch watercourse is blocked with reeds and mud. This was discovered by Oxfordshire County Council Highways Department when they pressure jetted the local storm system following an emergency call out.

5.3 Area 2 - Sutton

Six properties were flooded in the Sutton area of Stanton Harcourt in January 2003 and July 2007. This could be attributed to any or a combination of the following: water table rising through ancient porous floors, overgrown and filled in watercourses preventing a clear flow path, undersized culvert crossings, excess vegetation and silt blocking the free flow path of the ditch running east from Sutton Farm Industrial Estate to the River Thames, insufficient highway drainage, excess surface water run-off entering and flooding the 150mm diameter combined sewer.

Local residents claim that some flooding in Sutton came about following the landscaping works in the gardens of two properties, that included the culverting of a watercourse bisecting a garden.

We have assumed the cause of flooding to be one or a combination of the following:

5.3.1 Low lying properties

Older properties (CIRCA 200 to 300 years) constructed at a lower level using ancient building practices and materials becoming vulnerable to the high water table generated in the area after prolonged heavy rainfall. Additionally low lying properties are at risk from highway run-off flooding on account of the adjacent road level building up over time. This scenario applies to University Farm.

5.3.2 Overgrown and filled in watercourses

Local private landscape gardening, including the culverting of watercourses that cross the gardens of properties, the incorrect sizing of private culverts and the lack of maintenance of the open watercourses has "choked up" the surface water drainage network in Sutton.

5.3.3 Excess vegetation and silt blocking the ditch course running east in the direction of the River Thames

Excess vegetation and silt to be dredged from the watercourse running east from Sutton Farm Industrial Estate towards the Enmained watercourse north of Cox's Farm.

5.3.4 Insufficient highway drainage

Insufficient highway drainage, provided in a low carriageway area outside Pond Cottage along Sutton Lane, and the requirement for a highway drainage ditch along the northern boundary to Sutton Lane.

5.3.5 Combined Sewer

Excess surface water reaches the combined sewer running under Stanton Harcourt and surcharging occurs. A combined sewer should accept as little surface water as possible with the majority of run-off directed to adjacent watercourses/ditches wherever possible. If excess surface water is connected to a combined sewer, foul pumping stations cease to operate effectively, foul sewage surcharges out of manhole covers and pollution of adjacent land or watercourses 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. The areas affected by flooding within the Parish have been given unique area numbers, i.e. Area 1. Several options for flood alleviation projects are identified for each area as "Actions" or "Options".

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 [\(7.0\)](#).

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

Stanton Harcourt Parish

Version 1 – May 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	
	Options	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 enquiries@westoxon.gov.uk					
Area 1 – Blackditch										
	Following periods of heavy rain, flooding occurs to properties in Blackditch Road, Willowbrook and Farmhouse Close in Stanton Harcourt. Flooding originates from the Blackditch watercourse that runs along the northern side of Stanton Harcourt Road before being part culverted through the developed western fringe of Stanton Harcourt. This area takes the name of the watercourse and is called Blackditch. Blackditch watercourse (also known locally as Barlin Ditch) traverses through Stanton Harcourt either in open watercourse or culvert. Flooding to properties in Blackditch is caused by any or a combination of the following: (i) Water discharging across fields to the north of Blackditch Road. (ii) Flooding of the highway at the junction of Blackditch Road and The Row. (iii) Flooding along Blackditch watercourse. (iv) The combined sewer running under the village being unable to cope with a significant increase in discharge. Blackditch watercourse is not Enmained until it reaches the rear of Lower Farm.									
A	Provide a swale (SUD) and balancing pond with outlet control on land opposite "The Old Vicarage" at the junction with Stanton Harcourt Road and the B4449. This will enable flow from Blackditch watercourse to be attenuated, prior to entering the watercourse or culvert network to the west of Stanton Harcourt, and limit the risk of downstream flooding through control of the upstream catchment area run-off.	EA to provide discharge consent.			WODC to co-ordinate works with this proposal.	Riparian Owners to undertake this work to protect properties fronting Blackditch Road.	This scheme will provide 1 in 100 year flood protection.	Requires agricultural land at the junction of Stanton Harcourt Road and the B4449 to construct the balancing pond.	£50K to £100K. To be funded wholly by the Riparian Owners	
B	Provide a land drain from the rear of No 1 to the rear of No 10 Blackditch Road and provide a connection to Blackditch culvert, located under Blackditch Road, through the garden of No 10. Up-size Blackditch culvert, if required, connecting to the open watercourse running through the garden of No 8 Willowbrook.	EA to provide discharge consent.			WODC to co-ordinate works with this proposal.	Riparian Owners to undertake this work.	This scheme will aim to provide a minimum of 1 in 75 year flood protection.	Requires wayleave and access rights to construct new culvert under the garden of No.10 Blackditch Road.	£50K to £100K To be funded wholly by the Riparian Owners	

