



Chiltern
District Council



South Bucks
District Council



Buckinghamshire County Council


Preliminary Flood Risk Assessment Report Final



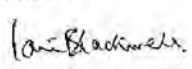



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Executive summary

This report summarises a Preliminary Flood Risk Assessment (PFRA) that was undertaken for Buckinghamshire County Council (BCC). BCC has adopted the Lead Local Flood Authority (LLFA) role for Aylesbury Vale, Chiltern, South Bucks and Wycombe District Council areas. As a LLFA, BCC has responsibility for managing flooding from local sources. These sources are primarily surface water runoff, groundwater and ordinary watercourses (i.e. watercourses which are not designated as main river). Flooding from Main Rivers is not considered as part of this study, however the Environment Agency is continuing to manage this risk in partnership with BCC and other parties. Since much of the local knowledge and technical expertise necessary for managing local flood risk lies with the District councils, Internal Drainage Board and other partner organisations (including the Environment Agency and water companies), this PFRA report has been developed with the Buckinghamshire Strategic Flood Management Group.

This report fulfils BCC's first requirement of the Flood Risk Regulations 2009, which aim to provide a consistent approach to flood risk across Europe. The PFRA considers local sources of flood risk. Flood risk in the county from main rivers (and the coast) is being addressed by the Environment Agency.

Information on past flooding has been collected from BCC, the four District Councils and other parties. All collected flood records have been tabulated and mapped to inform future flood risk management. Records of past flooding provided by the District Councils and other consultees varied widely in terms of the quantity and the quality. Flooding from local sources has been experienced in locations across the county in July 2007, November – December 2006, January – March 2003, January – June 2001 and August 1999, in addition to other more localised events. The only event in the county which is considered to have had significant harmful consequences on a European scale is the groundwater dominated flood event which occurred in the winter of 2000/1. As a result of prolonged above average rainfall from September 2000, groundwater levels, particularly in the Chalk aquifer, rose to the highest recorded levels at many sites across the county. Extensive groundwater flooding occurred, mainly in the upper normally dry valleys of the Chalk escarpment and therefore affected basements, ground floor properties, roads and public spaces in Chiltern, South Bucks and Wycombe Districts for many months.

In terms of future flooding, the best available information to determine areas at risk from local sources is the Environment Agency's Flood Map for Surface Water (FMfSW), which shows areas at risk of flooding at an annual probability of 1 in 200 (0.5%). In areas where there is a risk of flooding from groundwater and/or ordinary watercourses, the FMfSW indicates where the flooding from these sources is likely to be greatest. For these reasons the FMfSW has been selected to represent the 'Locally Agreed Surface Water Information' in Buckinghamshire.

In terms of flooding of properties, the main risk areas identified by the FMfSW maps are Aylesbury, High Wycombe, Amersham/Chesham and Marlow. However, in none of these four areas do the number of properties at risk exceed thresholds set by Defra to define them as Flood Risk Areas. This means that the risk is not viewed as significant enough to report to the European Commission. Instead, the identified risk is better managed through more local approaches as identified by BCC working with the Buckinghamshire Strategic Flood Management Group. For example, Surface Water Management Plans are being prepared for Chesham and High Wycombe and these will be reported separately.

Glossary

Term	Definition
Aquifer	A source of groundwater comprising water bearing rock, sand or gravel capable of yielding significant quantities of water.
Asset Management Plan	A plan for managing water and sewerage company (WaSC) infrastructure and other assets in order to deliver an agreed standard of service.
ASiSWF	Areas Susceptible to Surface Water Flooding
BCC	Buckinghamshire County Council
Catchment Flood Management Plan	A high-level planning strategy through which the Environment Agency works with their key decision makers within a river catchment to identify and agree policies to secure the long-term sustainable management of flood risk.
CFMP	Catchment Flood Management Plan
Climate Change	Long term variations in global temperature and weather patterns caused by natural and human actions.
Culvert	A channel or pipe that carries water below the level of the ground.
Defra	Department for Environment, Food and Rural Affairs
DEM	Digital Elevation Model
DG5 Register	A water-company held register of properties which have experienced sewer flooding due to hydraulic overload, or properties which are 'at risk' of sewer flooding with an annual probability of 1 in 20 (5%) or more.
DTM	Digital Terrain Model
EA	Environment Agency
Indicative Flood Risk Areas	Areas determined by the Environment Agency as indicatively having a significant flood risk, based on guidance published by Defra and the Welsh Assembly Government (WAG) and the use of certain national datasets. These indicative areas are intended to provide a starting point for the determination of Flood Risk Areas by LLFAs.
FMfSW	Flood Map for Surface Water
Flood defence	Infrastructure used to protect an area against floods such as floodwalls and embankments; they are designed to a specific standard of protection (design standard).
Flood Risk Area	An area determined as having a significant risk of flooding in accordance with guidance published by Defra and WAG.
Flood Risk Regulations ('the Regulations')	Transposition of the EU Floods Directive into UK law. The EU Floods Directive is a piece of European Union (EU) legislation to specifically address flood risk by prescribing a common framework for its measurement and management.
Flood & Water Management Act	Part of the UK Government's response to Sir Michael Pitt's Report on the Summer 2007 floods, the aim of which (partly) is to clarify the legislative framework for managing surface water flood risk in England.
Fluvial Flooding	Flooding resulting from water levels exceeding the bank level of a river.
IDB	Internal Drainage Board
LDF	Local Development Framework
LLFA / Lead Local Flood Authority	Local Authority responsible for taking the lead on local flood risk management
LiDAR	Light Detection and Ranging

Term	Definition
Local Resilience Forum	A multi-agency forum, bringing together all the organisations that have a duty to cooperate under the Civil Contingencies Act, and those involved in responding to emergencies. They prepare emergency plans in a co-ordinated manner.
LPA	Local Planning Authority
LRF	Local Resilience Forum
Main River	A watercourse shown as such on the Main River Map, and for which the Environment Agency has responsibilities and powers. N.B. Main River designation is not an indication of size, although it is often the case that they are larger than Ordinary Watercourses.
NRD	National Receptor Dataset – a collection of risk receptors produced by the Environment Agency
Ordinary Watercourse	All watercourses that are not designated Main River, and which are the responsibility of Local Authorities or, where they exist, IDBs. N.B. Ordinary Watercourse does not imply a "small" river, although it is often the case that Ordinary Watercourses are smaller than Main Rivers.
Partner	A person or organisation with responsibility for the decision or actions that need to be taken.
PFRA	Preliminary Flood Risk Assessment
Pitt Review	Comprehensive independent review of the 2007 summer floods by Sir Michael Pitt, which provided recommendations to improve flood risk management in England.
Pluvial Flooding	Flooding from water flowing over the surface of the ground or ponding before it has reached a watercourse or drainage system; often occurs when the soil is saturated and natural drainage channels or artificial drainage systems have insufficient capacity to cope with additional flow.
PPS25	Planning and Policy Statement 25: Development and Flood Risk
Resilience Measures	Measures designed to reduce the impact of water that enters property and businesses; could include measures such as raising electrical appliances.
Resistance Measures	Measures designed to keep flood water out of properties and businesses; could include flood guards for example.
Risk	In flood risk management, risk is defined as a product of the probability or likelihood of a flood occurring, and the consequence of the flood.
Risk Management Authority	As defined by the Flood and Water Management Act
Sewer flooding	Flooding caused by a blockage or overflowing in a sewer or urban drainage system.
SFRA	Strategic Flood Risk Assessment
Stakeholder	A person or organisation affected by the problem or solution, or interested in the problem or solution. They can be individuals or organisations, includes the public and communities.
SuDS / Sustainable Drainage Systems	Methods of management practices and control structures that are designed to drain surface water in a more sustainable manner than some conventional techniques.
Surface water	Rainwater (including snow and other precipitation) which is on the surface of the ground (whether or not it is moving), and has not entered a watercourse, drainage system or public sewer.
SWMP	Surface Water Management Plan
TWUL	Thames Water Utilities Ltd
WaSC	Water and Sewerage Company

Contents

1	Introduction	1
1.1	Scope	1
1.2	Aims and Objectives	2
1.3	Sources of Flooding	2
1.4	Introduction to the PFRA Study Area	2
2	Lead Local Flood Authority Responsibilities	6
2.1	Introduction	6
2.2	Buckinghamshire Strategic Flood Management Group	6
2.3	Stakeholder Engagement	8
2.4	Public Engagement	8
3	Methodology and Data Review	9
3.1	Collection of Information	9
3.2	Availability and Limitations of Information	10
3.3	Quality Assurance	11
4	Past Flood Risk	12
4.1	Past Flood Events in Buckinghamshire	12
4.2	Significant Harmful Consequences	13
5	Future Flood Risk	15
5.1	Flood Risk Receptors	15
5.2	Receptors at Risk of Surface Water Flooding	15
5.3	Locally Agreed Surface Water Data	17
5.4	Groundwater Flooding Data	18
5.5	Effects of Climate Change	19
5.6	Effects of Long Term Developments	20
6	Review of Indicative Flood Risk Areas	22
7	Identification of Flood Risk Areas	24

8	Next Steps	25
8.1	Scrutiny and Review	25
8.2	Future Requirements of the Flood Risk Regulations	25
8.3	Strategic Flood Risk Management	25
8.4	Future Data Management	25
9	References	27
	Appendix A - Study Area Maps	28
	Appendix B - Records of Past Floods	29
	Appendix C - Records of Sewer Flooding	76
	Appendix D - Preliminary Assessment Report Spreadsheet	77
	Appendix E - Locally Agreed Surface Water Information	78
	Appendix F - Groundwater Flood Maps	79

List of Tables

Table 1.1	Flood Risk Screening (from Environment Agency, 2010a)	1
Table 3.1	Modelled data collected for the PFRA	10
Table 4.1	Summary of recent local flooding events in Buckinghamshire	13
Table 4.2	Details of flooding in Wycombe District during the winter 2000/1 groundwater flood	14
Table 5.1	Estimated number of properties at risk from surface water flooding	16
Table 5.2	UKCP09 climate projections for the 2050s in Thames and Anglian river basins	20

List of Figures

Figure 2.1	Buckinghamshire Strategic Flood Management Group Organogram	7
Figure 6.1	Places above flood risk thresholds in Buckinghamshire	22
Figure 6.2	London indicative Flood Risk Area extension into Buckinghamshire	23
Figure 8.1	Four stages of flood risk management activity in Flood Risk Regulations	25

1 Introduction

1.1 Scope

This report is the result of a Preliminary Flood Risk Assessment that was undertaken by Jacobs on behalf of Buckinghamshire County Council (BCC). This report is part of the requirements of the Flood Risk Regulations ('the Regulations') which came into force in December 2009. The Regulations implement the Floods Directive, which aims at providing a consistent approach to managing flood risk across Europe.

As part of the Regulations and the Flood and Water Management Act ('the Act')¹, all Unitary Authorities and County Councils are designated as the Lead Local Flood Authority (LLFA). BCC is the LLFA for Aylesbury Vale, Chiltern, South Bucks and Wycombe Districts (see Section 1.4). LLFAs have particular duties with respect to recording flood events and managing flood risk. The LLFA responsibilities are detailed in Chapter 2.

Under the Regulations, LLFAs are responsible for undertaking a Preliminary Flood Risk Assessment (PFRA) addressing local sources of flood risk, primarily from surface runoff, groundwater and ordinary watercourses (see Section 1.3). The PFRA is a high-level screening exercise which involves collecting information on past floods and potential future floods, assembling this information in a Preliminary Flood Risk Assessment Report, and using it to identify Flood Risk Areas, where the risk of flooding is significant in a European context. Table 1.1, reproduced from Environment Agency (2010a), summarises the main tasks which have been undertaken to produce this PFRA report. This document is the preliminary assessment report listed as item 5 which summarises all information gathered under items 1-10.

No	Description
1	Set up governance & develop partnerships
2	Determine appropriate data systems
3	Collate information on past & future floods and their consequences
4	Determine locally agreed surface water information
5	Complete preliminary assessment report document
6	Record information on past & future floods with significant consequences in spreadsheet
7	Illustrate information on past and future floods
8	Review indicative Flood Risk Areas
9	Identify Flood Risk Areas
10	Record information including rationale

Table 1.1 Flood Risk Screening (from Environment Agency, 2010a)

It is important to note that not all forms of flooding are considered in this report. Reporting on fluvial flooding from main rivers (and tidal flooding, although this is not relevant for Buckinghamshire) as well as flooding from large reservoirs is the responsibility of the Environment Agency and does not need to be considered by the

¹ The Flood and Water Management Act received Royal Consent in April 2010 and is being implemented in stages from October 2010

LLFA. However, the interaction of surface runoff, groundwater and Ordinary Watercourses with Main Rivers, the sea and reservoirs has been taken into account. An example of this is where an ordinary watercourse floods as a consequence of backing up due to high levels in a Main River.

1.2 Aims and Objectives

The objectives of this PFRA can be summarised as follows:

1. Compile, map and assess records of historic flooding from surface runoff, groundwater and ordinary watercourses (referred to as 'past flooding');
2. Identify and map areas with high flood risk (referred to as 'future flooding');
3. Produce a PFRA report which satisfies the requirements of the Regulations;
4. Inform development of a strategy to manage local flood risk.

1.3 Sources of Flooding

This PFRA focuses on flooding from surface water, ordinary watercourses and groundwater. Consideration is also given to flooding from sewers and canals which are not designated as Main River. A brief description of these flood sources is given here.

Surface Water

Surface water flooding can be caused by rainwater (including snow and other precipitation) which is on the surface of the ground (whether or not it is moving), and which has not entered a watercourse, drainage system or public sewer. Although flooding from surface water and combined sewers can be considered a form of surface water flooding, sewer flooding for this PFRA has been considered separately where there is sufficient information available to indicate that the flooding was caused wholly or partly by rainwater entering the system.

Groundwater

Groundwater flooding can occur when groundwater rises up from the underlying aquifer to flood subsurface infrastructure or to emerge at the ground surface. The two forms of groundwater flooding most prevalent in Buckinghamshire are:

- the rise of groundwater levels to extreme high levels in permeable consolidated aquifers (primarily Chalk) in response to prolonged above average rainfall; and
- the rise of groundwater levels in permeable superficial deposits which are in hydraulic continuity with high water levels in adjacent rivers.

Ordinary Watercourses

An Ordinary Watercourse is any watercourse (river, stream, ditch, cut, sluice, dyke or non-public sewer) that is not identified as a Main River on maps held by the Environment Agency.

1.4 Introduction to the PFRA Study Area

The area considered in this study is the area within the administrative boundaries of Buckinghamshire County Council. The study area is shown on Figures A.1 (administrative) and A.2 (county map) in Appendix A. The county had a population

of approximately 479,000 in 2001 (Census 2001) and covers an area of approximately 1565 km². In terms of neighbouring LLFAs, Buckinghamshire shares flood risk management borders with Oxfordshire, Northamptonshire, Milton Keynes, Bedfordshire, Hertfordshire, LB Hillingdon, Slough, Windsor & Maidenhead, Wokingham.

The county is divided into the following four Districts (in alphabetical order):

- Aylesbury Vale
- Chiltern
- South Bucks
- Wycombe

A brief description of each District is provided below which is largely taken from their respective Strategic Flood Risk Assessments (SFRAs). The focus in the summaries given below is on the principal urban areas in each District which are identified in Chapter 6 as areas where numbers of properties could be at risk of surface water flooding.

Although flooding from Main Rivers is beyond the scope of this assessment, it is useful to note that Buckinghamshire is divided into two separate river basins, with the watershed running approximately west to east across Aylesbury Vale. The northern part of the Vale is in the River Great Ouse catchment, and the remainder of the county is in the River Thames catchment. Subsequently, the county is served by two Water & Sewerage Companies. The northern portion of Aylesbury Vale District is served by Anglian Water. The remainder of the county is served by Thames Water. Figure A.1 shows the water companies' coverage. Figure A.1 also shows that a part of Aylesbury Vale which contains a number of Ordinary Watercourses is covered by the Great Ouse Internal Drainage Board.

Aylesbury Vale

Aylesbury Vale is the largest District in the county and covers an area of approximately 903 km². Compared with the topography in the other Districts, Aylesbury Vale consists of relatively flat land. Its boundary is marked by Milton Keynes to the north, Leighton Buzzard and the Chiltern Hills to the east and south, Thame to the south and Bicester to the west. Key towns lying within the vale include Aylesbury, Buckingham, Wendover, Winslow and Haddenham. In the 2001 UK census the population of Aylesbury Vale was 165,748 where approximately half of those live in Aylesbury. Aylesbury Vale can be divided into two separate river basins. The northern part of the Vale is in the River Great Ouse catchment, and the southern part is in the River Thames catchment.

