

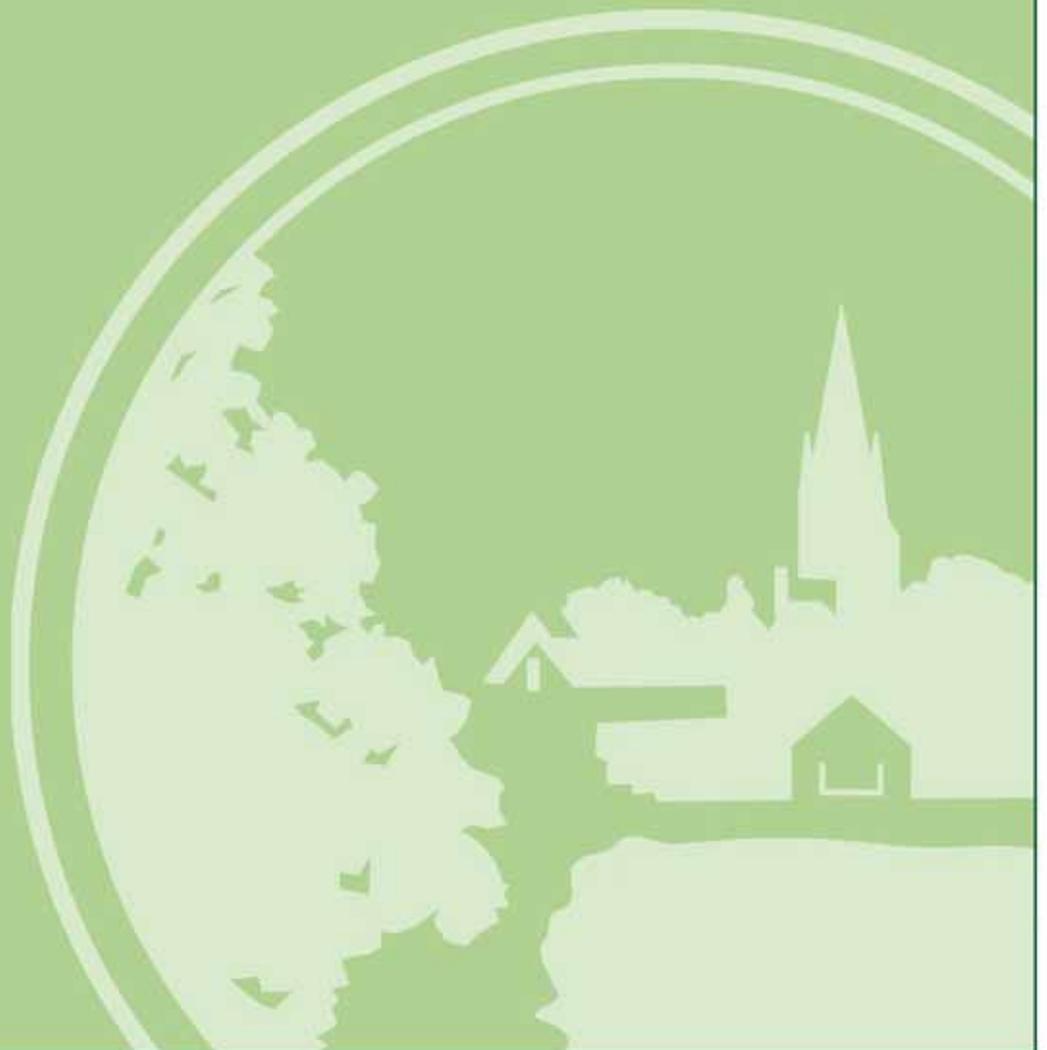


WEST OXFORDSHIRE  
DISTRICT COUNCIL

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# Parish Flood Report: Kingham

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 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 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 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**

For the avoidance of doubt, 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

- WODC Flood Grants totalling £250 given out.

### 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.
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 Meteorological 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 the village of Kingham 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 Kingham 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 Kingham and flood related issues raised by residents
- A presentation of the problems and causes of flooding in Kingham during July 2007.
- A summary of all the flooding issues and potential mitigation options.
- A breakdown of the recommendations for immediate, mid-term and long term actions including the responsible agency based on the options identified.