West Oxfordshire District Council

Parish Flood Defence Report – Options summary

Stanton Harcourt Parish

Version 1 – May 2008

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	Options	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 enquiries@westoxon.gov.uk					
C	Provide a land drain from the rear of No 1 to the rear "Bradwell" Blackditch Road. Provide a new culvert from the land drain laid under the garden of "Bradwell" and "The Row" to cross Blackditch Road at its lowest point. At this lowest point connect into the culvert the two existing road gullies. Following on the culvert to be piped across farm land, adjacent to Fox's House, to discharge into Blackditch watercourse in open channel.	EA to provide discharge consent.	OCC to undertake this work in conjunction with the Riparian Owners.		WODC to co-ordinate works with this proposal.	Riparian Owners to undertake work in conjunction with OCC.	This scheme will aim to provide a minimum of 1 in 75 year flood protection.	Requires wayleave and access rights to construct new culvert under the garden of "Bradwell" Blackditch Road and across farm land adjacent to Fox's House.	£100K to £200K To be jointly funded by OCC and the Riparian Owners.	
D	Clear out Blackditch bi-annually by dredging from Willowbrook to Stanton Harcourt to Bablock Hythe Road through Blackditch Farm and upsize culvert crossings as required.		OCC to upsize highway culverts if required.		WODC to co-ordinate works with this proposal.	Riparian Owners to undertake work in conjunction with OCC.	This scheme will aim to provide a minimum of 1 in 75 year flood protection.	Notice to be served on all land owners if required to gain access to Blackditch for dredging operations.	£5K to £20K. To be jointly funded by OCC and the Riparian Owners.	
E	Provide a new surface water sewer & hydrobrake under Stanton Harcourt to attenuate flow. Storage to be provided by SUDs facility along Blackditch. Highway, roof, yard and driveway drainage to be connected to the new sewer thus changing the 150mm diameter combined sewer to foul only. Thames Water to make adjustments to each property as required.	EA to provide advise on the design of the SUDs facility.		Thames Water to install new surface water sewer, hydrobrake and SUDs facility on Blackditch. All highway, roof, yard and driveway drainage to be connected to the new sewer thus changing the combined sewer to foul only.	WODC to co-ordinate works with this proposal.	Private surface water drainage connections to be diverted to the new drainage network by Thames Water.	Level of protection n dependant on land available for the SUDs facility.	Requires some land adjacent to Blackditch watercourse to be given over to the EA to create a wetland swale.	£100K to £200K. To be funded by Thames Water.	
F	Replace temporary field access culvert crossing in Stanton Harcourt Road.				WODC to co-ordinate works with this proposal.	Riparian Owner to undertake this work.	Replaces temporary culvert with pipe between ditches at depth.	Minor inconvenience for vehicles using field access	Up to £5K. To be funded wholly by the Riparian Owners	
Area 2 – Sutton										
	Following periods of heavy rain, several properties flood in the Sutton area of Stanton Harcourt. This is caused by any or a combination of the following: (i) Water table rising through ancient porous floors (ii) Overgrown/blocked watercourses and culvert crossings preventing a clear flow path (iii) Undersized culvert crossings (iv) Insufficient highway drainage (v) Excess surface water run-off entering and flooding the 150mm dia combined sewer.									

