



WEST OXFORDSHIRE  
DISTRICT COUNCIL

[www.westoxon.gov.uk](http://www.westoxon.gov.uk)

# Parish Flood Report: **Ramsden**

July 2008

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



## Contents

1.0	INTRODUCTION .....	3
2.0	THE DISTRICT COUNCIL'S ACHIEVEMENTS OVER THE PAST 12 MONTHS.....	6
3.0	EXECUTIVE SUMMARY .....	7
4.0	SURVEY.....	8
5.0	PROBLEMS AND CAUSES .....	11
6.0	OPTIONS.....	12
7.0	CONCLUSIONS AND RECOMMENDATIONS.....	16
	Appendix 1: Photographs.....	18
	Appendix 2: Maps .....	27
	Appendix 3: Glossary.....	30

## **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.

---

<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

### 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
- 112 Red Cross Flood Grants totalling £211,590 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 Ramsden

### 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 during 2008 to progress this
Progress the Strategic Flood Risk Assessment
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 Ramsden 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 in Ramsden during July 2007 and potential mitigating solutions.

Ramsden is a rural parish located approximately 2.5 miles to the north of Witney. Historically a small watercourse drained the valley and this was culverted in the early 20<sup>th</sup> century.

Visual walkover surveys have been undertaken of the flooded areas and properties. Meetings have been held with the affected residents, who have been in discussion with OCC, WODC and the EA. WODC have record of 14 applications for Grant Aid in Ramsden.

Flooding experienced in Ramsden has been assessed as two separate areas and flooding was largely due to surface water run-off, with some sewer flooding. Area 1 is the High Street area, which suffered from highway flooding, entering the village from land to the west and north. Area 2 is Lower Farm and the surrounding area. This area was affected by overland flow and some sewer flooding.

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

This report also includes Appendix 1 detailing the Options Summary, Appendix 2 showing Photographs and Appendix 3 Maps.

## 4.0 SURVEY

### 4.1 Description of Area

The village of Ramsden is situated near the top of a steep sided valley, which was historically drained by a small stream that was culverted in the early 20<sup>th</sup> Century. It is located approximately 2.5 miles to the north of Witney and is rural in nature. OS mapping indicates the area contains a number of drainage ditches. The area is characterised by perched aquifers, which generate a large amount of groundwater driven flooding at locations where these aquifers meet the local impermeable clay layer.

The approximate catchment size from FEH shows the area upstream of the village is around 1.5 to 2km<sup>2</sup>. The culvert will only be able to drain a part of this area, as the culvert length and position will mean that the original stream has become disconnected from its tributary streams.

### 4.2 Survey Method

A visual walk-over survey of the area affected by the July 2007 flooding has been undertaken, including the properties on the High Street north and south of the War Memorial, Lower Farm and Wilcote Manor

See Appendix 2 – Photographs.

### 4.2 Meetings

**Table 1: Summary of meetings and flooding descriptions**

Date	Location	Description
16.03.07	Ramsden Village	<ul style="list-style-type: none"><li>• Site visit Jeff Mason WODC and W.Barker OCC to assess drainage improvement works following Spring 2007 flooding</li></ul>
07.09.07	Ramsden Village	<ul style="list-style-type: none"><li>• Meeting for villagers to discuss July 2007 flooding. Present – Jeff Mason WODC Local Villagers</li><li>• 14 Properties flooded, attributed to flooding from fields surrounding village and surcharged drainage system.</li><li>• Problems caused by water inundating village from hill slopes, neighbouring agricultural land and inadequate or overwhelmed drainage system within village</li><li>• Damage to property, some sewage flooding to properties also reported</li></ul>
23.06.08	Ramsden Village	<ul style="list-style-type: none"><li>• Meeting between villagers and Adrian Potter, Scott Wilson to discuss July 2007 flooding and ongoing concerns</li><li>• Flooding over Diocesan land and flooding from fields in region of Wilcote Manor highlighted as concerns</li></ul>