The geological bed of the Vale is largely made up of clay that was formed at the end of the ice age. Most of the area is underlain by the limestones and sands of the Portland Beds and the Kimmeridge and Gault Clays. The head of the Upper Thame and the Bear Brook catchments incorporates the Chiltern Hills and contains highly permeable chalk which produces low runoff rates. A vast underground reserve of water exists which makes the water table higher than average in the Vale of Aylesbury. However, the lower part of the Bear Brook catchment contains a mixture of limestone, sandstone, clay and alluvium, which produce much less permeable conditions and therefore generates a higher rate of runoff.

The Grand Union Canal (GUC) flows through the eastern side of the District and includes the Aylesbury Arm and the Wendover Arm. The Weston Turville and

Wilstone reservoirs keep the GUC flowing as the canal is mainly raised above the surrounding ground level without a natural drainage catchment.

Surface water flooding in Aylesbury Vale does not appear to have posed a significant flood risk in the recent past. Due to the local geology, groundwater flooding is also not considered to pose a great risk. However, both surface water flooding and groundwater flooding has been recorded. The River Thames, the Bear Brook and their tributaries pose a greater risk of fluvial flooding, as does flooding from Ordinary Watercourses.

Chiltern

Chiltern District is situated to the north west of London and to the east of Wycombe District. The district covers an area of approximately 196 km² and has a population of approximately 90,000 (2001 Census).

A large proportion of Chiltern District is situated on Chalk bedrock, with most hills overlain by clayey deposits. The Chalk bedrock is largely exposed in the valleys, except in the valleys of the Rivers Chess and Misbourne, which are partly overlain by superficial Alluvium deposits.

Although the Rivers Misbourne and Chess flow through Amersham and Chesham respectively, the river valleys are well defined and the areas potentially at risk from river flooding are typically narrow. However, the chalk geology of the area, coinciding with the base of steep sided valleys, results in a high susceptibility to ground and surface water flooding during periods of intense rainfall.

Properties and infrastructure within Chiltern District are at risk of groundwater flooding, the surcharging of the underground sewer system, the blockage of culverts and gullies (which results in overland flow), and surface water flooding.

South Bucks

South Bucks District is situated to the west of London, bounded by the River Thames to the south and west and River Colne to the east. The District lies to the south of Chiltern DC, between Beaconsfield to the north (which is just inside the district) and Slough to the south (outside the district). The District covers an area of approximately 141 km² and has a population of approximately 62,000 (2001 Census).

The majority of the district is situated on clayey bedrock from the Thames Group (London Clay) or the Lambeth Group. The bedrock is sometimes exposed but mostly overlain by River Terrace Deposits originating from the pre- or post-diversionary River Thames. These deposits consist of sand and gravel and may be conducive to groundwater flows. The north-west corner of the District (the Beaconsfield area) consists of Chalk bedrock overlain by Beaconsfield Gravels. In the valleys around Beaconsfield the Chalk bedrock is exposed to the topsoil.

Situated along the River Thames, some parts of Marlow have suffered from fluvial flooding. Groundwater flooding has also been reported in Marlow, immediately adjacent to the River Thames. A large proportion of the River Thames corridor is characterised by gravely soils referred to as Thames Gravels. As water levels within the river rise, the water table rises within the gravel layer, resulting in groundwater flooding within low-lying adjacent areas.

Wycombe

Wycombe District lies within south-west Buckinghamshire and its principal urban areas are High Wycombe, Marlow and Princes Risborough. The district covers an area of approximately 364 km² and has a population of approximately 162,000 (2001 census). The principal watercourses within Wycombe District include the River Thames, the River Wye, and smaller watercourses including Hamble Brook, Hughenden Stream, and the Lyde, Bonny and Elm Brooks.

The topography of Wycombe District is dominated by the Chiltern Hills, which run in a south-west to north-easterly direction across the district. A small area of Wycombe District to the north of the Chiltern Hills falls within the Vale of Aylesbury, which is a flatter, more open landscape. A small portion of the south of Wycombe District falls within the Thames Valley. The Chiltern Hills form a distinctive ridge with a steep scarp slope on their northern limit, while the slope to the south falls more gently with open downland, which is dissected by a number of valleys.

The solid geology in the area of the Chiltern Hills is formed of Cretaceous Chalk, whereas the lowland floodplain of the Thames is characterised by fluvial deposits such as river gravels, sands and clays. The Vale of Aylesbury is primarily made up from Gault Clay and is renowned for its high water table. The soils of Wycombe District are strongly associated with the underlying chalk geology, and are typically shallow and nutrient poor. This excludes the fertile alluvium that exists in the Thames Valley.

Due to its position at the lower slopes of a number of relatively steep valleys, High Wycombe is susceptible to flooding from the Main Rivers Wye and Hughenden Stream, as well as flashy surface runoff from the urban areas. Analysis of past flood records suggests that flood events may occur (on average) every 15 years or so. The risk of groundwater flooding is variable and heavily dependent upon local geological, topographical and weather conditions, as well as local abstraction regimes. Groundwater flooding and fluvial flooding are strongly linked in High Wycombe. As the River Wye and the Hughenden Stream originate from the chalk aquifers of the Chiltern Hills, water levels within the chalk aquifer influence both river flows and the likelihood of groundwater flooding.

2

Lead Local Flood Authority Responsibilities

2.1 Introduction

Buckinghamshire County Council (BCC) has adopted the Lead Local Flood Authority (LLFA) role for Aylesbury Vale, Chiltern, South Bucks and Wycombe District Council areas as required by the Flood Risk Regulations 2009 and the Flood & Water Management Act 2010. As a LLFA, the Act gives BCC responsibility for developing, maintaining and applying a local flood risk strategy. BCC is therefore responsible for local flood risk and has already formed effective partnerships with other relevant authorities as outlined in Section 2.2 below.

In addition to a local flood risk strategy, the other LLFA responsibilities are to:

- Investigate all flooding incidents, where deemed to be necessary;
- Maintain a register of assets relevant to flooding;
- Approve drainage systems for construction work, in their capacity as SuDS Approving Bodies (SABs), and adopt and maintain SuDS; and
- Cooperate with other Flood and Coastal Erosion Risk Management (FCERM) authorities, for example through building partnerships and ensuring effective multi-agency working.

2.2 Buckinghamshire Strategic Flood Management Group

BCC recognises that much of the local knowledge and technical expertise necessary for successful fulfilment of their LLFA duties lies with the District councils, Internal Drainage Board and other partner organisations. To this end, the Buckinghamshire Strategic Flood Management Group (BSFMG) was formed in 2009 to help meet the requirements of the Flood & Water Management Act and co-ordinate work amongst relevant stakeholders and partners. Meetings are held every two months with flexibility for quarterly meetings when work load decreases. Actions and messages agreed during the meetings are formally included within a Decision and Action log. The following are members of the BSFMG:

- Buckinghamshire County Council
- Chiltern District Council
- South Bucks District Council
- Wycombe District Council
- Aylesbury Vale District Council
- Highways Agency
- Thames Water
- Anglian Water
- Bucks Fire and Rescue
- Great Ouse Internal Drainage Board
- Environment Agency

An organogram of the BSFMG is provided in Figure 2.1 overleaf. The Bucks PFRA and Surface Water Management Plan working group reports to the BSFMG regarding progress of development of SWMPs in Chesham and High Wycombe and has reported on progress of this Buckinghamshire PFRA.

Buckinghamshire Flood Management Governance

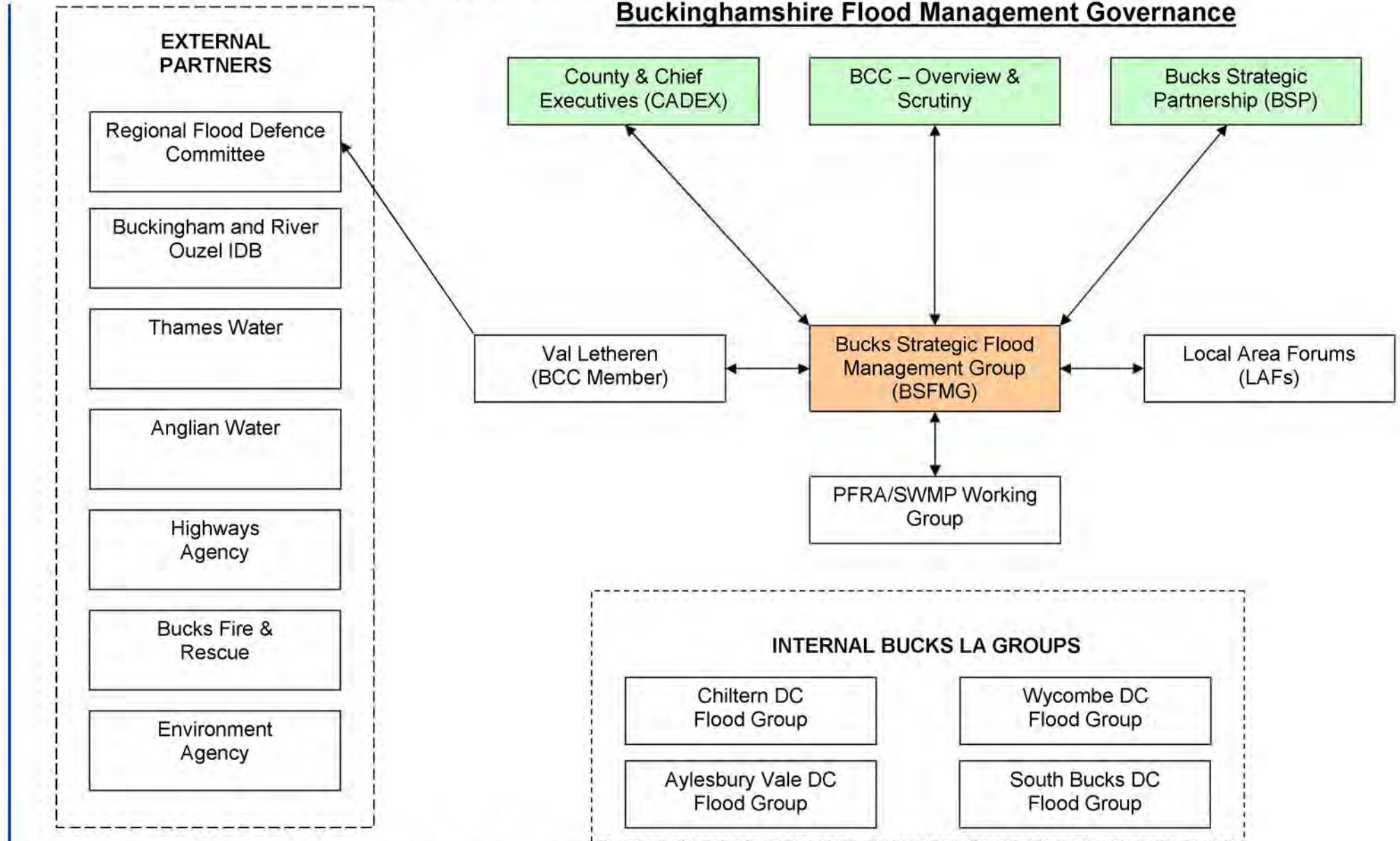


Figure 2.1 Buckinghamshire Strategic Flood Management Group Organogram

The following terms of reference for the BSFMG are designed to meet the requirements to develop, maintain and apply a local flood risk strategy:

- To ensure a long-term approach to flood management in Buckinghamshire ensuring clear accountability and co-ordination between all relevant parties as appropriate;
- To develop and own the overarching strategy for flood risk management in Buckinghamshire;
- To provide leadership and accountability to ensure effective delivery of the Flood and Water Management Act within Buckinghamshire;
- To provide high level guidance in order to prioritise and co-ordinate local investment in flood management assets, maintenance and improvement works;
- To be the central point where all flooding issues in Buckinghamshire can be discussed by all agencies involved and appropriate action agreed and then taken;
- To share information, taking into account Data Protection issues, to facilitate the management of flood risk and to enable the LLFA and other relevant organisations fulfil their functions in relation to flood risk management;
- To endeavour to provide advance warning of public statement messages to be communicated by partners in Buckinghamshire in relation to flooding issues and to consider whether they could be produced as a partnership;
- To review the Terms of Reference for the group on an annual basis in order to update and/or amend as necessary taking into account legislation and new responsibilities;
- To provide strategic direction on the development of Surface Water Management Plans in Chesham and High Wycombe to identify “hot spots” and priorities for investment to prevent surface water flooding;
- To provide strategic direction on the development of the Bucks PFRA.

2.3 Stakeholder Engagement

During preparation of the PFRA, consultation has been undertaken with all the members of the BSFMG as listed in Section 2.2. In addition, engagement has been sought with representatives of the following organisations and authorities:

- British Waterways (who provided a short list of overtopping and structural failure events);
- Network Rail (who had not provided any data at the time of writing).

2.4 Public Engagement

BCC recognise that engagement with the public can provide significant benefits to local flood risk management including building trust, raising awareness, gaining access to additional local knowledge and increasing the chances of successful development of options and decisions proposed in future flood risk management plans. In short, engagement with the public and other stakeholders is at the centre of ensuring a sustainable and integrated approach to management of local flood risk.

The PFRA report is being promoted through a four-week public consultation via the BCC website. Following the close of the consultation on 6th May 2011, comments will be considered by the BSFMG and any necessary amendments made. The revised PFRA report will then be passed to the Overview and Scrutiny Committee for sign off (see Section 8.1).

3 Methodology and Data Review

3.1 Collection of Information

Past Flooding

Information on past flooding from local sources has been collected from Buckinghamshire County Council and the four Districts (Aylesbury Vale, Chiltern, South Bucks, Wycombe). Further information was sought from the following organisations:

- Environment Agency
- Buckingham and River Ouzel Internal Drainage Board
- British Waterways
- Highways Agency
- Network Rail
- Buckinghamshire Fire and Rescue Service

Of these organisations Network Rail had not responded at the time of writing. All others provided at least some information on past flooding.

The past flooding records are discussed further in Section 4.1.

Water companies did not provide comprehensive information on the capacities of sewer networks in Buckinghamshire. British Waterways provided some information on historic flood events, which has been included in Table B.13 in Appendix B. No specific information was available on small raised water bodies (large water bodies are the responsibility of the Environment Agency). The council will continue to work with its partners to manage the flood risk from these sources.

Future Flooding

The modelled flood data provided included those datasets listed below in Table 3.1.

Dataset	Description
Environment Agency:	
Flood Map for Rivers and Sea	The extent of flooding from rivers where the catchment area is greater than 3 km ² and from the sea
Areas Susceptible to Surface Water Flooding (AStSWF)	The first national mapping of areas at risk of surface water flooding
Flood Map for Surface Water (FMfSW)	The updated national surface water mapping, for storm events with Annual Exceedance Probabilities of 1 in 30 (3.3%) and 1 in 200 (0.5%).
Detailed River Network (DRN)	Shapefile with the most detailed representation of the river network based on Mastermap data.
Areas Susceptible to Groundwater Flooding (AStGWF)	Coarse-scale national mapping showing areas which may be susceptible to groundwater flooding

Dataset	Description
Groundwater Emergence Map	Zones of consolidated aquifers where groundwater could rise to within 2m of the ground surface in a winter hydrologically similar to that experienced in 2000/1.
National Receptor Database	National dataset which aims to capture all social, economic, environmental and cultural receptors of flooding, including all properties in England and Wales
Indicative Flood Risk Areas	Nationally identified flood risk areas, based on clusters of 1 km ² grid squares with each square having more than 200 people, or 20 businesses, or more than 1 critical service at risk, with the total cluster having more than 30,000 people at risk.
Catchment Flood Management Plans (CFMP)	CFMPs consider all types of inland flooding, from rivers, groundwater, surface water and tidal flooding and are used to plan and agree the most effective way to manage flood risk in the future.
Buckinghamshire County Council:	
Past flood event records	Records of flood events by Bucks CC.
District Councils:	
Strategic Flood Risk Assessments (SFRA)	SFRAs are assessments of flood risk at local planning authority (district) level. Although they discuss a range of flooding sources, they focus on fluvial flooding.
Past flood event records	Records of flooding in the past at District level, from any source
Parish Councils:	
Past flood event records	Parish records of flood events in the past

Table 3.1 Modelled data collected for the PFRA

3.2 Availability and Limitations of Information

The records of past flooding provided by the Districts and other consultees varied widely in terms of the quantity and the quality. As a consequence, the amount of data available for the different Districts is not necessarily a reflection of the number of past flood events in a District. Instead, it is to a large extent a reflection of how thorough the data collection and recording has been in each District. In many cases, records of past flooding had been collated in the past few years for Strategic Flood Risk Assessments (SFRAs) that were produced for each District. However, because floods had not always been recorded systematically and consistently across the Districts, consultation was undertaken with all four Districts to capture as much expert knowledge as possible for this PFRA. This consultation provided an opportunity to include flood events that occurred after the respective SFRAs were published. The consultation resulted in the addition of more than 200 records of flooding.