The summary below lists the main sources of flooding in Kingham that have been identified by the residents. More detail is provided regarding the specific locations and the causes in section 5 of the report.

#### **Sources of flooding**

- Surface water from farmland and farm track at north-eastern end of West End
- Highway run off along Church St
- River Evenlode, at Station Road
- Overflow from septic tanks backing up in Station Road

## **4.0 SURVEY**

### **4.1 Description of area**

The Parish of Kingham is approximately 106 Hectares (262 acres) in size. It is located approximately 5m south-west of Chipping Norton and has a population of approximately 800.

A map of the parish is shown in figure 1. The areas affected by flooding have been identified as (1), (2) and (3)

### **4.2 Survey approach**

Visual walk-over surveys have been undertaken. Photographs of some of the flood affected areas are in Appendix 1.

A review of all correspondence, received by the Council about the July 2007 flooding in the Parish of Kingham 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 Kingham in July 2007 are given in Table below;

<b>Date</b>	<b>Main participants and Venue</b>	<b>Description</b>
10 <sup>th</sup> August 2007	Kevin Jack and residents of West End	A look at the causes of flooding in the road
1 <sup>st</sup> October 2007	Kevin Jack and landowners at northern end of West End	Discussion of flooding remedies
3 <sup>rd</sup> July 2008	Kevin Jack, Keith Hartley- Chair of Kingham Parish Council and various residents.	Information gathering exercise to identify all flooding areas in Parish.

#### 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

To date the owners of 1 residential property in the Parish of Kingham has received Emergency Flood Relief Grant Aid, however it is acknowledged that this is not the total number of properties affected as some owners have been reluctant to claim.

#### 4.3.2 Flooding History

A flooding history relevant to the Parish of Kingham has been compiled since July 2007 by WODC and is stored both in a conventional filing system and electronically. A DVD recorded during a recent flooding event by a resident in West End has also been received by WODC.

## 5.0 PROBLEMS AND CAUSES

### 5.1 Plans

Appendix 2 contains 2 maps:

#### 1. Fig 1 – Areas affected by flooding within Kingham Parish

#### 2. Fig.2 – Environment Agency plan showing:

- Kingham parish boundary
- 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 (pt 1) – West End, length running SE to NW**

1 property applied for flooding grant after July 2007, on the western side of West End. Other properties were also affected but did not apply for a grant.

Flooding mostly originated from surface water runoff from the field at the north-eastern end of West End, combined with runoff from the farm track located at the northern end of West End.

The cause of flooding is ascertained to be:

- 5.2.1 Lack of maintenance on ditch adjacent to the field, running north-south
- 5.2.2 Surface water from the field not being channelled into the ditch so effectively by-passing it
- 5.2.3 Inadequate capacity of the drainage system in West End to deal with the combined run-off from the field and farm track
- 5.2.4 Kerb setts along West End are generally quite low, providing little defence from the water running along the channels

## **5.3 Area 1 (pt 2) – Church St, from The Green to Cozens Lane**

No properties applied for a flooding grant after July 2007, although it is known that the area in the vicinity of Kingham Stores was affected

The cause of flooding is ascertained to be:

- 5.3.1 Kerb setts along Church St are generally quite low, providing little defence from the water running along the channels. Some of these low areas are required to facilitate disabled / pram access
- 5.3.2 The drainage system in the road appears to rely on soakaway gullies rather than a network of surface water drains, although this is to be confirmed. Soakaways would appear to be inadequate when disposing of the high volume of highway run off during severe storm events.

## **5.4 Area 2 – Station Road, from Field Road to River Evenlode**

No properties applied for a flooding grant, but it is known that the road was flooded along this length and the Mill House Hotel was also affected.

The cause of flooding is ascertained to be:

- 5.4.1 The Evenlode exceeding its capacity and bursting its banks
- 5.4.2 Lack of maintenance work on ditch situated on eastern side of Station Road
- 5.4.3 Lack of maintenance work on ditch running through grounds of Mill House Hotel which feeds into the Evenlode contributed to the hotel grounds and Station Road being flooded.