West Oxfordshire District Council

Parish Flood Defence Report – Options summary

Stanton Harcourt Parish

Version 1 – May 2008

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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 enquiries@westoxon.gov.uk					
A	Low lying properties at risk of water ingress through the floor to have floors re-laid with a hygroscopic membrane, to the satisfaction of WODC's Planning / Conservation Department. Work to be undertaken by the property owner.				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.	No effect on adjacent land.	£20K to £50K To be funded wholly by the Riparian Owners	
B	Open watercourse adjacent to Deans Farm House, Tudor Cottage and The Green to be cleared of excess vegetation and silt.				WODC to undertake this work.	Riparian Owners to fund this work.	This option will prevent water flooding the house or garden as required.	No effect on adjacent land.	Up to £5K. To be funded wholly by the Riparian Owners	
C	Culverted watercourses through the gardens of Tudor Cottage, Cobblestone Barn and Stoneleigh to be located, unblocked or up-sized as required. This will allow the free flow of water through an area of congested drainage where in places private owners have built over existing ditches.				WODC to undertake this work.	Riparian Owners to fund this work.	This option will prevent water flooding the house or garden as required	No effect on adjacent land.	£50K to £100K To be funded wholly by the Riparian Owners	
D	Excess vegetation and silt to be dredged and removed from the ditch course running east towards Cox's Farm in the direction of the River Thames. This ditch is not Enmained.				WODC to undertake this work and dispose of excavated matter as required. Minor culverts to be replaced by the Riparian Owners if under-size.	Riparian Owners to fund this work.	This scheme will aim to provide a minimum of 1 in 75 year flood protection.	Notice to be served on all land owners if required to gain access to ditch for dredging operations.	£20K to £50K. To be funded wholly by the Riparian Owners.	

West Oxfordshire District Council

Parish Flood Defence Report – Options summary

Stanton Harcourt Parish

Version 1 – May 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	
		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 enquiries@westoxon.gov.uk					
E	Provide additional highway drainage grips adjacent to Pond Cottage. Connection to be made to highway drainage ditch running from Tudor Cottage to "Kenway".		OCC to undertake this work to prevent highway flooding at Sutton Green adjacent to Pond Cottage.		WODC to co-ordinate works with this proposal.	Flooding adjacent to Pond Cottage and Sutton Farm Industrial Estate controlled.	Effective localised solution.	Work to be undertaken within highway boundary.	Up to £5K. To be funded wholly by OCC.	
F	Provide a new highway drainage ditch to the north side of Sutton Lane, adjacent to the garden of Sutton Farm, to discharge into the pond at Pond Cottage through a new culvert to be constructed under Sutton Lane.		OCC to undertake this work to prevent highway flooding at Sutton Farm adjacent to Pond Cottage.		WODC to co-ordinate works with this proposal.	Flooding adjacent to Pond Cottage and Sutton Farm Industrial Estate controlled.	Effective localised solution.	Work to be undertaken within highway boundary.	£5K to £20K. To be funded wholly by OCC.	
G	Re-direct roof, yard, drive and highway storm connections away from the adjacent combined sewer and connect into local watercourse or soakaway yet to be constructed.			Thames Water to undertake this work and provide funding accordingly.	WODC to co-ordinate works with this proposal.		Effective localised solution.	Work to be undertaken within highway boundary.	£5K to £20K. To be funded wholly by TW	

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Area 1- Blackditch

7.1.1 Maintenance

The following on-going maintenance is recommended:

- Option C (part) – OCC are to empty gullies twice per year to ensure free discharge of surface water adjacent to the junction of Blackditch Road and The Row.
- Option D – Riparian Owners are to clear Blackditch annually between Willowbrook and the Stanton Harcourt to Bablock Hythe Road. Debris to be disposed off site. Blackditch is not Enmained in this area.
- Option G – Replace temporary culvert crossing across field entrance off Stanton Harcourt Road.