3.3 Quality Assurance

The complete dataset of past flood incidents was reviewed by the Districts once the collation and mapping had been completed. Some Districts proposed amendments to the texts and added some further incidents. These amendments and additions have been incorporated in the tables and maps in Appendix B.

It is clear that few of the records report on the consequences of the flood event. Therefore, it has not been possible to assess the consequences of the past floods based on these records.

4

Past Flood Risk

4.1 Past Flood Events in Buckinghamshire

All available records of past flood incidences, in addition to records obtained from consultation with the Districts (see Chapter 3), have been collated and mapped. In order to retain all available recorded information, the source data have been reproduced in the following tables in Appendix B:

- **Table B.1:** Aylesbury Vale DC flooding data
- **Table B.2:** Aylesbury Vale highways likely to be flooded
- **Table B.3:** Chiltern DC drain flooding incidents
- **Table B.4:** Chiltern Parish Council records
- **Table B.5:** Chiltern DC unspecified flood events
- **Table B.6:** Chiltern DC Area Technician Records (Chalfonts)
- **Table B.7:** South Buckinghamshire DC drain flooding incidents
- **Table B.8:** South Buckinghamshire DC flooding events records
- **Table B.9:** South Buckinghamshire DC groundwater flooding events records
- **Table B.10:** South Buckinghamshire Parish Council records
- **Table B.11:** South Buckinghamshire DC fluvial flooding incidents
- **Table B.12:** District experts consultation results 2010/2011
- **Table B.13:** Transport for Buckinghamshire Flooding Records
- **Table B.14:** British Waterways canal flooding records
- **Table B.15:** Highways Agency records

Although flooding from Main Rivers does not form part of this study (this is managed by the Environment Agency and not by the BCC as the Lead Local Flood Authority), records of fluvial flood events provided have been retained in these detailed records for completeness.

The maps in Appendix B based on these records use a colour, symbol and lettering/numbering system that identifies the data source as well as the location and source of flooding. The unique identifier shown on the maps is linked back to the above tables. To maximise consistency across the records, the source of flooding for each record has been determined by Jacobs based on the available information, if it was not clear in the original data.

Table 4.1 summarises some of the major flood events in Buckinghamshire in the recent past. The recorded events originate from a range of flood sources. This PFRA focuses on flooding from surface water, Ordinary Watercourses and groundwater, as defined in Section 1.3. However, flooding from sewers and canals which are not Main River has also been considered. Flooding from Main Rivers does not form part of this study and is therefore not discussed in this table.

Water companies are required to record incidences of flooding from their sewers, and this data is collected in the DG5 records. DG5 records were collected for the Bucks Minerals and Waste SFRA (Jacobs, 2010). A map summarising incidents of sewer flooding per postcode area from the SFRA is included in Appendix C. No specific data was available in this figure for Aylesbury Vale. However, a list of those areas for which sewer flooding has been recorded was provided by Anglian Water for this PFRA. This list is also reproduced in Appendix C. As concluded in the various SFRAs, sewer flooding across Buckinghamshire generally appears to be sporadic and infrequent.

Flood Event ¹	Source	Significant Consequences?	Included in Preliminary Assessment Spreadsheet?	Likely to reoccur?
July 2007: An intense rainfall event on 20 th July 2007 followed many weeks of wet weather. Although Buckinghamshire missed the most intense rainfall, some locations suffered surface water flooding and some low lying areas were flooded from the River Thames.	Surface water / main river	No	No	Yes
November – December 2006: A number of repeated medium-heavy rainfall events caused several localised surface water flood incidents in Chiltern District (Chalfonts) and Aylesbury town centre.	Surface water	No	No	Yes
January – March 2003: An exceptionally wet winter caused groundwater flooding from the chalk aquifers and high river levels. Several towns in Aylesbury Vale suffered from local surface water flooding.	Surface water / ground-water	No	No	Yes
Winter 2000 – 2001: An exceptionally wet winter caused groundwater levels to rise across the Chalk aquifer in Buckinghamshire and southern England. The high groundwater levels caused high river flows and widespread groundwater flooding in the valleys of the Chiltern Hills. The groundwater levels remained high for months and caused extensive flooding of properties, roads and public areas.	Ground-water	Yes	Yes	Yes
August 1999: Heavy storms, which affected large areas of southern Buckinghamshire, caused approximately 45 mm of rain to fall over High Wycombe in less than 24 hours. Many roads in High Wycombe were flooded as the drainage system failed to cope with the deluge and the River Wye poured onto London Road near the Rye open area.	Surface water	No	No	Yes

Table 4.1 Summary of recent local flooding events in Buckinghamshire

¹ Note that some of these instances may have led to fluvial flooding. However, fluvial flooding is not considered as part of this study.

4.2 Significant Harmful Consequences

The tables in Appendix B show that little information on the consequences of flooding is available in the records of past flooding. Past flood events with ‘significant harmful consequences’ are required to be recorded in a standard spreadsheet provided by the Environment Agency (the Preliminary Report Spreadsheet) and is included in Appendix D.

Apart from fluvial floods, the only flood event in the county which is considered to have had significant harmful consequences is the groundwater dominated flood event which occurred in the winter of 2000/1. Following consultation with the Environment Agency the 2000/1 flood event is considered to have had significant harmful consequences because it:

- registered on a national scale since widespread groundwater flooding occurred across the Chalk of southern England;
- is locally memorable and led to a number of flood alleviation schemes;
- was severe in terms of the long duration of flooding in addition to the wide distribution of locations affected; and
- was recorded in a number of reports.

The extensive groundwater flooding that occurred during the winter of 2000/1 followed a period of exceptionally high rainfall. In Buckinghamshire, the rainfall for the eight month period starting in September 2000 was greater than 160% of the long term average. Recharge into the aquifers exceeded all previous recorded quantities for a similar period in most areas in the Environment Agency Thames Region. As a result, groundwater levels, particularly in the Chalk aquifer, rose to the highest recorded levels and by a considerable margin at many sites.

Extensive groundwater flooding occurred, mainly in the upper normally dry valleys of the Chalk escarpment and therefore affected the southern Districts (Chiltern, South Bucks and Wycombe) for a long period of time. Flooding was particularly notable in the Hambleden, Wye and upper Chess valleys. Groundwater levels remained high for many months, at least between January and June 2001, and caused extensive flooding of basements, ground floor properties, roads and public spaces. For example, parts of Hambleden village were flooded for many months and required major road works to convey the increased flow. Similarly, Vale Brook road to the north of Chesham was closed for many weeks and subsequently required extensive roadworks. Fluvial flooding was caused by high base flows in the chalk streams and previously unknown springs emerged to flood properties.

In Wycombe District alone, a number of areas were recorded as being affected during a period from 31 October 2000 to 30 April 2001. It is estimated over 250 properties were affected by flooding, with approximately 150 of those directly by groundwater. Table 4.2 provides details of flooding in a number of communities, although numerous individual properties were also affected in Speen, Piddington, Bryants Bottom, West Wycombe, Turville, Lane End, Bledlow, Princes Risborough, and Monks Risborough.

Location	Receptors Affected
Beacons Bottom	6 properties affected groundwater
Butlers Cross	3 properties affected groundwater
Fingest	3 properties affected groundwater
Hambleden Village	29 properties affected, roads closed, sewers surcharged, groundwater fed Hambleden Brook
High Wycombe	17 properties affected, groundwater
Hughenden Valley	21 properties affected. groundwater fed Hughenden Stream
Marlow	30 properties affected by groundwater, 35 by River Thames
Medmenham	19 properties affected by flooding from Ordinary Watercourses
Skirmett	5 properties affected by groundwater
Wooburn	7 properties affected groundwater fed River Wye

Table 4.2 Details of flooding in Wycombe District during the winter 2000/1 groundwater flood

The Preliminary Report Spreadsheet (Annex 1) in Appendix D has been populated with details of the groundwater flooding in the winter of 2000/1. Further details, like flood extents and flow paths, were not available for this event.

5 Future Flood Risk

5.1 Flood Risk Receptors

The Environment Agency (EA) identified a list of receptor types for use in flood risk management. The types that the EA considers relevant for PFRAs are:

- Properties (residential and non-residential)
- Critical services
- Infrastructure network (length of roads and rail)
- Areas of agricultural land
- Pollution Prevention and Control (PPC) sites
- Control of Major Accident Hazards (COMAH) sites
- National and International Designated Sites:
 - Special Areas of Conservation (SAC)
 - Special Protection Areas (SPA)
 - Ramsar Sites
 - Sites of Special Scientific Interest (SSSI)
- National and International Designated Heritage Assets:
 - World Heritage Sites
 - Scheduled Monuments
 - Listed Buildings
 - Registered Parks and Gardens

A full spatial dataset containing all relevant flood receptors in England and Wales, the National Receptor Dataset (Version 1.1), is considered appropriate for the production of PFRAs and has been designed with this use in mind.

Most of the receptors above (excluding properties, infrastructure network, COMAH sites and agricultural land) which fall (partly or entirely) within the locally agreed surface water information (see Section 5.3 below) have been included on the maps in Appendix E. COMAH site locations are not made public for security reasons and displaying all properties, infrastructure and agricultural land would obscure the other information on the maps.

The critical services are included in the National Receptor Dataset (NRD) and are defined in Annex 6 of the PFRA guidance (Environment Agency, 2010a). For the purpose of the maps in Appendix E, the categories of services have been defined as listed in Table E.1 in Appendix E.

5.2 Receptors at Risk of Surface Water Flooding

The Environment Agency has cross-referenced the Flood Map for Surface Water (FMfSW, with 1 in 200 [0.5%] annual probability rainfall) and the Areas Susceptible to Surface Water Flooding (ASfSWF, with 1 in 200 [0.5%] annual probability rainfall) with the properties within the National Receptor Database to estimate the number of properties at risk of surface water flooding. The results for Buckinghamshire are tabulated in Table 5.1. There are high concentrations of properties at risk in Aylesbury, Amersham, Bourne End, the Chalfonts, Chesham, Farnham Common, Great Kingshill, Great Missenden, Haddenham, High Wycombe, Marlow, Princes Risborough and Wendover. Of these, the greatest risk by number of properties is in Aylesbury, High Wycombe, Amersham/Chesham and Marlow.

Dataset	Threshold Flood Level	Residential Properties	Non-Residential Properties	Total Number of Properties
Flood Map for Surface Water	> 0.1 m, < 0.3 m	56,500	17,400	73,900
	> 0.3 m	21,500	7,700	29,200
Areas Susceptible to Surface Water Flooding	Less (> 0.1 m, < 0.3 m)	37,000	12,900	49,900
	Intermediate (> 0.3 m, < 1.0 m)	25,600	18,600	7,000

Table 5.1 Estimated number of properties at risk from surface water flooding

In terms of the risk of future surface water flooding to environmentally designated sites, there are no Ramsar or SPA sites in the county. A small proportion of the area of a SAC is identified as being at risk. Also, a number of SSSI sites are identified as being at risk of surface water flooding, although much of the area of these sites is also at risk of flooding from Main Rivers.

The Environment Agency mapping identifies two IPPC sites within the county as being at risk of surface water flooding.

In terms of heritage assets, there are no World Heritage sites in the county. A number of Scheduled Monuments are at risk, although in only two locations in the county does a single 1km square area contain more than one at risk. However, both Chesham and Amersham have a significant number of listed buildings at risk, as identified by the Environment Agency. Amersham has 38 listed buildings (all grades) in a 1km² area at risk, which ranks it the seventh highest in England, and Chesham has 29 which ranks it thirteenth highest. One registered park and garden, has a small proportion of its area at risk of surface water flooding.

Given that the areas of those considered environmental receptors at risk are small in proportion to their overall area, we do not consider that these assets are likely to suffer significant adverse consequences from surface water flooding. However, given the number and density of listed buildings at risk, particularly in Amersham and Chesham, there is an appreciable risk of surface water flooding to cultural heritage sites in the county.

The risks of surface water flooding to human health, economic activity, the environment and cultural heritage as calculated by the Environment Agency is provided in the Preliminary Report Spreadsheet (Annex 2) for future floods in Appendix D.

As indicated in Appendix D, there could also be adverse consequences of future floods caused by groundwater and Ordinary Watercourses. However, no attempt has been made to provide separate counts of properties at risk of flooding from these sources. This is because the mechanisms of overland flow and ponding in topographic depressions from groundwater and ordinary watercourses have an obvious relationship with surface water flooding. Locations identified at risk of surface water flooding, that lie within an area susceptible to groundwater flooding, may be flooded by surface water, by groundwater, or both. Similarly, locations identified at risk of surface water flooding, that lie within an area susceptible to flooding from ordinary watercourses, may be affected by surface water flooding, by flooding from ordinary watercourses, or both. Thus, identifying these properties separately would lead to double counting of properties at risk.

The consequences of future flooding from groundwater (in the areas susceptible to groundwater flooding) and Ordinary Watercourses (in the areas susceptible to flooding from Ordinary Watercourses) are therefore not likely to be additional to those counted and recorded for the future surface water flooding maps.

5.3 Locally Agreed Surface Water Data

In order to agree what comprises 'locally agreed surface water information', the following data which has the potential to best represent local conditions has been reviewed:

- Environment Agency Flood Map for Surface Water (FMfSW);
- Environment Agency Areas Susceptible to Surface Water Flooding (AStSWF);
- Environment Agency Fluvial Flood Map beyond the extent of the designated Main Rivers;
- Historic flooding data.

The Jacobs Groundwater Emergence Map indicates areas within which groundwater could rise to be at or near the ground surface following prolonged above average rainfall, as was experienced in the winter of 2000/1. The map shows the area within which groundwater has the potential to emerge, although it is unlikely to emerge uniformly or in sufficient volume to fill the topography to the implied level. Instead, groundwater emerging at the surface may simply runoff to ponds in lower areas. Therefore, including the Groundwater Emergence Maps as an element of the 'locally agreed surface water information' was discounted as this would most likely have led to an overestimation of the receptors at risk. Instead, flooding within areas susceptible to groundwater flooding is likely to occur in the same places as flooding from surface runoff. Hence, the Environment Agency surface water flood maps have been considered to represent areas most susceptible to groundwater flooding in the 'locally agreed surface water information'.

During development of the 'locally agreed surface water data', a composite map was proposed which comprised the following to best represent the different sources of flooding:

Surface water flooding in developed areas: The FMfSW is considered to provide the best representation as it considers a storm of relatively short critical duration, allowances for infiltration and sewer flow, is based on the most recent topographic data and contains building footprints which are likely to have a substantial influence in directing surface flow.

Surface water flooding in rural areas: The AStSWF map is considered to provide the best representation, especially in rural areas which are susceptible to groundwater flooding, since it considers a longer duration storm and no allowance for infiltration. The predicted extent of flooding could therefore be larger which is likely to be more indicative of flooding caused by the emergence of groundwater in Chalk valleys.

Flooding from Ordinary Watercourses: The Environment Agency Flood Map for rivers and the sea covers larger Ordinary Watercourses, where the catchment is greater than 3 km². Beyond the extent of the main river network, the flood extents may best represent flooding from ordinary watercourses.

Records of Past Flooding: It was also possible that additional areas may be identified as at risk of surface water flooding through records of past flooding.

Although these areas have been noted, inclusion of these areas in 'locally agreed surface water data' has not been attempted since (a) no reliable information was available on the extents of the historic flooding and (b) no information was available to determine the probability of the events. Attempting to merge historic data into any of the other datasets would have produced inconsistent information requiring extensive, complex interpretation to a level beyond that required in a PFRA.