It needs to be recognised, however, that unless the capacity of the Evenlode is increased clearing the adjacent ditches will be of no benefit during more severe storm events as the river will be unable to cope with the additional volume of water entering it.

## **5.5 Area 3 – Station Road / Churchill Heath Farm**

No properties were flooded by surface water, but there has been a report that foul sewage is backing up in the septic tanks for properties in Station Rd.

The cause of the problem is ascertained to be:

- 5.5.1** Highway drainage and overflow from the septic tanks flows through a culvert under Station Rd, across Churchill Heath Farm to discharge into a ditch near the railway line - the Environment Agency have agreed to sewage discharge into the ditch. The ditch is completely blocked, preventing the system from working effectively

## 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 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.

**Area 1 (pt 1) – West End, length running SE to NW**

<b>Area</b>		<b>1 (pt 1)</b>				
<b>Flooded Properties &amp; Causes</b>		One property applied for flooding grant, although it is known that others were also affected – estimated frequency every 6 months <u>Primary causes</u> – (i) Surface water run - off from farmland at north-eastern end of West End, (ii) Inadequate maintenance of ditch along north-eastern side of farm track, (iii) Lack of provision to channel surface water from farm entrance into ditch, (iv) Low kerb setts fronting properties				
<b>Options</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Description of options</b>		Reprofiling of ditch along middle section to convey water away from West End / regular maintenance work on ditch	Construction of a bund across farm entrance to divert water into ditch	Installation of a land drain within the field with a direct connection into the ditch	Raising of kerb setts across property entrances / regrading of carriageway	Regular cleaning of highway gullies
<b>Responsible Agencies</b>	<b>EA</b> For queries Tel: 08708 506506					
	<b>OCC</b> For queries Tel: 08453 101111				OCC to raise kerb setts / regrade carriageway where necessary	OCC to undertake regular gully cleaning
	<b>Thames Water</b> For queries Tel: 08459 200800					
	<b>WODC</b> For queries Tel: 01993 861000	WODC to co-ordinate works	WODC to co-ordinate works. Unclear whether they should undertake work themselves due to legal implications			
	<b>Private/Other Organisations</b>	Work to be funded by landowner.	Land across entrance is unregistered, so ownership is unknown.	Work to be funded and undertaken by landowner.		
<b>Effectiveness/ Effects on adjacent land</b>		Will help to prevent flooding of properties	Will help to prevent flooding of properties	Will help to prevent flooding of properties	Will help to prevent flooding of properties	Will help to prevent flooding of properties
<b>Cost</b>		Up to £5K	Up to £5K	Up to £5K	£5 – £10K	Up to £5K

**Area 1 (pt 2) – Church St, from The Green to Cozens Lane**

<b>Area</b>		<b>1 (pt 2)</b>		
<b>Flooded Properties &amp; Causes</b>		No properties applied for a flooding grant, although it is known that there was flooding in the area of Kingham Stores. Estimated frequency every 6 months <u>Primary causes</u> – (i) Excess highway runoff from Church St, (ii) Inadequate highway drainage, (iii) Low kerb setts fronting properties		
<b>Options</b>		<b>1</b>	<b>2</b>	<b>3</b>
<b>Description of options</b>		Investigate whether gullies are simple soakaways or are connected into highway drainage network	Increased maintenance of gullies / soakaways / highway drainage	Raising of setts across properties that may be affected
<b>Responsible Agencies</b>	<b>EA</b> For queries Tel: 08708 506506			
	<b>OCC</b> For queries Tel: 08453 101111	OCC to advise. If gullies are soakaways will need cleaning out and possibly enlarging. If highway drainage exists the whole system should be checked for blockages	OCC to undertake work on regular basis	OCC to undertake work where necessary
	<b>Thames Water</b> For queries Tel: 08459 200800			
	<b>WODC</b> For queries Tel: 01993 861000			
	<b>Private/Other Organisations</b>			
<b>Effectiveness/ Effects on adjacent land</b>		Will help to prevent flooding of properties	Will help to prevent flooding of properties	Will help to prevent flooding of properties
<b>Cost</b>		Up to 5K	Up to £5k	Up to £5K