--	--	--

### 4.3 Stakeholder Communications and actions

**Table 2: Stakeholder Communications and actions**

Stakeholder	Description
TW	<ul style="list-style-type: none"> <li>Jenny Elliott of Thames Water has been approached regarding plans for further work in Ramsden – no response, needs follow up</li> </ul>
WODC	<ul style="list-style-type: none"> <li>Prior to July flooding, Jeff Mason organised survey work for village</li> <li>Jeff Mason met with ODBF to discuss works on Glebe land. Planning partners – Carter Jonas, representing Diocese stated they did not believe flooding directly caused by management of Glebe land and ODBF unprepared to pay for works. Email of August 2007 stated they were prepared to consider granting consent for works across land.</li> <li>Damage to property, some sewage flooding to properties also reported</li> <li>WODC visited Ramsden and already investigated problem areas and identified several possible solutions, including the use of improved highway grips, ditches and use of attenuation ponds</li> <li>WODC provisionally arranged trenching work with contractors in June 2007. Residents state they have no knowledge of this being work being completed</li> </ul>
OCC	<ul style="list-style-type: none"> <li>In conjunction with WODC, a site visit in April 2007 came up with a scheme of drainage proposals for the village. Site visits and correspondence from villagers indicate the kerbing improvements have been carried out. The ditch and attenuation pond works still need to be done</li> <li>OCC contacted June 2008 to discuss current situation – are prepared to carry out essential grip works and investigate instances where no current highway drainage exists. Gordon Hunt stated that although roadside ditch may transfer highway run-off, maintenance and upkeep is responsibility of riparian owner</li> </ul>
ODBF	<ul style="list-style-type: none"> <li>Diocese client – Jonas Planning have been contacted June 2008 to confirm situation. Diocese will not pay for flood defence works but in principle happy to allow access to land for mitigation works. This depends on the scale and magnitude of proposed mitigation works.</li> </ul>

### 4.4 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
- 'Hardship' Grants
- Red Cross Grants

To date the owners of 14 residential properties in Ramsden have received Emergency Flood Relief Grant Aid, however it is acknowledge this is not the total number of properties affected in the Parish as some owners have not claimed

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.

## **5.0 PROBLEMS AND CAUSES**

### **5.1 Plans**

The map in appendix 2 shows areas in Ramsden where properties flooded in July 2007 and where owners have made claims for grant assistance. The flooding can be broadly split into two areas being:

Area 1 - the High Street area to the north of the cross roads and Akeman Street

Area 2 - Lower Farm and the surrounding area

The EA define areas of flooding as

- 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% 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 flooding – Flood Zone 2 (previously referred to as 1 in 1000 year flooding)  
A plan showing the 2008 Environment Agency 0.1% 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

There are no Flood Zones or main watercourses in Ramsden

Following the site visit and discussions with villagers on 23<sup>rd</sup> June 2008, the issues were identified as follows

### **5.2 Area 1 – High Street / Cross roads**

During July 2007, water affected properties along the High Street, particularly those that sit south of the crossroads at Wilcote Lane/Akeman Street. The ditch that channelled run-off down the side of Akeman Street has become partly filled in and the remaining grips now allow water to flow freely onto the road. Akeman Street acts as a conveyor for run-off from the surrounding hillsides and perched aquifers, the water flowing down Akeman Street was unable to drain into the main culvert on High Street as this was already running full. The culvert running down Skippet Lane then High Street and on through the village has replaced the original watercourse in the early part of the last century. The roads now act as watercourses during high rainfall events. There are also some reports of flooding from sewage in properties on the High Street above the cross roads.

### **5.3 Area 2 – Houses in region of Lower End and to the north**

Flooding is reported to have come from agricultural fields to the north of The Grange on Wilcote Lane. The Grange itself was not directly flooded, although the run-off from the fields to the north and north east created a large pond in the garden behind the stone wall boundary with Wilcote Lane. This created a pool of considerable depth, which continuously leaked through a length of 30m stone walling directly onto Wilcote Lane. Water is able to flow due downhill, across the Glebe land and into the valley floor as a plume, affecting properties lower down in the village.

The properties in the area of Lower End were directly affected by run-off from the hillsides to the west; this will be mainly due to overland flow and saturation of the perched aquifers which characterise this area. Manhole covers in the centre of the road opposite the Lower Farm

residential area were pushed open during the floods, with sewage reported to have emanated from them.

## **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 I. 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.

Parish Flood Options										
Ramsden										
Version 1 – June 2008										
Option ref	Flood Overview	Description of work required					Key issues			Comments
	Options	Environment Agency	Oxfordshire County Council	Thames Water	WODC	Private	Effectiveness	Affects on adjacent land	Cost	
		For queries Tel 08708 506 506 Or email enquiries@environment-agency.gov.uk	Main switchboard: 0845 310 1111 Or e-mail: online@oxfordshire.gov.uk	Enquiries: 0845 200 800	Switchboard: 01993 861 000					
<b>Area 1 – High Street in vicinity of cross roads</b>										
	<b>Flooding down roads into village via Akeman Street, Wilcote Lane, Skippett Lane and from Garden Centre to North of B4022</b>									
<b>A</b>	South side of Wilcote Lane  WODC have previously identified that ditches need clearing at the top of Wilcote Lane and that grips can be dug on LH side of road to channel this water away downhill south. This is then to be managed as per options in Area 2.		OCC Highways to carry out grip works on Wilcote Lane		WODC to co-ordinate	Landowner co-operation needed to clear and maintain ditches	Will reduce run-off flowing down Wilcote Lane into village		to £5000 construction	
<b>B</b>	Skippett Lane / High Street  Use of ditches, grips and attenuation pond at bottom of Skippett Lane - in land above Upper Farm		OCC Highways to investigate carrying out grip works on Skippett Lane		WODC to co-ordinate	Landowner co-operation needed to investigate potential siting of attenuation pond.	Will store run-off from Skippett Lane above village	Land take for flood storage	to £5000 study to £20,000 construction	Source of funding to be agreed
<b>C</b>	B4022 junction  Bund in fields above B4022 to collect run-off from fields below Garden Centre with pipe link to attenuation pond in top field on left hand side of High Street below B4022. Also consult with Garden Centre regarding access road drainage solutions				WODC to co-ordinate	Garden centre liaison needed to investigate access road drainage. Liaise with Parish Council re siting of attenuation pond – top field is PC land.	Run-off from garden centre and B4022 will be stored above village	Land take for flood storage	to £5000 study to £20,000 construction	
<b>D</b>	Re-profile High Street road surface at junction with B4022 to divert run-off into top LH field for attenuation		OCC to investigate possibility of reshaping road surface		WODC to co-ordinate	Liaise with Parish Council regarding siting of attenuation pond -	As above		to £5000 study to £20,000 construction	Source of funding to be agreed