Upon review of the different datasets, it was determined that the differences in extent between them are minimal, especially in the context of flooding which is likely to have significant harmful consequences. **Therefore, it has been agreed that the Flood Map for Surface Water will be used to best represent local conditions and has been adopted as the 'locally agreed surface water information'.**

Following advice from the Environment Agency, the 1 in 200 (0.5%) Annual Exceedance Probability (AEP) event outline has been adopted. The FMfSW 1 in 200 (0.5%) Annual Exceedance Probability design event outline is mapped in the figures in Appendix E.

It should be noted that Surface Water Management Plans are currently being produced for Chesham in Chiltern DC and High Wycombe in Wycombe DC. The outputs from these will provide more accurate information on future flood risk in these areas and should be incorporated into the 'locally agreed surface water information' once these are completed.

5.4 Groundwater Flooding Data

Groundwater flooding maps were not included as part of the Locally Agreed Surface Water Data, for the reasons stated in Section 5.3 above. However as recognised in Section 4.2, groundwater flooding has previously caused flooding with significant harmful consequences and has the potential to do so again in the future. Therefore the map shown in Appendix F identifies areas which could be susceptible to groundwater flooding. The map in Appendix F shows two independent mapping techniques:

- The Groundwater Emergence Map (Jacobs 2004) shows areas within which groundwater could rise to within 2m of the ground surface in a wet winter hydrologically similar to 2000/1. The map shows groundwater rise within consolidated aquifers (Chalk etc.) but not permeable superficial deposits.
- Areas Susceptible to Groundwater Flooding (AS_tGWF; Environment Agency, 2010f) shows the proportion of each 1km grid square where geological and hydrogeological conditions indicate that groundwater might emerge. The map covers consolidated aquifers (Chalk etc., termed 'clearwater' flooding) and permeable superficial deposits which may lie adjacent to watercourses.

As noted above in Section 5.3, groundwater is unlikely to emerge uniformly within the areas delineated in these maps or in sufficient volume to fill the topography to an implied level. Instead, groundwater emerging at the surface may simply runoff to pond in lower areas. These overland flow pathways and low areas of potential ponding will be the same as identified in the FMfSW, i.e. the locally agreed surface water information.

Areas overlying Chalk which are most susceptible to groundwater flooding are taken as the FMfSW *within* areas identified in the Groundwater Emergence Map i.e. the highest groundwater flood risk in the Chalk areas is assumed to be in those areas where the Groundwater Emergence Map outline overlaps with the FMfSW outline.

Areas overlying permeable superficial deposits which are most susceptible to groundwater flooding are taken as the FMfSW *within* squares in the AStGWF Map where greater than 50% of the proportion of the square is susceptible to groundwater flooding i.e. the highest groundwater flood risk is assumed to be in those areas where the FMfSW outline covers more than 50% of an individual AStGWF Map square.

The areas thus identified will be used by BCC, along with recorded incidents of flooding, to target any future groundwater flood risk management.

5.5 Effects of Climate Change

The Evidence

There is clear scientific evidence that global climate change is happening now. It cannot be ignored. Over the past century around the UK we have seen sea level rise and more of our winter rain falling in intense wet spells. Seasonal rainfall is highly variable. It seems to have decreased in summer and increased in winter, although winter amounts changed little in the last 50 years. Some of the changes might reflect natural variation; however the broad trends are in accordance with projections from climate models, suggesting partly anthropogenic causes.

Greenhouse gas levels in the atmosphere are likely to cause higher winter rainfall in future. Past Greenhouse gas emissions mean some climate change is inevitable in the next 20–30 years. Lower emissions could reduce the amount of climate change further into the future, but changes are still projected at least as far ahead as the 2080s.

There is enough confidence in large scale climate models to say that we must plan for change. There is more uncertainty at a local scale but model results can still help us plan to adapt. For example we understand rain storms may become more intense, even if we cannot be sure about exactly where or when. By the 2080s, the latest UK climate projections (UKCP09) are that there could be around three times as many days in winter with heavy rainfall (defined as more than 25 mm in a day). It is plausible that the amount of rain in extreme storms (with a 1 in 5 [20%] annual chance or less) could increase locally by 40%.

The Environment Agency provided climate change projections from UKCP09 for each UK river basin. Buckinghamshire is split across two basins; the Thames River Basin (covering most of the county including South Bucks, Chiltern, Wycombe and the southern part of Aylesbury Vale) and the Anglian River Basin (covering the northern part of Aylesbury Vale). The projections for both basins are listed below.

Key Projections for the Thames and Anglian River Basins

If emissions follow a medium future scenario, UKCP09 projected increases by the 2050s relative to the recent past are provided in Table 5.2 below. Table 5.2 shows that the projections for the Thames and Anglian basins are very similar.

Implications for Flood Risk

Climate changes can affect local flood risk in several ways. Impacts will depend on local conditions and vulnerability. Wetter winters and more of this rain falling in wet spells may increase river flooding in both rural and heavily urbanised catchments.

More intense rainfall causes more surface runoff, increasing localised flooding and erosion. In turn, this may increase pressure on drains, sewers and water quality. Storm intensity in summer could increase even in drier summers, so we need to be prepared for the unexpected. Rising sea or river levels may increase local flood risk inland or away from major rivers because of interactions with drains, sewers and smaller watercourses. There is a risk of flooding from groundwater-bearing chalk and limestone aquifers across the County. Recharge may increase in wetter winters, or decrease in drier summers.

Parameter	Thames River Basin	Anglian River Basin
Winter Precipitation	+15% (very likely to be between 2 – 32%)	+14% (very likely to be between 3 – 31%)
Precipitation on the wettest day in winter	+15% (very unlikely to be more than 31%)	+14% (very unlikely to be more than 29%)
Relative sea level rise (not including extra potential rises from polar ice sheet loss)	10 – 40 cm (Sheerness)	10 – 41 cm (Felixstowe)
Peak river flows in a typical catchment within the river basin	8 – 18%	8 – 16%

Table 5.2 UKCP09 climate projections for the 2050s in Thames and Anglian river basins

Where appropriate, local studies are needed to understand climate impacts in detail, including effects from other factors like land use. Sustainable development and drainage will help us adapt to climate change and manage the risk of damaging floods in future.

Adapting to Change

Past emission means some climate change is inevitable. It is essential we respond by planning ahead. We can prepare by understanding our current and future vulnerability to flooding, developing plans for increased resilience and building the capacity to adapt. Regular review and adherence to these plans is key to achieving long-term, sustainable benefits. Although the broad climate change picture is clear, we have to make local decisions against deeper uncertainty. We will therefore consider a range of measures and retain flexibility to adapt. This approach, embodied within flood risk appraisal guidance, will help to ensure that we do not increase our vulnerability to flooding.

5.6 Effects of Long Term Developments

Built development can affect the occurrence and significance of flooding. Current planning policy though aims to prevent new development from increasing flood risk. In England, Planning Policy Statement 25 (PPS25, CLG 2010) on development and flood risk aims to: "ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe without increasing flood risk elsewhere and where possible, reducing flood risk overall."

The five planning authorities in Buckinghamshire (four district councils and the county council) adhere to Government policy in drawing up local planning policies

and making development management decisions. Major potential developments are assessed in detail to ensure that new development does not increase local flood risk. Where the risk of flooding is a local issue, such as near the Rivers Thames and Colne in South Bucks, it is identified in the Sustainable Community Strategy. These risks are then assessed in identifying sites to be allocated in the Development Plan.

Policies in the Development Plan ensure that the Buckinghamshire planning authorities only consider whether an increased flood risk can be accepted in exceptional circumstances, after applying the Sequential Test. In rare cases the wider benefits of a proposed major development may outweigh the risk of flooding. The viability of some developments may require additional public funding to address flood risk reduction and mitigation work. At application stage developers are required to submit Flood Risk Assessments which are considered by the planning authority in consultation with the Environment Agency. Exceptions to local policy would not be expected to increase risk to levels which are "significant" (in terms of the Government's criteria), but will be recorded to assist in the future review of the PFRA and Development Plans.

The one major potential development in Buckinghamshire which will not be determined by the local planning authority is High Speed 2. As a major linear development the construction and engineering of the proposed high speed railway line may have a significant impact upon surface water flows. For example embankments and cuttings may, without suitable design solutions, impede the flow of small watercourses and surface runoff. Buckinghamshire CC are responding to the route consultation, requesting appropriate improvements to the engineering line to mitigate surface water flow disruption and reduce the risk of flooding.

6 Review of Indicative Flood Risk Areas

The Environment Agency has produced a national set of indicative Flood Risk Areas (iFRAs). The iFRAs are based on areas indicated as 'Places above Flood Risk Threshold' (blue squares), which are formed of 1 km x km squares with more than 300 people, or one or more critical services, or 20 or more non-residential properties at risk of surface water flooding based on the Flood Map for Surface Water (FMfSW). The locations above the flood risk threshold are indicated in Figure 6.1 and include (in alphabetical order) Aylesbury, Amersham, Bourne End, the Chalfonts, Chesham, Farnham Common, Great Kingshill, Great Missenden, Haddenham, High Wycombe, Marlow, Princes Risborough and Wendover. The largest areas at risk are indicated on Figure 6.1.

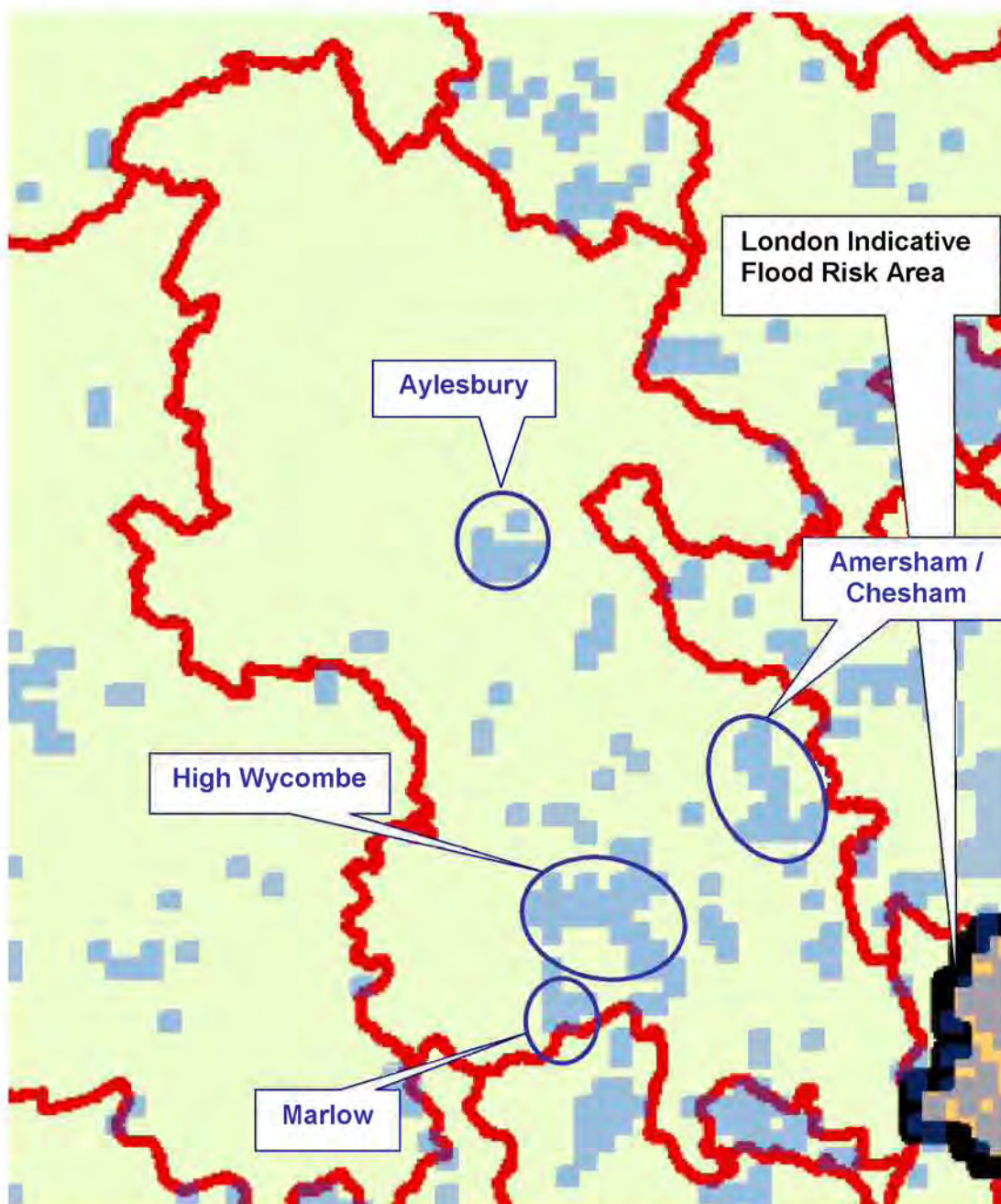


Figure 6.1 Places above flood risk thresholds in Buckinghamshire

The 'blue squares' were then considered as groups in a 3 km x 3 km area and those areas containing a cluster of at least five blue squares considered further. The 5-square clusters which put more than 30,000 people at risk of flooding are included in the iFRAs. Buckinghamshire contains several 1 km squares above the flood risk threshold, and there are four areas where these blue squares form clusters: Aylesbury, High Wycombe, Amersham/Chesham and Marlow. These clusters are identified in Figure 6.1 and their characteristics have been briefly introduced in Section 1.4. None of these clusters has more than 30,000 people at risk of flooding. Therefore Buckinghamshire has no indicative Flood Risk Areas. It is noted that the boundary of the cluster centred on Marlow extends southwards into the Royal Borough of Windsor & Maidenhead, which is an LLFA and cross-border communication will be required. Similarly, the boundary of the cluster centred on Slough extends northwards into South Bucks, although this cluster will be considered by Slough Borough Council as an LLFA.

It was subsequently considered whether additional Flood Risk Areas should be defined based on data sources other than the FMfSW. Chapter 7 details the conclusion that adding further Flood Risk Areas was not required.

There is a large indicative Flood Risk Area just to the east of Buckinghamshire (covering the London area). One of the 1 km squares forming part of this indicative Flood Risk Area extends marginally into Buckinghamshire (approximately 3 ha, just west of West Drayton/Yiewsley) as indicated in Figure 6.2. Inclusion of this small area of Buckinghamshire in the iFRA is a consequence of the arrangement of the 1km grid and does not reflect a greater risk of local flooding in this area compared to the rest of the county. Therefore, as agreed with the Environment Agency and the councils, this small area of iFRA is not considered in this PFRA. However, it is noted that ongoing communication with London Borough of Hillingdon may be required to manage any cross-border issues.



Figure 6.2 London indicative Flood Risk Area extension into Buckinghamshire

7

Identification of Flood Risk Areas

The review of the London indicative Flood Risk Area in the previous Chapter confirmed that it was not relevant to Buckinghamshire. However, the following questions were considered to determine whether any Flood Risk Areas should be proposed based on data other than the FMfSW, which was used by the Environment Agency to identify the iFRAs described in Chapter 6.

1. Is the FMfSW the most appropriate source of information?

Section 5.3 specifies why the FMfSW is considered suitable as the locally agreed surface water information for Buckinghamshire. Given that Table 5.1 demonstrates that more properties (in total) are identified as at risk based on the FMfSW than AStSWF, using other data sources is not expected to change the conclusion that there are no Flood Risk Areas in Buckinghamshire.

2. Are the consequences of flooding from other sources likely to lead to significant Flood Risk Areas?

Although groundwater flooding has been widespread in the county, neither this nor the risk of flooding from Ordinary Watercourses or other sources of flooding is expected to increase the number of people, critical services or non-residential properties at risk of flooding to above the thresholds for England identified by Defra (Defra/WAG 2010).

3. Is there information on past floods which had significant harmful consequences?

Section 4.2 describes the winter 2000/1 groundwater flood event which satisfies the definition of “significant harmful consequences” for past floods. However it is unlikely that such a flood, even in the case of an annual exceedance probability (AEP) of the order of 1 in 100 (1%), would exceed the thresholds for the definition of a Flood Risk Area in England identified by Defra (Defra/WAG 2010). Therefore we do not consider this event to be of relevance in creating additional Flood Risk Areas.