**Area 2 – Station Road, from Field Road to River Evenlode**

Area		2			
<b>Flooded Properties &amp; Causes</b>		The Mill House Hotel was flooded, as was the road along this section. Estimated frequency once a year. <u>Primary Causes</u> – (i) River Evenlode bursting its banks, (ii) Ditch on eastern side of Station Rd which outfalls into river is overgrown, (iii) ditch in grounds of hotel which outfalls into river is overgrown.			
<b>Options</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Description of options</b>		Investigate possibility of river being de-silted	Arrange with riparian owners to have ditch on eastern side of Station Rd cleared on regular basis	Approach landowner for Mill House hotel to have ditch cleared on regular basis	More frequent cleaning of highway drainage
<b>Responsible Agencies</b>	<b>EA</b> For queries Tel: 08708 506506	EA to advise / arrange for work to be undertaken. They have advised they will be undertaking a thorough clearance of the Evenlode from Bledington Mill to Bruern Sluice in Aug – Sept 2008			
	<b>OCC</b> For queries Tel: 08453 101111				OCC to undertake
	<b>Thames Water</b> For queries Tel: 08459 200800				
	<b>WODC</b> For queries Tel: 01993 861000		WODC to co-ordinate works	WODC to co-ordinate works	
	<b>Private/Other Organisations</b>		Work to be funded by riparian owners.		
<b>Effectiveness/ Effects on adjacent land</b>		None	If capacity of Evenlode is inadequate for additional water, will be of no benefit during severe events	Prevents flooding of hotel. If capacity of Evenlode is inadequate for additional water, hotel and Station Rd may still be flooded during severe events	Prevents flooding of hotel grounds and highway
<b>Cost</b>		£5k to £10k	Up to £5k	Up to £5K	Up to £5k

### Area 3 – Station Rd / Churchill Heath Farm

<b>Area</b>		<b>3</b>
<b>Flooded Properties &amp; Causes</b>		No properties were flooded by surface water, but overflow sewage is backing up in septic tanks along Station Rd. Estimated frequency once every 3 months. <u>Primary cause</u> – Blocked ditch along railway line at Churchill Heath Farm
<b>Options</b>		<b>1</b>
<b>Description of options</b>		
<b>Responsible Agencies</b>	<b>EA</b> For queries Tel: 08708 506506	
	<b>OCC</b> For queries Tel: 08453 101111	
	<b>Thames Water</b> For queries Tel: 08459 200800	
	<b>WODC</b> For queries Tel: 01993 861000	WODC to approach landowner and request ditch clearance
	<b>Private/Other Organisations</b>	Landowner will need to clear ditch for unobstructed flow and maintain it on a regular basis
<b>Effectiveness/ Effects on adjacent land</b>		Prevents backup and flooding of property grounds with sewage
<b>Cost</b>		Up to £5K

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 Area 1 (pt 1) – West End, length running SE to NE**

#### **7.1.1 Maintenance**

The following on-going maintenance is recommended:

- Action 1 – Landowner on north-eastern side of West End to ensure his ditch is cleared on a regular basis
- Action 5 – OCC to ensure gullies are cleaned more frequently

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

The following flood defence improvement schemes are recommended:

##### Immediate (under 1 year)

- Action 1 - Landowner to re-profile middle section of ditch
- Action 2 - bund to be constructed across field entrance
- Action 3 - Landowner to install land drain directly from field into ditch

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

- Action 4 – OCC to raise kerb setts / re-profile road outside affected properties

### **7.2 Area 1 (pt 2) – Church St, From The Green to Cozens Lane**

#### **7.2.1 Maintenance**

The following on-going maintenance is recommended:

- Action 2 – OCC to ensure highway gullies / soakaways are cleaned more frequently

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

The following flood defence improvement schemes are recommended:

##### Immediate (under 1 year)

- Action 1 - Investigate with OCC whether the gullies are connected to a highway drainage system. OCC to check for blockages and clear if necessary

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

- Action 3 – OCC to consider raising kerb setts / re-profile road outside affected properties