Option ref	Flood Overview	Description of work required					Key issues			Comments
		Environment Agency	Oxfordshire County Council	Thames Water	WODC	Private	Effectiveness	Affects on adjacent land	Cost	
	Options	For queries Tel 08708 506 506 Or email enquiries@environment-agency.gov.uk	Main switchboard: 0845 310 1111 Or e-mail: online@oxfordshire.gov.uk	Enquiries: 0845 200 800	Switchboard: 01993 861 000					
<b>Area I – High Street in vicinity of cross roads</b>										
<b>E</b>	High Street nr B4022  No current highway drainage. Investigate feasibility of cutting ditches/gullies from B4022 to Skippet Lane and link to a new storage area on open land opposite Skippet Lane junction		OCC Highways to investigate potential for highway drainage down to Skippet Lane and creation of attenuation pond		WODC to co-ordinate	Liaise with Parish Council regarding siting of attenuation pond - Village would need to fund	Run-off from Skippet Lane and B4022 / High Street will be stored above village	Land take for flood storage	to £5000 study to £20,000 construction	
<b>F</b>	Individual properties to be fitted with demountable portable flood defence systems					Private residents to fit demountable defences, waterproof lower walls etc	Will protect individual properties		to £5000	
<b>F</b>	Riparian owners to modify land management – contour ploughing, re-instate hedgerows and ditches. This could benefit at Wilcote Farm				WODC to co-ordinate	Private landowners to examine how they can improve flood management on their land	Will reduce overland flow across fields		to £5000	
<b>H</b>	Jet gullies and culvert on High Street, Skippet Lane and Lower Lane.		OCC to jet gullies				Will help to maintain capacity of highway drains		to £5000	
	<b>Sewage flooding of to several properties on High Street</b>									
<b>I</b>	Investigate any potential for upgrade of sewage pumping station or increasing storm overflow tank capacity			TW to investigate			Improvements will reduce risk of sewage flooding		to £5000 study	

Option ref	Flood Overview	Description of work required					Key issues			Comments
		Environment Agency	Oxfordshire County Council	Thames Water	WODC	Private	Effectiveness	Affects on adjacent land	Cost	
	<b>Options</b>	For queries Tel 08708 506 506 Or email enquiries@environment-agency.gov.uk	Main switchboard: 0845 310 1111 Or e-mail: online@oxfordshire.gov.uk	Enquiries: 0845 2 00 800	Switchboard: 01993 861 000					
<b>Area 2 – Lower End</b>										
	<b>Flooding caused by run-off from fields of Wilcote Farm estate and also run-off from hill slopes behind Lower End. Also run-off flowing down Akeman Street</b>									
<b>A</b>	Construct a bund, flow transfer ditch and attenuation pond on land to the N of The Grange				WODC would need to liaise on construction details	Private works to be completed by villagers	To prevent flood flows reaching the village	Land take for flood storage	to £20,000 construction	Funding to be arranged
<b>B</b>	Dig ditch across Glebe land, plus earth bund behind Yewcot / Park Cottages. Water disposal in offline - storage pond below Park Cottage or use Option C. WODC suggested similar				WODC would need to liaise on construction details	Private works by villagers Subject to landowner agreement and liaison with OBDF	Will guide flow away from properties	Land take for flood storage	to £20,000 construction	Funding to be arranged
<b>C</b>	As Option B above but dig secondary flood relief ditch from area below Park Cottage to transfer flow quickly away down valley to open watercourse below Blackbird Assarts Lane.				WODC would need to liaise on construction details	Private works by villagers	Will protect properties and reduce water levels in village	Excavation through private land	to £50,000 construction	Funding to be arranged
<b>D</b>	Arrange CCTV survey of entire main culvert through village to establish condition		OCC highways to arrange CCTV survey				Ensure culvert is operating at full capacity		to £5,000	
<b>E</b>	Basic level monitoring to measure groundwater levels in perched aquifer	EA would Water Resource Team need to be consulted.				Private works by villagers	Groundwater warning system		to £5,000	Potential for EA funding
<b>F</b>	Re-instatement of ditch along Akeman Street at playing fields. Cut grips where needed		OCC Highways to inspect current drainage provision here		WODC to co-ordinate	Ditch will be riparian owner responsibility	Reduce run-off onto Akeman Street		to £5000 study to £5000 construction	
<b>G</b>	Investigate potential for on-site containment of flow on playing fields at Akeman Street through attenuation pond. Riparian land owned by village				WODC to advise	Landowner / villagers to bear cost	Reduce run-off onto Akeman Street		to £20,000 construction	
	<b>Sewage flooding at Lower Farm – sited downhill of pumping station</b>									
<b>H</b>	Investigate pipe connections to pumping station at this location			TW to investigate					to £5,000	