4. Is there any other (local) information on the possible harmful consequences of future floods?

Only national data was available on future harmful consequences. Some information of the consequences of the winter 2000/1 flood was available. Although a similar flood could occur again, it is unlikely that such a flood, even in the case of an annual exceedance probability (AEP) of the order of 1 in 100 (1%), would exceed the current thresholds for England identified by Defra (Defra/WAG 2010). This is because any flooding is again likely to be concentrated in the villages of the Chalk hills which have relatively low populations.

It is, therefore, concluded that it is not appropriate to create Flood Risk Areas in Buckinghamshire.

8 Next Steps

8.1 Scrutiny and Review

The PFRA has been presented at the Buckinghamshire Strategic Flood Management Group (see Section 2.2) on 5th April 2011, prior to the 4 week public consultation period. Following any amendments made in response to public comment, the revised PFRA will be submitted to the Overview and Scrutiny Committee and then Legal and Financial teams for sign off by the end of June 2011. This will enable submission of the approved PFRA report to the Environment Agency by the 22nd June 2011 deadline.

8.2 Future Requirements of the Flood Risk Regulations

The Flood Risk Regulations set out four stages of activity for managing flood risk within a six year cycle (see Figure 8.1); this PFRA has addressed the first two stages in this initial cycle. The Environment Agency/Defra will advise on requirements to complete the hazard/risk mapping and preparation of flood risk management plans in due course. The PFRA will need to be reviewed and updated every six years.

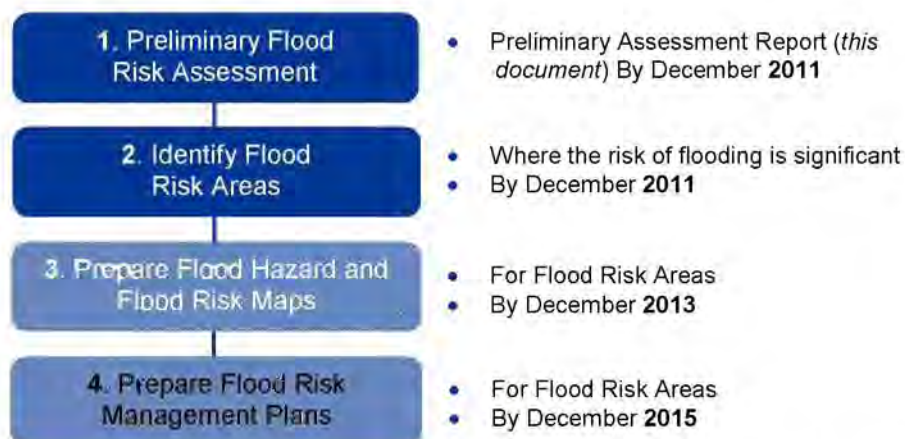


Figure 8.1 Four stages of flood risk management activity in Flood Risk Regulations

8.3 Strategic Flood Risk Management

BCC considers this PFRA to be the first step in developing a Local Flood Risk Strategy, which will set out how local flood risk will be managed within the county. The strategy will be informed by this PFRA as well as the Surface Water Management Plans that are currently being prepared for High Wycombe and Chesham.

8.4 Future Data Management

BCC is required to investigate future flood events and ensure continued collection, assessment and storage of flood risk data and information. It is recommended that, in the future, all Districts record flood event data in a consistent manner. BCC could

play a supervisory role providing a consistent system for recording, and should collect and store all records in a centralised database. The system could usefully include the facility to record the source, pathway and receptors of each flood, as well as a description of the consequences (when possible) in terms of cost of repair, loss of life, number of injured people, number of properties affected and effects on vulnerable receptors or critical infrastructure. It is recognised that collecting much of this information *during* a flood event may not be practical, so it will be important to ensure appropriate follow up discussions with those affected. Reliable records of flooding are often required in funding applications to undertake remedial works.

The Environment Agency Preliminary Assessment Report Spreadsheet specifies that from 22 December 2011 the LLFAs will need to collect the following flooding data:

- start date;
- duration;
- an estimate of the probability;
- main source;
- main mechanism;
- main characteristics;
- consequences (when these are considered significant).

It would be useful to store the flood records in a georeferenced system so that individual flood events can be easily located and plotted on a map. BCC currently uses a GIS-based system called Symology to manage their Highways assets. This system would appear appropriate to record basic information on flood events and assets that could affect local flooding. Over time, when the LLFA requirements of flood risk management under the Flood Risk Regulations 2009 and the Flood & Water Management Act 2010 become clearer, the suitability of the Symology system can be reviewed and the need for an alternative, more customised system focussed on flood risk management could be considered.

It is recommended that Districts are given access to the system so that they can, as a minimum, view the records in their administrative area.

9**References**

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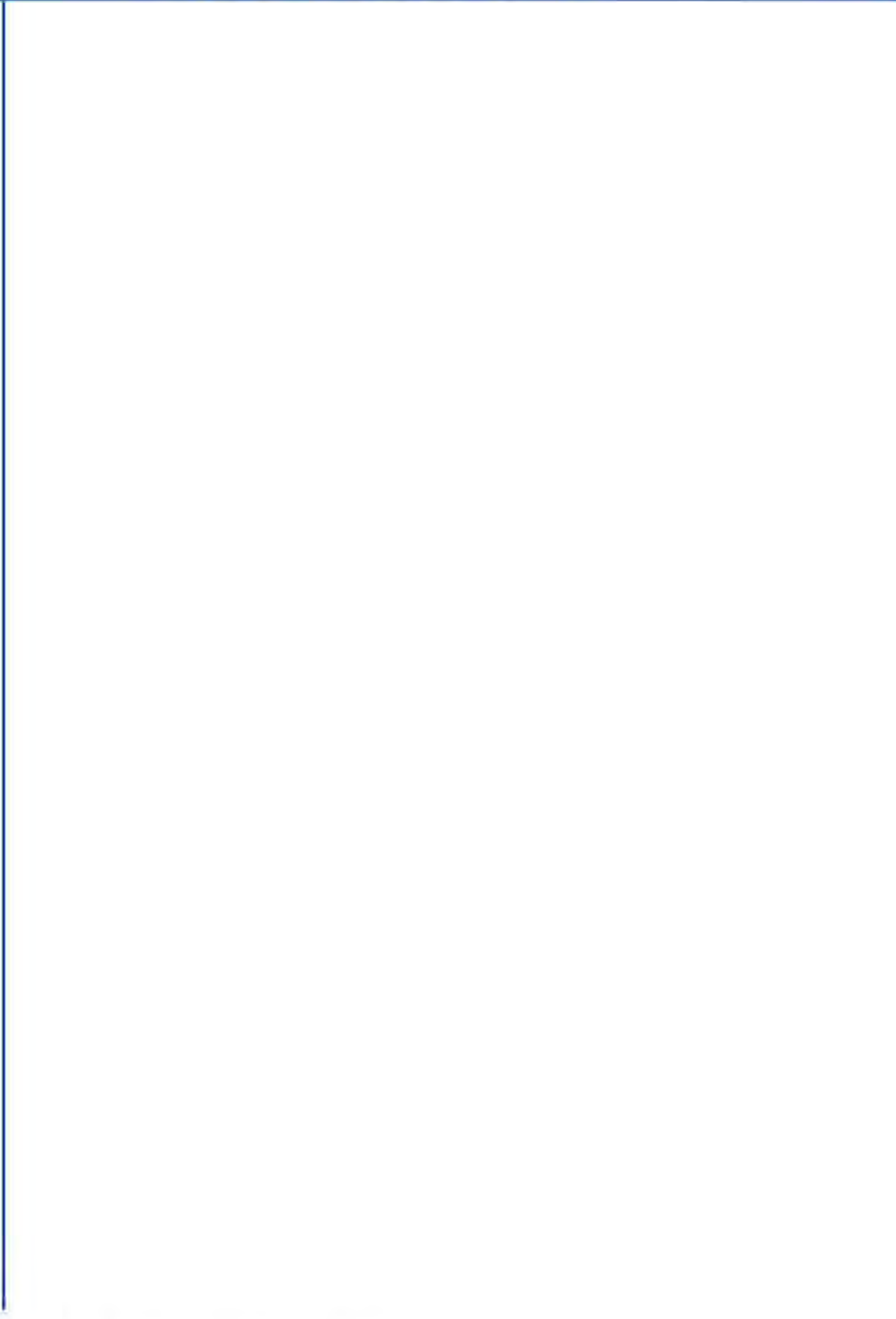
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Appendix A - Study Area Maps



Appendix B - Records of Past Floods

This appendix provides the historic flood event data collected and/or collated from various sources as part of the PFRA study. Although flooding from Main Rivers does not form part of this study (this is managed by the Environment Agency and not by the Lead Local Flood Authority), fluvial flood events where reported have been retained in these records for completeness. The records have been mapped on Figures B.1 to B.9.

Table B.1: Ay Aylesbury Vale DC flooding data

Ref. No.	Location	Flooding Source
Ay-1	Westbury	Ordinary Watercourse
Ay-2	Akeley	Ordinary Watercourse
Ay-3	Leckhampstead	Ordinary Watercourse
Ay-4	Leckhampstead Cattleford Bridge	Unknown
Ay-5	Beachampton High Street	Ordinary Watercourse
Ay-6	Thornborough	Ordinary Watercourse
Ay-7	Steeple Claydon, White Bridge	Ordinary Watercourse
Ay-8	Padbury, Oxlane Bridge	Fluvial
Ay-9	Little Horwood	Ordinary Watercourse
Ay-10	Newton Longville	Unknown
Ay-11	Mursley	Ordinary Watercourse
Ay-12	Stoke Hammond Rose Cottage	Ordinary Watercourse
Ay-13	Soulbury	Unknown
Ay-14	Twyford	Ordinary Watercourse
Ay-15	Twyford Mill	Ordinary Watercourse
Ay-16	Three Bridge Mill	Ordinary Watercourse
Ay-17	Calvert, Grebe Lake	Unknown
Ay-18	Marsh Gibbon, Station Road	Unknown
Ay-19	Westcott	Unknown
Ay-20	Waddesdon	Unknown
Ay-21	Grendon Underwood	Unknown
Ay-22	Ludgershall	Unknown
Ay-23	Brill Crossroads	Unknown
Ay-24	Oakley	Unknown
Ay-25	Worminghall	Unknown
Ay-26	Ickford	Unknown
Ay-27	Shabbington	Unknown
Ay-28	Nether Winchendon	Unknown
Ay-29	Cuddington	Unknown
Ay-30	Dinton	Unknown
Ay-31	Ford (cross roads)	Unknown ¹
Ay-32	Hardwick	Unknown
Ay-33	Rowsham	Unknown
Ay-34	Aston Clinton, 4 Dennis Close	Unknown
Ay-35	Aston Clinton	Fluvial

Ref. No.	Location	Flooding Source
Ay-36	Aston Clinton, Green Park	Unknown
Ay-37	Drayton Beauchamp	Unknown
Ay-38	Ivinghoe Aston	Ordinary Watercourse
Ay-39	Edlesborough	Ordinary Watercourse
Ay-40	Northall	Ordinary Watercourse and Surface Water
Ay-41	Slapton, Old Spice Mill	Ordinary Watercourse

¹ Ay-31: Gary Dawson confirmed that repeated flooding at the crossroads in Ford village occurs because the four pumping station cannot cope with the amount of surface water which enters the system.

Table B.2: AyR Aylesbury Vale Roads likely to be flooded (Gary Dawson)

Ref. No.	Location	Flooding Source
AyR-1	Cuddington to Chearsley at Ashendon turn, near Cuddington Mill (River Thames)	Unknown
AyR-2	Chearsley to Chilton under railway bridge	Unknown
AyR-3	Chearsley to Long Crendon	Unknown
AyR-4	Brill to Wotton Underwood – by Rushbeds Wood	Unknown
AyR-5	Brill to Kingswood at north corner of wood	Unknown
AyR-6	Brill to Boarstall road at Touchbridge	Unknown
AyR-7	Bishopstone – south end of village at bend	Unknown
AyR-8	Ford Village – main road north west of village centre	Unknown
AyR-9	Shabbington – south end at 'Old Fisherman' pub (River Thames)	Unknown
AyR-10	Granborough to Winslow at Claydon Brook	Unknown
AyR-11	Granborough Green End – road east to A413	Unknown
AyR-12	Steeple Claydon to Padbury Jubilee Bridge or White Bridge (Claydon Brook)??	Unknown
AyR-13	A413 and Main Street, Adstock at junction	Unknown
AyR-14	Padbury to Gawcott (Padbury Brook)	Unknown
AyR-15	Edgcott to Gawcott north of Great Moor sailing club and railway	Unknown
AyR-16	Marsh Gibbon to Grendon Underwood	Unknown
AyR-17	A41 Bicester Road at Berryfields railway bridge	Unknown
AyR-18	A41 Bicester Road at Blackthorn railway bridge	Unknown
AyR-19	Radclive (Great Ouse)	Unknown
AyR-20	Tingewick Main Street	Unknown
AyR-21	Thornborough High Street	Unknown
AyR-22	Thornborough, north to A422 at Thornborough Mill (Great Ouse)	Unknown
AyR-23	A413 at Lillingstone Dayrell	Unknown
AyR-24	Wing to Mentmore at Park Gate	Unknown
AyR-25	A421 Wingrave crossroads to Wing	Unknown
AyR-26	Stonehaven Road,	Unknown

Ref. No.	Location	Flooding Source
AyR-27	115 Park Street	Unknown
AyR-28	Oxford Road at TAVR Centre	Unknown
AyR-29	Churchill Avenue at Oxford Road lights	Unknown
AyR-30	Exchange Street at Highbridge Walk	Unknown
AyR-31	Lower Road between Stone sewage works and Four Winds cross roads.	Unknown

Table B.3: ChD Chiltern DC drain flooding incidents

Ref. No.	Easting	Northing	ADDRESS1	ADDRESS2	Date	Recorded No of Incidents	Flooding Source
ChD-1	496148	202675	ADDISON ROAD	CHESHAM	02/01/2007	1	Surface Water
ChD-2	500018	192044	AMERSHAM ROAD	CHALFONT ST PETER	21/02/2007	5	Surface Water
ChD-3	495420	202797	ASHERIDGE ROAD	CHESHAM	05/12/2006	3	Surface Water
ChD-4	491148	202124	BALLINGER ROAD	SOUTH HEATH	02/01/2007	1	Surface Water
ChD-5	494602	195043	BARRACK HILL	COLESHILL	02/01/2007	1	Surface Water
ChD-6	490763	201924	BAYLEYS HATCH	SOUTH HEATH	02/01/2007	1	Surface Water
ChD-7	499389	198162	BEECHWOOD AVENUE	LITTLE CHALFONT	27/11/2006	1	Surface Water
ChD-8	495864	202250	BELLINGDON ROAD	CHESHAM	17/04/2007	3	Surface Water
ChD-9	494883	202760	BERKELEY AVENUE	CHESHAM	04/01/2007	1	Surface Water
ChD-10	498150	199742	BLACKWELL HALL LANE	LEY HILL	09/01/2007	3	Surface Water
ChD-11	496854	199394	BOIS LANE	CHESHAM BOIS	02/04/2007	1	Surface Water
ChD-12	498098	202198	BOTLEY ROAD	CHESHAM	10/01/2007	14	Surface Water
ChD-13	498215	195288	BOTTOM HOUSE FARM LANE	CHALFONT ST GILES	15/02/2007	1	Surface Water
ChD-14	498339	193660	BOTTRELLS LANE	CHALFONT ST GILES	24/01/2007	2	Surface Water
ChD-15	496141	202117	BROAD STREET	CHESHAM	27/11/2006	2	Surface Water
ChD-16	499587	189400	BULL LANE	CHALFONT ST PETER	27/02/2007	3	Surface Water
ChD-17	499886	196589	BURTONS LANE	LITTLE CHALFONT	31/05/2007	6	Surface Water
ChD-18	496749	192144	CHALFONT ROAD	SEER GREEN	14/02/2007	1	Surface Water
ChD-19	495295	202536	CHAPMANS CRESCENT	CHESHAM	11/01/2007	1	Surface Water
ChD-20	494607	202830	CHARTRIDGE LANE	CHARTRIDGE	14/12/2006	6	Surface Water
ChD-21	497495	204992	CHESHAM ROAD	BELLINGDON	05/12/2006	2	Surface Water
ChD-22	496337	198578	CHESHAM ROAD	AMERSHAM	05/03/2007	1	Surface Water
ChD-23	496674	198432	CHILTERN AVENUE	AMERSHAM	02/01/2007	2	Surface Water