7.1.2 Flood defence improvement schemes

The following flood defence improvement schemes are recommended:

Immediate (under 1 year)

- Option C (part) – Riparian Owners in conjunction with Oxfordshire County Council to provide a land drain to the rear of No1 to "Bradwell" in Blackditch Road connecting to Blackditch in culvert through the garden of "Bradwell". Thames Water connection to pick up two gullies in the low point of Blackditch Road opposite The Row.

Mid-Term (under 1-2 years)

- Option C (part) – Riparian Owners to increase the size of the Blackditch watercourse culvert crossings from Willowbrook to the Stanton Harcourt to Bablock Hythe Road. Restricted culvert crossings are impeding the flow path of Blackditch watercourse and surcharging occurs during peak rainfall events. Blackditch is not Enmained in this area.

Long-Term (2 to 5 years)

- Option A – Riparian Owner to provide a swale (SUD) and balancing pond with outlet control on land opposite "The Old Vicarage" at the junction with Stanton Harcourt Road and the B4449. Blackditch is not Enmained in this area.

7.2 Area 2 - Sutton

7.2.1 Maintenance

The following on-going maintenance is recommended:

Option H – OCC are to clear all highway drainage ditches and holding ponds, of plants and overgrowth, in the Sutton area on a regular basis e.g. twice per year.

7.2.2 Flood Defence Improvement Schemes

The following flood defence improvement schemes are recommended:

Immediate (under 1 year)

- Option B – Riparian Owner to clear excess vegetation and silt from the open watercourse adjacent to Deans Farm House, Tudor Cottage and The Green.
- Option C – Riparian Owner to locate, unblock and upsize if required the culverted watercourses running through the gardens of Cobblestone Barn, Stoneleigh and Sutton Farmhouse.
- Option D – Riparian Owners to remove excess vegetation and silt to be dredged and removed from the ditch course running east in the direction of Cox's Farm to the River Thames. The ditchcourse from Sutton Farm in the direction of the River Thames is not Enmained.

Mid-Term (under 1-2 years)

- Option A – Property owner of University Farmhouse to re-lay floors using a hygroscopic membrane, to the satisfaction of WODC's Planning / Conservation Department.
- Option E - Oxfordshire County Council to provide additional grips adjacent to Pond Cottage. Connection to be made to highway drainage ditch running from Tudor Cottage to "Kenway".
- Option F - Oxfordshire County Council to Provide new highway drainage ditch to the north side of Sutton Lane, adjacent to the garden of Sutton Farm, to discharge into the pond at Pond Cottage through a new culvert to be constructed under Sutton Lane.
- Option G – Thames Water to re-direct roof, yard, drive and highway storm connections away from the adjacent combined sewer and connect into local watercourse or soakaway yet to be constructed.

Appendix 1: Photos



Area 1 - Stanton Harcourt Road field entrance



Area 1- Blackditch culvert corner Blackditch Road and B449



Area 1 - Low Area rear of properties' in Blackditch Road



Area 1 - Farmyard adjacent to Fox's House



Area 1 - Gullies in low area of Blackditch Road



Area 1 - The Row



Area 1 - Blackditch open watercourse rear of No 8 Willowbrook



Area 1-Willowbrook



Area 1 - Blackditch open watercourse through Blackditch Farm



Area 1 - Blackditch through Stanton Harcourt Village



Area 2 - Sutton Pond Pipework Inlet



Area 2 - Sutton Pond Pipework Outlet



Area 2 - Sutton open watercourse through Tudor Cottage



Area 2 - Sutton Pond Pipework Inlet



Area 2 - Entrance to Sutton Farm Industrial Estate



Area 2 - Hardstanding at Sutton Farm industrial estate



Area 2 - Watercourse through Tudor Cottage, Sutton



Area 2 - Sutton watercourse in Sutton