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 Area 1 – High Street**

#### **7.1.1 Maintenance**

- Option I - OCC to maintain gullies / culvert linking and jet out where required on Skippet Lane, Akeman Street and Lower End.

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

##### Immediate (under 1 year)

- Option A - OCC Highways to carry out grip works to North of Wilcote Lane, landowner to carry out ditch clearance at same location.
- Option G - Individual properties to be fitted with demountable flood defence systems - residents to purchase.
- Option H - Riparian owners to modify land management – contour ploughing, re-instate hedgerows and ditches. This would improve the current situation at Wilcote Farm.

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

- Option B - Addressing run-off down Wilcote Lane by siting of attenuation pond above vicarage – Riparian owner negotiation required.
- Option C – Addressing run-off down Skippet Lane via use of grips, flood routing ditches and construction of attenuation pond at bottom of Skippet Lane - in land above Upper Farm.
- Option D - Construct bund in fields above B4022 to collect run-off from fields to the south of the Garden Centre, dig attenuation pond in top field on left hand side of High Street below to the south of the B4022 and construct piped link from bund to new attenuation pond. Also consult with Garden Centre regarding access road drainage solutions.
- Option E - As Option D, but re-profile High Street road surface at junction to channel water off to left into top field for attenuation.
- Option F - Investigate feasibility of cutting ditches/gullies from B4022 to Skippet Lane and link to a new storage area on open land opposite Skippet Lane junction to capture run-off from both Skippet Lane and Garden Centre.
- Option J - Investigate any potential for upgrade of sewage pumping station or increasing storm overflow tank capacity.



## 7.2 Area 2 – Lower End

### 7.2.1 Flood defence improvement schemes

#### Immediate (under 1 year)

Residents plan to construct a bund, transfer ditch and attenuation pond on land to the N of The Grange (Option A)

Re-instatement of ditch along Akeman Street at playing fields – riparian owner. OCC to Cut grips where needed (Option F)

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

- Option B - Water disposal in off-line storage pond below Park Cottage.
- Option C - Dig ditch across Glebe land and construct earth bund behind Yewcot / Park Cottages, dig secondary flood relief ditch from area below Park Cottage to transfer flow quickly away down valley to open watercourse below Blackbird Assarts Lane.
- Option D - Arrange CCTV survey of entire culvert to establish its condition.
- Option E – Install basic level monitoring to measure groundwater levels in perched aquifer to monitor levels.
- Option G - Investigate potential for on-site containment of flow on playing fields at Akeman Street through attenuation pond. Riparian land owned by village.
- Option H - Investigate pipe connections to pumping station at this location

## **Appendix I: Photographs**

**Area I – High Street**



Top of catchment – access road up to Garden Centre, flows run down from here along High Street



View down High Street to village from B4022 – note steep gradient, lack of road drainage



Top left hand field below B4022 – potential site for attenuation pond



High Street looking downhill towards war memorial – note recent kerbing work





Akeman Street junction with war memorial – ponding occurred here July 07

**Area 2 – Lower Farm**



Source of flood flows above The Grange



Site of proposed bund and flood routing ditch – above The Grange. Private works proposed by villagers



Flooding debris in garden of property



Flooding scour down Wilcote Lane – due to lack of highway drainage and run-off from land





Lower End road – sloping drive down to properties and damaged kerbstones



Lower End road – highway flooding down private drive July 2007





Route of flood flows from Wilcote Manor across land to rear of cottages



Route of flood flows from Wilcote Manor across land to rear of - cottages further downhill



Destination of flow route from Wilcote Manor & location of potential attenuation pond at Lower Lane



Flood flows onto road at Lower Lane - 2007