Ref. No.	Easting	Northing	ADDRESS1	ADDRESS2	Date	Recorded No of Incidents	Flooding Source
ChD-24	500375	190756	CHILTERN HILL	CHALFONT ST PETER	05/03/2007	1	Surface Water
ChD-25	489642	201181	CHURCH STREET	GREAT MISSENDEN	28/02/2007	1	Surface Water
ChD-26	499003	197471	COKES LANE	LITTLE CHALFONT	28/11/2006	2	Surface Water
ChD-27	495611	199301	COPPERKINS LANE	AMERSHAM	01/05/2007	2	Surface Water
ChD-28	496961	200183	CRESSWELL ROAD	CHESHAM	02/01/2007	1	Surface Water
ChD-29	495177	201417	DRYDELL LANE	CHESHAM	27/11/2006	1	Surface Water
ChD-30	500540	199705	FLAUNDEN BOTTOM	LATIMER	02/01/2007	1	Surface Water
ChD-31	493019	192094	FORTY GREEN ROAD	FORTY GREEN	04/01/2007	1	Surface Water
ChD-32	500076	192470	FOXDELL WAY	CHALFONT ST PETER	05/12/2006	1	Surface Water
ChD-33	490514	201732	FRITH HILL	SOUTH HEATH	29/11/2006	1	Surface Water
ChD-34	499566	190639	GOLD HILL NORTH	CHALFONT ST PETER	11/12/2006	1	Surface Water
ChD-35	499368	190430	GOLD HILL WEST	CHALFONT ST PETER	04/12/2006	2	Surface Water
ChD-36	500413	193854	GORELANDS LANE	CHALFONT ST GILES	18/01/2007	1	Surface Water
ChD-37	500168	191128	GRASSINGHAM END	CHALFONT ST PETER	21/05/2007	1	Surface Water
ChD-38	500067	191360	GRAVEL HILL	CHALFONT ST PETER	28/02/2007	2	Surface Water
ChD-39	495472	203619	GREAT HIVINGS	CHESHAM	23/01/2007	2	Surface Water
ChD-40	496924	198684	GRIMSDILLS LANE	AMERSHAM	04/01/2007	2	Surface Water
ChD-41	489087	198935	HEATH END ROAD	LITTLE KINGSHILL	18/01/2007	2	Surface Water
ChD-42	495981	201681	HIGH STREET	CHESHAM	18/01/2007	2	Surface Water
ChD-43	496014	202222	HIGHAM ROAD	CHESHAM	28/11/2006	1	Surface Water
ChD-44	495620	202859	HIVINGS HILL	CHESHAM	15/02/2007	6	Surface Water
ChD-45	496982	205748	HOG LANE	ASHLEY GREEN	12/02/2007	2	Surface Water
ChD-46	497519	199947	HOLLOWAY LANE	CHENIES	22/05/2007	1	Surface Water
ChD-47	493968	192190	HOWE DRIVE	KNOTTY GREEN	28/11/2006	1	Surface Water
ChD-48	498706	202303	HYDE HEATH ROAD	HYDE HEATH	01/05/2007	1	Surface Water

Ref. No.	Easting	Northing	ADDRESS1	ADDRESS2	Date	Recorded No of Incidents	Flooding Source
ChD-49	500644	191120	JOINERS CLOSE	LEY HILL	12/01/2007	1	Surface Water
ChD-50	500492	191032	JOINERS LANE	CHALFONT ST PETER	06/03/2007	2	Surface Water
ChD-51	497569	191513	JORDANS LANE	JORDANS	12/02/2007	1	Surface Water
ChD-52	498805	201928	KILN LANE	LEY HILL	11/12/2006	1	Surface Water
ChD-53	500209	189902	KINGSWAY	CHALFONT ST PETER	23/11/2006	4	Surface Water
ChD-54	496045	202808	LANSDOWNE ROAD	CHESHAM	12/03/2007	1	Surface Water
ChD-55	497322	200292	LATIMER ROAD	LATIMER	12/12/2006	1	Surface Water
ChD-56	499083	190486	LAYTERS GREEN LANE	CHALFONT ST PETER	05/03/2007	1	Surface Water
ChD-57	498937	190707	LEACHCROFT	CHALFONT ST PETER	07/12/2006	1	Surface Water
ChD-58	497443	197748	LINCOLN PARK	AMERSHAM	28/02/2007	1	Surface Water
ChD-59	500549	196715	LODGE LANE	LITTLE CHALFONT	27/11/2006	1	Surface Water
ChD-60	497461	196580	LONDON ROAD EAST	AMERSHAM	01/12/2006	1	Surface Water
ChD-61	496292	197120	LONDON ROAD WEST	AMERSHAM	08/01/2007	4	Surface Water
ChD-62	496485	199484	LONG PARK	CHESHAM BOIS	01/06/2007	1	Surface Water
ChD-63	497013	191030	LONG BOTTOM LANE	JORDANS	27/02/2007	2	Surface Water
ChD-64	490005	199660	LONGFIELD	LITTLE KINGSHILL	28/11/2006	1	Surface Water
ChD-65	494864	202950	LONGFIELD ROAD	CHESHAM	28/11/2006	1	Surface Water
ChD-66	500245	190241	LOWER ROAD	CHALFONT ST PETER	27/11/2006	3	Surface Water
ChD-67	495989	202788	MANOR ROAD	CHESHAM	02/04/2007	1	Surface Water
ChD-68	495787	199474	MAYHALL LANE	CHESHAM BOIS	29/11/2006	1	Surface Water
ChD-69	495226	201237	MISSSENDEN ROAD	CHESHAM	28/11/2006	2	Surface Water
ChD-70	489555	199802	NAGS HEAD LANE	GREAT MISSENDEN	26/02/2007	1	Surface Water
ChD-71	496733	202758	NALDERS ROAD	CHESHAM	07/03/2007	1	Surface Water
ChD-72	498442	192784	NARCOT LANE	CHALFONT ST GILES	27/11/2006	1	Surface Water
ChD-73	499212	190753	NICOL END	CHALFONT ST PETER	06/03/2007	1	Surface Water

Ref. No.	Easting	Northing	ADDRESS1	ADDRESS2	Date	Recorded No of Incidents	Flooding Source
ChD-74	499666	195623	NIGHTINGALES LANE	CHALFONT ST GILES	10/01/2007	2	Surface Water
ChD-75	500346	189533	NORTH PARK	CHALFONT ST PETER	06/03/2007	1	Surface Water
ChD-76	496677	206674	NORTHCHURCH LANE	ASHLEY GREEN	28/11/2006	2	Surface Water
ChD-77	493138	206596	OAK LANE	BRAZIERS END	19/12/2006	4	Surface Water
ChD-78	496979	198191	ORCHARD LANE	AMERSHAM	05/01/2007	2	Surface Water
ChD-79	490892	204161	OXFORD STREET	LEE COMMON	10/04/2007	2	Surface Water
ChD-80	496813	198870	PARKFIELD AVENUE	AMERSHAM	31/01/2007	2	Surface Water
ChD-81	493540	203535	PEDNOR BOTTOM	PEDNOR	12/01/2007	1	Surface Water
ChD-82	494926	201981	PEDNOR ROAD	CHESHAM	14/02/2007	1	Surface Water
ChD-83	493124	192718	PENN ROAD	KNOTTY GREEN	26/01/2007	1	Surface Water
ChD-84	499606	191125	PENNINGTON ROAD	CHALFONT ST PETER	16/05/2007	1	Surface Water
ChD-85	496745	193000	RAWLINGS LANE	SEER GREEN	15/02/2007	2	Surface Water
ChD-86	500655	192035	RICKMANSWORTH LANE	CHALFONT ST PETER	16/01/2007	5	Surface Water
ChD-87	488669	201863	RIGNALL ROAD	GREAT MISSENDEN	02/01/2007	1	Surface Water
ChD-88	492636	196368	SCHOOL LANE	PENN STREET	04/01/2007	1	Surface Water
ChD-89	496732	198658	SHORTWAY	AMERSHAM	04/01/2007	2	Surface Water
ChD-90	493750	192666	SHRIMPTON CLOSE	KNOTTY GREEN	03/05/2007	1	Surface Water
ChD-91	490799	201801	SIBLEYS RISE	SOUTH HEATH	27/11/2006	1	Surface Water
ChD-92	495922	201738	ST MARYS WAY	CHESHAM	11/01/2007	1	Surface Water
ChD-93	497191	197546	STANLEY HILL	AMERSHAM	23/11/2006	2	Surface Water
ChD-94	497224	199259	STUBBS WOOD	CHESHAM BOIS	05/03/2007	1	Surface Water
ChD-95	490111	205266	SWAN BOTTOM	THE LEE	14/05/2007	1	Surface Water
ChD-96	496036	201765	THE BACKS	CHESHAM	22/02/2007	2	Surface Water
ChD-97	495925	197269	THE BROADWAY	CHESHAM	12/01/2007	1	Surface Water
ChD-98	498648	193057	THE LAGGER	CHALFONT ST GILES	07/12/2006	1	Surface Water

Ref. No.	Easting	Northing	ADDRESS1	ADDRESS2	Date	Recorded No of Incidents	Flooding Source
ChD-99	499549	189883	THE ROWANS	CHALFONT ST PETER	27/11/2006	1	Surface Water
ChD-100	496904	202606	THE SPINNEY	CHESHAM	31/01/2007	1	Surface Water
ChD-101	499109	193436	TOWNFIELD LANE	CHALFONT ST GILES	23/11/2006	1	Surface Water
ChD-102	496301	203311	VALE ROAD	CHESHAM	12/03/2007	7	Surface Water
ChD-103	490155	198596	WATCHET LANE	LITTLE KINGSHILL	02/01/2007	3	Surface Water
ChD-104	489707	196945	WATCHET LANE	HOLMER GREEN	10/01/2007	2	Surface Water
ChD-105	496430	200889	WATERSIDE	CHESHAM	28/11/2006	3	Surface Water
ChD-106	498531	191125	WELDERS LANE	CHALFONT ST PETER	15/01/2007	1	Surface Water
ChD-107	492233	193095	WITHERIDGE LANE	PENN	22/01/2007	1	Surface Water
ChD-108	496918	198430	WOODSIDE ROAD	AMERSHAM	09/03/2007	1	Surface Water

Table B.4: ChP Chiltern Parish Council records

Ref. No.	Description	Flooding Source
ChP-1	Drainage problems on Oak Lane lead to flooding.	Surface Water
ChP-2	Flooding on Vale Road opposite the public house is due to surface water runoff from the bridleway above.	Surface Water
ChP-3	Surface water runoff, due to insufficient drainage, results in flooding on Hog Lane just before the junction with Johns Lane.	Surface Water
ChP-4	At the junction of Johns, Dennys and Northchurch Lanes surface water runoff is the cause of flooding.	Surface Water
ChP-5	Flooding caused by surface water runoff at White Hill and Whelpey Hill	Surface Water
ChP-6	Flooding occurs at the southern end of Westdean Lane due to drainage problems.	Surface Water
ChP-7	Flooding occurs along Berkhamstead Road.	Surface Water
ChP-8	Cottages in Pednormead End were badly flooded in a 2006 event. Sand bags are deployed in front of house on Church Street and there are flooding problems on Missenden Road.	Fluvial
ChP-9	Heavy rainfall leads to water flowing down Fuller Hill and into Germaines Street.	Surface Water
ChP-10	Surface runoff and river flooding occurs at the end of Amersham Road.	Surface Water
ChP-11	Groundwater flooding occurs at Trapps Lane.	Groundwater
ChP-12	Flooding occurs at Waterside due to surface runoff and blocked storm drains. Also at the end of Moor Road by the tennis courts.	Surface Water
ChP-13	Flooding at Woodland View and Whichcote Gardens occurs due to surface runoff.	Surface Water
ChP-14	Surface runoff and blocked storm drains leads to flooding on Latimer Road, at the junction with Holloway Lane and at Blackwell Hall Cottages.	Surface Water
ChP-15	Flooding event recorded at Blackwell Hall Lane Bridge.	Fluvial
ChP-16	Flooding event recorded at the Crown Cottages.	Surface Water
ChP-17	Flooding event recorded at Pinner Green.	Unknown
ChP-18	Flooding event recorded at Flaunden Bottom.	Unknown
ChP-19	Flooding event recorded at Latimer Bridge.	Fluvial
ChP-20	Flooding event recorded at River Chess in Latimer Park.	Fluvial
ChP-21	Poor drainage leads to flooding and consequent downhill erosion of nearby bridleway at this point. As a result Bois Moor Road gathers mud and debris after heavy rain.	Surface Water
ChP-22	Surface runoff in rain storms leads to Weedon Hill becoming flooded.	Surface Water
ChP-23	The High Street and Broadway in Amersham Old Town suffer from flash flooding during heavy rainfalls, due largely to inadequate drainage in the High Street.	Surface Water
ChP-24	The Parish Council of Little Chalfont records no incidents of flooding.	None Shown
ChP-25	No flooding issues known of in Chenies.	None Shown
ChP-26	No flooding issues known of in Penn.	None Shown

Ref. No.	Description	Flooding Source
ChP-27	Bayne Hill, at the junction of Long Bottom Lane, floods due to inadequate drainage and surface runoff.	Surface Water
ChP-28	Flooding outside Collyers on School lane is the result of surface water runoff and inadequate drainage.	Surface Water
ChP-29	Inadequate drainage and surface water runoff result in flooding on Chalfont Road, outside the Princess Marina Centre.	Surface Water
ChP-30	Flooding occurs at the bend in Newbarn Lane, caused by surface water runoff from nearby farmland.	Surface Water
ChP-31	On Jordans Lane, from Butlers Cross to Wilton Lane, surface water runoff occurs during a rain event.	Surface Water
ChP-32	Poor drainage at the Longbottom Lane, Twitchells Lane Junction, leads to flooding following runoff from a nearby hill.	Surface Water
ChP-33	Flooding results from flash flooding and drainage issues at Chalfont Grove.	Surface Water
ChP-34	Flooding results from flash flooding and drainage issues at Narcot Farm.	Surface Water
ChP-35	Surface water runoff temporarily gathers after heavy rainfall at the junction of Bowstridge Lane and Dibden Hill.	Surface Water
ChP-36	The Village Green area, off the High Street, floods due to surface water runoff gravel deposits from Silver Hill, Deanway and Pheasant Hill.	Surface Water
ChP-37	Flooding occurs on Nightingales Lane due to ground water flow and blocked gullies.	Surface Water

Table B.5: ChU Chiltern DC unspecified flood events
(unknown origin)

Ref. No.	Flooding Source
ChU-1	Fluvial
ChU-2	Fluvial
ChU-3	Unknown
ChU-4	Unknown
ChU-5	Unknown
ChU-6	Fluvial
ChU-7	Unknown
ChU-8	Fluvial
ChU-9	Fluvial
ChU-10	Fluvial
ChU-11	Fluvial
ChU-12	Fluvial

Table B.6: ChA Chiltern DC Area Technician Records (Chalfonts)
(T. Broderick)

Ref. No	Road	Town	Location	Class	Problem	Risk	Requirements
ChA-1	Amersham road	Chalfont St Giles	outside a property called Ebbtide Lodge	A413	Possible collapse in pipe at 2 locations adjacent to gullies and a damaged kerb weir	High Street - switch off area	Investigate collapses by excavation.
ChA-2	Nightingales Lane	Chalfont St Giles	outside a property called Longacre	B4442	Borehole not working	High	REBORE
ChA-3	Nightingales Lane	Chalfont St Giles	Outside Five Diamonds	B4442	Draincare unable to clear blockage possible root damage.	Medium	Further investigation with camera and possible excavation.
ChA-4	Nightingales Lane	Chalfont St Giles	Opposite Wellmans	B4442	System cleaned out and flowing ok but collapse in last gully on separate line	Low	Excavation to investigate.
ChA-5	Amersham road	Chalfont St Peter	Greyhound Roundabout	A413	Carriageway flooding on roundabout. Draincare due at location 8/10/10 to investigate but system cannot take surface water.	High	System cleared by Draincare but possible blockage/collapse in line. Camera required. Collapsed pipe located order raised
ChA-6	Roughwood Lane	Chalfont St Giles	on bend o/s Roughwood Fields	MC34	4 Gullies silted and blocked.	Medium	WO: 897535 raised on 12/8/10 for reactive gully machine to clean and check system. 2 man stop/go required.
ChA-7	Newbarn Lane	Seer Green	on bend o/s Ridgeway	MC22	Borehole not working	High	REBORE.
ChA-8	Chalfont Road	Seer Green	opp junction with Worley Place	MC22	Draincare identified Possible collapse in pipe	Low	excavation to investigate
ChA-9	Longbottom Lane	Seer Green	Junction with Jordans Way	MC21	Draincare report collapse in outfall 10m back and also has a Give Way sign through main line.	High	excavation to investigate
ChA-10	Welders Lane	Chalfont St Peter	on bend adjacent to The Garth	MC21	Gully machine report road not wide enough to carry out work reactive cleaning of 2 kerb weirs and chambers.	Medium	Soakaway located in wooded area and cleaned by Draincare 13/10/10. Borehole not working. REBORE
ChA-11	Denham Lane	Chalfont St Peter	opp no 94 in verge.	MC38	A5/10/10 - Draincare - clean out gullies & jet to main line. Jetted main line which had a lot of roots int from willow tree. No bore hole in s/a	Medium	Order raised - excavate to investigate
ChA-12	Bull Lane	Chalfont St Peter	On bend outside Gayhurst School	U279	Current system unable to deal with surface water Extensive flooding to cw near school	High	NEW BOREHOLE REQUIRED