### **7.3 Area 2 – Station Rd, from Field Rd to River Evenlode**

#### **7.3.1 Maintenance**

The following on-going maintenance is recommended:

- Action 2 – landowner to clear ditch on east side Station Rd
- Action 4 – OCC to clean highway gullies on regular basis
- Action 3 – Millhouse Hotel to ensure ditch within their land is cleared on regular basis and sluice gate is maintained / adjusted as necessary

### **7.3.2 Flood defence improvement schemes**

The following flood defence improvement schemes are recommended:

#### Immediate (under 1 year)

- Action 1 - Investigate with EA the possibility of The Evenlode being de-silted to provide extra capacity

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

- Action 1 – if appropriate, EA to de-silt Evenlode

## **7.4 Area 3 – Station Road / Churchill Heath Farm**

### **7.4.1**

#### **Maintenance**

The following on-going maintenance is recommended

- Action 1 – landowner to clear ditch adjacent to railway line

## Appendix 1: Photographs



Area 1 - Ditch and farm track at northern end of West End post clearing work in February 2008



Area 1 – Church St, outside Kingham Stores



Area 1 – Church St, looking towards Cozens Lane



Area 1 – Ditch at north-eastern end of West End at July 2008



Area 1 – culvert end at southern end of ditch on NE side of West End



Area 1 - Farm entrance at NE end of West End



Area 1 – previous unsuccessful attempt to redirect water into ditch using bund



Area 2 - River Evenlode, from bridge on Station Road



Area 2 -Station Road, looking southwards from bridge



Area 2 – sluice for ditch in grounds of Mill House Hotel



Area 2 – culvert from highway gully outfalling into hotel ditch



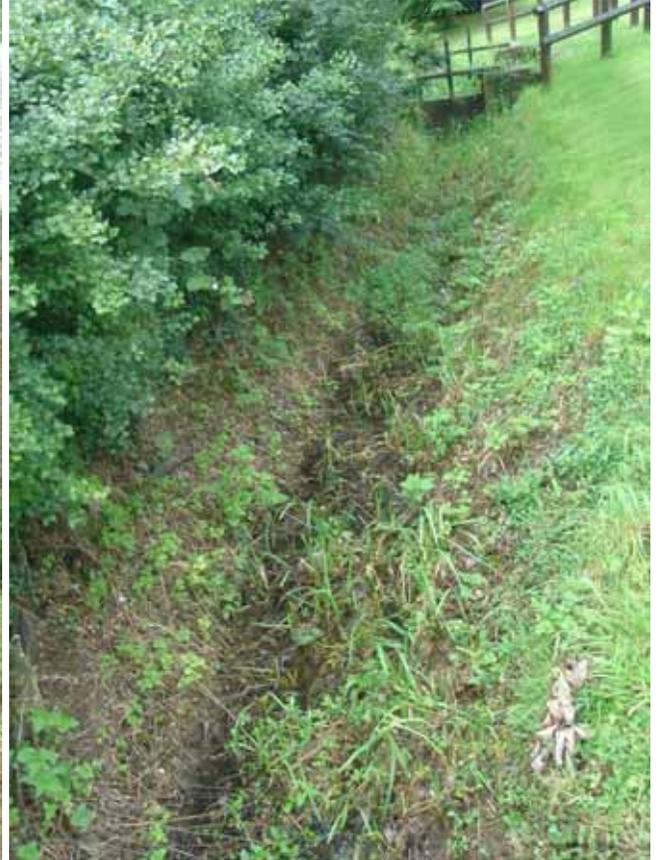
Area 2 – Hotel ditch where it joins river Evenlode



Area 2 -overgrown ditch on east side of Station Road



Area 2 – overgrown ditch on east side of Station Road where it meets River Evenlode



Area 2 – ditch in grounds of Mill House Hotel



Area 3 -Western boundary of Churchill Heath Farm, looking from Station Road



Area 3 - Properties along north side of Station Road



Area 3 - Land at Churchill Heath Farm, looking towards Station Road



Area 3 - Overgrowth in ditch along western boundary of Churchill Heath Farm



Area 3 -Sewage in blocked ditch along western boundary of Churchill Heath Farm