Ref. No	Road	Town	Location	Class	Problem	Risk	Requirements
ChA-13	Burtons Lane	Little Chalfont	O/s Paynes Barn & opp White Gables	MC39	Flooding of c/w - draincare - 2 gullies emptied but full of roots attempted to jet line into s/a unable due to 100% of roots in line. Unable to empty check 2 further gullies as lorry to big for road.	Medium	smaller lorry required to complete drainage clearance and further investigation re roots.
ChA-14	Burtons Lane	Little Chalfont	junction with Garden Reach	MC39	Road flooding due to blocked gullies	Medium	Draincare attended 15/10/10 - borehole not working + possible blockage in 2 pipe - REBORE
ChA-15	West Hyde Lane	Chalfont St Peter	on bend j/w Shire Lane	U260	Road flooding due to blocked gullies	High	Soakaway located in verge and cleaned out 12/10/10 by Draincare. Borehole not working . REBORE
ChA-16	Rawlings Lane	Seer Green	o/s Widmere farm	U247	Road completely floods and becomes unpassable due to borehole not working.	Medium	REBORE. Apparently this has been like it for sometime.
ChA-17	Lodge Lane	Little Chalfont	J/w New Road		Road floods in dip. Borehole in s/a appears to be working. Silt in s/a below level of borehole	Medium	s/a may need cleaning out and lines jetting
ChA-18	Royle Close	Chalfont St Peter	o/s no 2		Road flooding into driveways. Collapse/tree roots and concrete in outlet pipe.	Low	Order raised - excavate to investigate
ChA-19	Orchard Road	Seer Green	o/s Moss Court		Possible collapse in surface water pipe adj to gully	Low	

Table B.7: SBD South Buckinghamshire DC drain flooding incidents

Ref. No.	Address	Postcode	Year	Flooding Source
SBD-1	former Farnham Park Rehab Centre	SL2 3LP	2007	Surface Water
SBD-2	91 Maypole Road Burnham	SL60NA	2007	Surface Water
SBD-3	Coombe Vale GX	Street	2007	Surface Water
SBD-4	Hollybank Broken Gate Lane	UB9 4LB	2007	Surface Water
SBD-5	5 Champion Close Denham	UB9 5BX	2006	Surface Water
SBD-6	Anvil House Park Rd Stoke Poges	SL2 4PG	2006	Surface Water
SBD-7	Maypole Road Burnham	Street	2006	Surface Water
SBD-8	Timbertop Poyle Lane Burnham	SL1 8LE	2006	Surface Water
SBD-9	19 Brownswood Rd Beaconsfield	HP9 2NU	2006	Surface Water
SBD-10	72 Lakes Lane Beaconsfield	HP9 2JZ	2006	Surface Water
SBD-11	49 Candlemas Lane Beaconsfield	HP9 1AE	2006	Surface Water
SBD-12	13 Hag Hill Lane Burnham	SL6 0JH	2006	Surface Water
SBD-13	59 Grange Way Iver	SL0 9NT	2006	Surface Water
SBD-14	Belle Farm Cottage Sevenhills	SL0 0PB	2006	Surface Water
SBD-15	26 Bunby Road Stoke Poges	SL2 4BP	2006	Surface Water
SBD-16	Courtway 5 Dukes Kiln Drive	SL9 7HR	2006	Surface Water
SBD-17	5 Howards Wood Drive	SL9 7HR	2006	Surface Water
SBD-18	Britannia Foundry Burnham	SL1 7HA	2006	Surface Water
SBD-19	21 Anslow gardens Iver Heath	SL0 0BW	2006	Surface Water
SBD-20	Windsor Road Gerrards Cross	Street	2006	Surface Water
SBD-21	22 Burn Walk Burnham	SL1 7EW	2006	Surface Water
SBD-22	43 Maypole Road Burnham	SL6 0NA	2006	Surface Water
SBD-23	165 Vine Road Stoke Poges	SL2 4DH	2006	Surface Water
SBD-24	Farnham Road Farnham Royal	Street	2006	Surface Water
SBD-25	32f Grenville Close Burnham	SL1 8HG	2006	Surface Water
SBD-26	30 Skylark Road Tatling End	UB9 4HS	2005	Surface Water
SBD-27	1 Rectory Close Farnham Royal	SL2 3BG	2005	Surface Water
SBD-28	North Lodge Framewood Road	SL2 4QS	2005	Surface Water
SBD-29	5 Stonecroft Avenue Iver	SL0 9QF	2005	Surface Water
SBD-30	3 North Cottages Farnham Road	SL2 3AT	2005	Surface Water
SBD-31	St Gall Windsor Road	SL9 7NE	2005	Surface Water
SBD-32	St Peters Close Burnham	Street	2005	Surface Water
SBD-33	34 Orchard Road	HP9 2DZ	2005	Surface Water
SBD-34	15 Lower Road Denham	UB9 5EA	2005	Surface Water
SBD-35	Driftwood Cottage Mill Lane	SL6 0AA	2005	Surface Water
SBD-36	Ridge Way Iver	Street	2005	Surface Water
SBD-37	Mill Lane Taplow	Street	2005	Surface Water
SBD-38	27 Aylesbury End Beaconsfield	HP9 1LU	2005	Surface Water

Ref. No.	Address	Postcode	Year	Flooding Source
SBD-39	71 Devonshire Green Farnham Royal	SL2 3DX	2005	Surface Water
SBD-40	91 Fulmer Drive Gerrards Cross	SL9 7HF	2005	Surface Water
SBD-41	27 Hag Hill Rise	SL6 0LS	2005	Surface Water
SBD-42	10 Candlemas Mead	HP9 1AP	2005	Surface Water
SBD-43	40 Upper Riding Holtspur	HP9 1BJ	2004	Surface Water
SBD-44	32 Upper Riding Holtspur	HP9 1BJ	2004	Surface Water
SBD-45	4a Middle Road Denham	UB9 5EG	2004	Surface Water
SBD-46	Thorney Lane North	Street	2004	Surface Water
SBD-47	Hitcham House Hitcham Lane	SL1 7DP	2004	Surface Water
SBD-48	Mansion Lane Iver	Street	2004	Surface Water
SBD-49	Bath Road Taplow	Street	2004	Surface Water
SBD-50	10 Long Close Farnham Common		2004	Surface Water
SBD-51	Woodhill Avenue Gerrards Cross	Street	2004	Surface Water
SBD-52	7 Bunby Road Stoke Poges	SL2 4BS	2004	Surface Water
SBD-53	Heath Way	Street	2004	Surface Water
SBD-54	Davenies School Station Road	HP9 1AA	2004	Surface Water
SBD-55	Iver Medical Centre Grange Way	SL0 9NU	2004	Surface Water
SBD-56	Bond Close Pinewood Road	SL0 0NL	2004	Surface Water
SBD-57	17 Upper Riding	HP9 1BJ	2004	Surface Water
SBD-58	103 Langtons Meadow	SL2 3NS	2004	Surface Water
SBD-59	The Mead Candlemas Mead	Street	2004	Surface Water
SBD-60	Stonecroft Avenue Iver	Street	2004	Surface Water
SBD-61	25 Thorn Drive George Green	SL3 6SA	2004	Surface Water
SBD-62	32 St Peters Close Burnham	SL1 7HT	2004	Surface Water
SBD-63	38 Howards Thicket	SL9 7NX	2004	Surface Water
SBD-64	7 Pinewood Close	SL9 7DS	2004	Surface Water
SBD-65	Park Lodge Farm Iver	SL0 0NE	2004	Surface Water
SBD-66	Stoke Park Farm	SL2 4PG	2004	Surface Water
SBD-67	32 St Peters Close Burnham	SL1 7HT	2004	Surface Water
SBD-68	52 The Green Burnham	SL1 7BG	2004	Surface Water
SBD-69	Hedgerley Lane Gerrards Cross	Street	2004	Surface Water
SBD-70	4 Birch Close Iver	SL0 0BT	2004	Surface Water
SBD-71	57 Bathurst Walk Iver	SL0 9EE	2004	Surface Water
SBD-72	Langley Manor School	SL3 6BZ	2004	Surface Water
SBD-73	1 Foley Close	HP9 1ST	2004	Surface Water
SBD-74	The Manse Marsham Lane	SL9 8EY	2004	Surface Water
SBD-75	11 Ledborough Lane	HP9 2PZ	2003	Surface Water
SBD-76	Willeys Lane Denham	Street	2003	Surface Water
SBD-77	32 Denham Lodge	UB9 4AB	2003	Surface Water
SBD-78	The Uplands Gerrards Cross	Street	2003	Surface Water

Ref. No.	Address	Postcode	Year	Flooding Source
SBD-79	Crosby Close Beaconsfield	Street	2003	Surface Water
SBD-80	52 Mansion Lane Iver	SL0 9RN	2003	Surface Water
SBD-81	Denham Green Lane	Street	2003	Surface Water
SBD-82	Thompkins Lane	Street	2003	Surface Water
SBD-83	1 The Gore Burnham	SL1 8LT	2003	Surface Water
SBD-84	Purton Lane Farnham Royal	Street	2003	Surface Water
SBD-85	52 Mansion Lane Iver	SL0 9RN	2003	Surface Water
SBD-86	Old Fives Court	Street	2003	Surface Water
SBD-87	Stevenson Road Hedgerley	Street	2003	Surface Water
SBD-88	Lincoln Hatch Lane	Street	2003	Surface Water
SBD-89	8 Bradbury Gardens	SL3 6HL	2003	Surface Water
SBD-90	Foley Close Beaconsfield	Street	2002	Surface Water
SBD-91	22 Thorney Lane North	SL0 9LU	2002	Surface Water
SBD-92	Stoke Poges Lane Stoke Poges	Street	2002	Surface Water
SBD-93	30-44 Barnes Way Iver	Street	2002	Surface Water
SBD-94	Keensacre Iver Heath	Street	2002	Surface Water
SBD-95	Mendip Dukes Wood Drive	Street	2002	Surface Water
SBD-96	Candlemas Mead	Street	2002	Surface Water
SBD-97	42 Barnes Way	SL0 9LZ	2002	Surface Water
SBD-98	Driftwood Mill Lane Taplow	SL6 0AA	2002	Surface Water
SBD-99	Wyndham Village Road Dorney	SL4 6QH	2002	Surface Water
SBD-100	Framework Manor Stoke Poges	SL2 4QR	2002	Surface Water
SBD-101	41a London End Beaconsfield	HP9 2HW	2002	Surface Water
SBD-102	Bath Road Taplow	Street	2002	Surface Water
SBD-103	Heath Way Iver Heath	Street	2002	Surface Water
SBD-104	Bangors Road North	Street	2002	Surface Water
SBD-105	25 Heath Road	HP9 1DD	2002	Surface Water
SBD-106	22 Thorney Lane North	SL0 9LU	2002	Surface Water
SBD-107	1 Pennylets Green	SL2 4BU	2002	Surface Water
SBD-108	74 Maypole Road	SL6 0NB	2002	Surface Water
SBD-109	Oxford Road Denham	Street	2002	Surface Water
SBD-110	Baring Road Beaconsfield	Street	2001	Surface Water
SBD-111	River Road Taplow	Street	2001	Surface Water
SBD-112	41 The Spinney Beaconsfield	HP9 1SA	2001	Surface Water
SBD-113	Colne Orchard Iver	Street	2001	Surface Water
SBD-114	St Marys Road Middlegreen	Street	2001	Surface Water
SBD-115	Baring Road Beaconsfield	Street	2001	Surface Water
SBD-116	Church Walk Burnham	Street	2001	Surface Water
SBD-117	23 North Park Iver	SL0 9DH	2001	Surface Water
SBD-118	Shepherds Lane Beaconsfield	Street	2001	Surface Water

Ref. No.	Address	Postcode	Year	Flooding Source
SBD-119	14 Cedar Close Iver	SL0 0QX	2001	Surface Water
SBD-120	Nightingale Way	Street	2001	Surface Water
SBD-121	40 Ingleglan Farnham Common	SL2 3QB	2001	Surface Water
SBD-122	Thompkins Lane Burnham	Street	2001	Surface Water
SBD-123	42 Coulson Way Burnham	SL1 7PP	2001	Surface Water
SBD-124	52 Mansion Way Iver	SL0 9RN	2001	Surface Water
SBD-125	The Stag Hawthorn Way	SL2 3TA	2001	Surface Water
SBD-126	Langley Manor School	SL3 6BZ	2001	Surface Water
SBD-127	Collum Green Road Stoke Poges	Street	2001	Surface Water
SBD-128	Hogfair Lane Burnham	Street	2001	Surface Water
SBD-129	Little Chesters Main Drive	SL9 7PR	2001	Surface Water
SBD-130	Station Parade Denham	Street	2001	Surface Water
SBD-131	66a High Street Burnham	SL1 7JT	2001	Surface Water
SBD-132	Ingleglan Farnham Common	Street	2001	Surface Water
SBD-133	49 Iver Lane Iver	SL0 9LF	2001	Surface Water
SBD-134	8 Bradbury Gardens Fulmer	SL3 6HL	2001	Surface Water
SBD-135	Church Road Iver	Street	2001	Surface Water
SBD-136	1 Pennylets Green Stoke Poges	SL0 4BU	2001	Surface Water
SBD-137	Mansion Lane Iver	Street	2001	Surface Water
SBD-138	Mansion Lane Iver	Street	2001	Surface Water

Table B.8: SBFE South Buckinghamshire DC flooding events records

Ref. No.	Address	Note	Flooding Source
SBFE-1	252 Swallow Street Iver SLO 0HT	Caused by blocked culvert. David Deane inspected no urgent action required	Surface Water
SBFE-2	Flooding at Slough Road, Iver Heath.	DD has installed pumps at 2 flooded houses. Stuart Maxwell phoned National Grid to alert to threat to electricity sub-station.	Unknown
SBFE-3	Southend Farm, Middle Green, Slough	Horton drain flooding at. Last happened 13 years ago. David Deane will investigate. House at risk: David Deane looked at no immediate threat	Surface Water
SBFE-4	Outside 27 Aylesbury End Beaconsfield	Known flooding site, problems currently being investigated	Unknown
SBFE-5	Garvin Avenue Beaconsfield	Carriageway flooding, no previous history, most likely due to volume of water	Surface Water
SBFE-6	58-62 Chiltern Road Burnham	Known flooding site, extensive work carried out recently including new bores and re-bores (4 no in total). Water had however run away by the time site was visited	Unknown
SBFE-7	Outside 55 Conway Road Burnham	Property flooding, known flooding site but recent repairs should have resolved flooding in normal conditions, flooding on this occasion most likely due volume of water	Surface Water
SBFE-8	Outside 8-10 The Pound Burnham	No previous history, gullies appear to work ok, most likely due to volume of water	Surface Water
SBFE-9	Willow Brook Beeches Road Farnham Common	Garden flooding, no previous history, most likely due to volume of water	Surface Water
SBFE-10	Langton Croft Blackpond Lane Farnham Common		Unknown
SBFE-11	Aspny Blackpond Lane Farnham Common		Unknown
SBFE-12	Withyfield Green Lane Burnham - Now Sovereign Beeches		Unknown

Ref. No.	Address	Note	Flooding Source
SBFE-13	Pin Corner Christmas Lane Farnham Common	Past incidents of flooding but not so severe, property flooding, flooding most likely due to volume of water	Surface Water
SBFE-14	Outside 2 Drew Meadow Farnham Common	No previous history, gullies appear to work ok, most likely due to volume of water	Surface Water
SBFE-15	Rose Tree Cottage One Pin Lane Farnham Common		Unknown
SBFE-16	Farnham Park Lodge A355 Farnham Royal	Known flooding site, work carried out previously to try and alleviate problem	Unknown
SBFE-17	Farnham Park House Kemsley Chase Farnham	Private watercourse being fed by highway drainage on Farnham Park Lane, not in my view an issue for BCC	Surface Water
SBFE-18	Bell House Hotel A40 Gerrards Cross	Known flooding site, numerous problems including poor maintenance, broken gully connections, land drainage issues. Some work carried out to try to alleviate flooding	Surface Water
SBFE-19	Outside 26 Dale Side Gerrards Cross		Unknown
SBFE-20	Outside 4 Dukes Close Gerrards Cross		Unknown
SBFE-21	Outside 25 Fulmer Drive Gerrards Cross		Unknown
SBFE-22	Outside 1 Howards Wood Drive Gerrards Cross		Unknown
SBFE-23	Outside 18 Mill Lane Gerrards Cross	Known flooding site, extensive work carried out last year which should have rectified the problem, likely cause on this occasion volume of water	Surface Water
SBFE-24	Outside Sleepy Hollow Oak End Way Gerrards Cross	Known flooding site, drainage improvement works carried out in previous years without success, extreme low spot, springs, also sewer problems	Surface Water
SBFE-25	Outside Marks & Spencer Packhorse Road Gerrards Cross	Known flooding site, serious carriageway flooding.	Surface Water

Ref. No.	Address	Note	Flooding Source
SBFE-26	Under Motorway Bridge Windsor Lane Gerrards Cross	Known flooding site, flash flooding	Surface Water
SBFE-27	Outside 11 Thorney Mill Road Iver		Unknown
SBFE-28	Outside 19 Decies Way Stoke Poges	No previous history, gullies appear to work ok, most likely due to volume of water	Surface Water
SBFE-29	128-130 Rogers Lane Stoke Poges	Known flooding site, Inspected 1st Sep, gullies appear clear, works carried out in past to improve water check plus regular maintenance, water gone, on this occasion most likely due to volume of water	Surface Water
SBFE-30	Outside 4 Farm Close Taplow	Recently adopted road, completely inadequate drainage design, properties flooded	Surface Water
SBFE-31	Outside 46 Fern Drive Taplow		Unknown
SBFE-32	Junction with Huntercombe Close and Huntercombe Lane North Taplow	No previous history, gullies appear to work ok, most likely due to volume of water, but would benefit from attendance of BBJ to check s/away working.	Surface Water
SBFE-33	Outside 105 Huntercombe Lane North Taplow		Unknown
SBFE-34	Under Motorway Bridge A413 Tatling End	Mud slip due to water runoff from private field, headwall blocked, water ran over the top of embankment	Surface Water
SBFE-35	Missenden Gardens Burnham		Unknown
SBFE-36	Parish Lane Farnham Common	Local carriageway flooding	Surface Water
SBFE-37	Moreland Drive Gerrards Cross	No specific location given, no history of flooding	Unknown
SBFE-38	Deans Close Stoke Poges	No previous history, gullies appear to work ok, most likely due to volume of water	Surface Water
SBFE-39	A355 Beaconsfield Road Farnham Common (Hammond End, Christmas Lane)		Unknown

Ref. No.	Address	Note	Flooding Source
SBFE-40	Royal British Legion 9 Gore Road Burnham Buckinghamshire SL1 8AA		Unknown
SBFE-41	Blackpond Lane Farnham Common		Unknown
SBFE-42	Dukes Wood Drive Gerrards Cross		Unknown
SBFE-43	Packhorse Road Gerrards Cross	mainly commercial buildings affected	Unknown
SBFE-44	Howards Wood Drive Gerrards Cross		Unknown
SBFE-45	Howards Thicket Gerrards Cross		Unknown
SBFE-46	Templewood Lane		Unknown
SBFE-47	Lower Britwell Rod to Farnham Lane		Unknown
SBFE-48	Under railway bridges in Burnham		Unknown
SBFE-49	Grangewood Wexham		Unknown
SBFE-50	Junction of Gerrards Cross Road and Stoke Common Road		Unknown
SBFE-51	Lent Rise		Unknown
SBFE-52	Thorney Lane South		Unknown
SBFE-53	Richings Park		Unknown
SBFE-54	South Drive		Unknown
SBFE-55	Hamilton Way Farnham Common	Known flooding site, combination of poor design of access drive and inadequate drainage in road, property flooded and resident has had to vacate for repair	Surface Water
SBFE-56			Unknown

Table B.9: SBG South Buckinghamshire DC groundwater flooding events records

Ref. No.	Description	Flooding Source
SBG-1	Burnham - All bridges between Slough and Maidstone have a history of flooding. Flooding problems occur where the road goes under the railway bridge. An increase in the water table at these locations causes the groundwater to flood the road	Groundwater
SBG-2	Wooburn	Groundwater
SBG-3	Hedgerley - Surface water features affected by rising water table, flooding along the road. Not area where major events occur	Groundwater
SBG-4	Bonstow Valley - Dry valley that runs into the main river. The design of the M40 cuts across the drainage area. Work has been commissioned to fix this problem	Groundwater
SBG-5	Fulmer - Ford at times is too deep to be safe	Groundwater
SBG-6	Chapel & Green Lane, Stoke Poges	Groundwater
SBG-7	Stoke Common	Groundwater
SBG-8	Wexham - Lots of landfill sites in the area - maybe had and affect on drainage - elements have been designed in but there are still some unknowns - Plus Pinewood Studios problem	Groundwater
SBG-9	George Green - Source of water is from a large pond	Groundwater
SBG-10	Swallow Streer & Love Lane, Iver	Groundwater
SBG-11	Bangor Road South & Coppins Lane	Groundwater
SBG-12	Richings Park	Groundwater

Table B.10: SBP South Buckinghamshire Parish Council records

Ref. No.	Description	Flooding Source
SBP-1	Flash flood on July 27th resulting in 6 inches of flooding on Ellington Road.	Unknown
SBP-2	Flooding around the banjo at the end of Harcourt Road, believed to be the result of a blocked drain.	Surface Water
SBP-3	Flooding occurs at Barn Close due to the build up of surface water runoff.	Surface Water
SBP-4	East and west sections of Templewood Lane become flooded from blocked gullies and ground water runoff from streams and springs in the wood.	Groundwater and Surface Water
SBP-5	Flooding occurs on Blackpond Lane due to blocked gullies and ground water.	Groundwater and Surface Water
SBP-6	Surface and ground water runoff cause flooding leading into Farnham Park Lane from Purton Lane.	Groundwater and Surface Water
SBP-7	Ground and surface water flooding and occurs east and west along Farnham Lane.	Groundwater and Surface Water
SBP-8	Blocked drain gullies and the build up of surface and ground water from springs cause flooding at the junction of Beaconsfield Road and Park Road.	Groundwater and Surface Water
SBP-9	Windsor Road, beneath the M40, can become flooded as a result of heavy rain and runoff from the motorway.	Surface Water
SBP-10	Fulmer village centre floods due to surface runoff from Stoke Common.	Surface Water
SBP-11	Alderbourne ford can become impassable following heavy and prolonged rainfall.	Fluvial

Ref. No.	Description	Flooding Source
SBP-13	Flooding occurred along Hollybush Lane in 2007.	Unknown
SBP-14	The High Street end of Bangors Road South floods in every rain event.	Unknown
SBP-15	117 Thorney Mill Road flooded in late spring 2007.	Unknown

Table B.11: SBF South Buckinghamshire DC fluvial flooding incidents

Ref. No.	Date	Flooding Source	Comment (added by Jacobs)
SBF-1	March 1947	Fluvial	
SBF-2	March 1947	Fluvial	
SBF-3	November 1974	Fluvial	
SBF-4	November 1974	Fluvial	
SBF-5	November 1974	Fluvial	
SBF-6	November 1974	Fluvial	
SBF-7	October 1987	Fluvial	
SBF-8	October 1987	Fluvial	
SBF-9	October 1987	Fluvial	
SBF-10	October 1987	Fluvial	
SBF-11	February 1990	Fluvial	
SBF-12	February 1990	Fluvial	
SBF-13	February 1990	Fluvial	
SBF-14	September 1992	Fluvial	
SBF-15	December 2000	Fluvial	
SBF-16	December 2000	Fluvial	
SBF-17	December 2000	Fluvial	
SBF-18	December 2000	Fluvial	
SBF-19	December 2000	Fluvial	
SBF-20	December 2000	Fluvial	
SBF-21	January 2003	Surface Water	Inclusion as fluvial event appears incorrect as too far and uphill from Main River. Source type amended to surface water.
SBF-22	January 2003	Fluvial	
SBF-23	January 2003	Fluvial	
SBF-24	January 2003	Fluvial	
SBF-25	January 2003	Fluvial	
SBF-26	January 2003	Fluvial	

Table B.12: D District experts consultation results 2010/2011

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-1	Brookside, Lillingstone Lovell	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Houses adjacent to road	Not known	BCC works under bridge	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-2	A413 Near Lillingstone Davrell	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: A413 road where it crosses the watercourse	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-3	South End Bridge, Church End, Leckhampstead	Winter 2001	Ordinary Watercourse	S: Ordinary Watercourse P: Road R: 9 dwellings affected as well as church	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-4	Cattleford Bridge on A422	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Highway	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-5	West of Thornton	Not specified	Ordinary Watercourse and Surface Water	S: Ordinary Watercourse and Canal P: Floodplain of River Great Ouse R: Highway	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-6	Thornton	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Road R: New properties adjacent to road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-7	Beachampton	Winter 2001	Ordinary Watercourse	S: Ordinary Watercourse P: Road R: Road and adjacent properties	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-8	Main Street, Thornborough	July 2000 and July 2007	Surface Water	S: Surface Water from Hillside P: Hillside to the south of Thornborough R: Valley village (10 houses approx.) and college	Not known	Some drainage improvement made, but village still vulnerable	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-9	Main Street, Tingewick	July 2007	Surface Water	S: Surface Water after intense rainfall P: Road R: 11 Properties on Main Street suffered internal flooding	No known recurrence	Silted ditched cleared by BCC Highways and AWSL in 2009	Ditch maintenance	Aylesbury DC (B Kemplen, Gary Dawson)
D-10	Gawcott	Jan 2002	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Road and property	Not known	Not known/None undertaken	Maintenance of culvert and ditch	Aylesbury DC (B Kemplen, Gary Dawson)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-11	Gawcott	Jan 2002	Surface Water	S: Surface Water P: Fields to south east of town R: Road	Not known	Not known/None undertaken	Maintenance or upgrade of culvert	Aylesbury DC (B Kemplen, Gary Dawson)
D-12	South side of Main Street, Padbury	2001	Surface Water	S: Surface Water from hillside P: High Street R: Properties in south east side of Main Street	Not known	Feasibility study underway	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-13	Adstock	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: A413 road where it crosses watercourse	Not known	Not known/None undertaken	Watercourse maintenance	Aylesbury DC (B Kemplen, Gary Dawson)
D-14	Great Horwood	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-15	Little Horwood	Winter 2001 and Summer 2007	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Properties in Clays Lane and 1 Mursley Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-16	Newton Longville	Jan 2002	Surface Water	S: Surface Water Runoff P: Car Park R: Car Park	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-17	Winslow	Feb 2002	Surface Water	S: Surface Water Runoff P: Highway R: Highway under railway	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-18	Winslow	Feb 2002	Surface Water	S: Surface Water Runoff P: Highway R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-19	Near Granborough	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-20	Near Granborough	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-21	East Claydon	Winter 2001	Surface Water	S: Surface Water Runoff from field and development P: Fields and Roads R: Properties in East Claydon	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-22	Jubilee Bridge	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-23	White Bridge	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-24	North End, Steeple Claydon	Winter 2001	Surface Water	S: Surface Water from village above north end P: Land between village and North End R: North End	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-25	Steeple Claydon	Winter 2001	Surface Water	S: Surface water runoff P: Road R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-26	Three Bridges Mill, Twyford	Not specified	Ordinary Watercourse and Surface Water	S: Ordinary watercourse and highway drainage P: Not clear R: Dip in highway where water collects	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-27	Spencer Gardens, Chardon	Winter 2001	Surface Water	S: Surface water from fields P: Fields and hardstanding in village R: Spencer gardens	Not known	Not known/None undertaken	Working with farmer to build bund to divert water. This has been attempted. Farmer not co-operating.	Aylesbury DC (B Kemplen, Gary Dawson)
D-28	Bicester Road, Marsh Gibbon	Winter 2001/2002	Ordinary Watercourse	S: Ordinary Watercourse P: Bicester Road R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-29	A41 near Mercer's Wood	Not specified	Fluvial	S: Head of main river P: Not clear R: A41 road	Not known	Not known/None undertaken	Ditch maintenance	Aylesbury DC (B Kemplen, Gary Dawson)
D-30	Road below Rid's Hill	Not specified	Surface Water	S: Surface Water P: Hillside of Rid's Hill R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-31	Touchbridge, near Brill	Not specified	Unknown	S: Not known P: Not clear R: Not known	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-32	Sun Crescent, Oakley	Winter 2001	Surface Water	S: Blocked culvert P: Highway R: Property in Sun Crescent	Not known	Some drainage improvements made	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-33	Church Road, Ickford	Winter 2001	Fluvial	S: Drainage ditch (when Thame is high) P: Ditch backs up and overflows R: Properties on church road flood	Not known	Ditch clearance downstream	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-34	Road neat Chearsley	Not specified	Surface Water	S: Surface water running off hillsides to the north P: Not clear R: Road at bottom of hill	Not known	Not known/None undertaken	De-siltation of local ditches suggested	Aylesbury DC (B Kemplen, Gary Dawson)
D-35	Townsend, Haddenham	Not specified	Ordinary Watercourse	S: Backing up of watercourse and Rudd's Lane pond P: Road and built up area R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-36	Market Hill, Whitchurch	Not specified	Surface Water	S: Surface water runoff from hillside P: Roads to west of Market Hill R: Market Hill	Not known	Not known/None undertaken	Not known	Aylesbury DC (B Kemplen, Gary Dawson)
D-37	Wingrave Road Crossroads, near Wingrave	Not specified	Surface Water	S: Field runoff P: Fields and road R: Road and Wingrave Road Crossroads	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-38	Road near Oxley's Farm, near Wingrave	Not specified	Surface Water	S: Field runoff P: Fields and road R: Road near Oxley's Farm	Not known	Not known/None undertaken	Not known	Aylesbury DC (B Kemplen, Gary Dawson)
D-39	Near Wing	Not specified	Ordinary Watercourse	S: Ordinary Watercourse P: Ordinary Watercourse R: Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-40	Manor Farm, Ledburn	March 2008	Surface Water	S: Field and road runoff, poorly maintained ditches P: Fields and road R: Houses within Manor Farm	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-41	Northall	Not specified	Surface Water	S: Field runoff and poorly maintained road ditch P: Road R: Properties threatened. Road floods	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-42	Marsworth Road, Pitstone	Winter 2001	Surface Water	S: Field runoff P: Fields and road R: Marsworth Road	Not known	Ditch clearance downstream	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-43	Denis Close, Ashton Clinton	Winter 2001	Surface Water	S: Field runoff (and possibly canal) P: Field and roads R: Denis Close	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-44	Main Street, Weston Turville	Feb 2002	Surface Water	S: Field and urban runoff P: Field and roads R: Main Street	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-45	World's End Lane, Weston Turville	Feb 2002	Surface Water	S: Runoff from housing estate P: Roads and hardstanding R: World's End Lane	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-46	Broadfield, Aylesbury	Not specified	Ordinary Watercourse and Surface Water	S: Ordinary Watercourse and Bicester Road P: Ordinary Watercourse and Bicester Road/Broadfield R: Broadfield	Occurred several times	Not known/None undertaken	Maintenance of culvert	Aylesbury DC (B Kemplen, Gary Dawson)
D-47	Weedon Road, Aylesbury	July 2006	Surface Water	S: Highway runoff from Weedon Road P: Weedon Road R: No. 66 Weedon Road, gardens and garages on Weedon Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-48	Oliffe Close, Aylesbury	Not specified	Surface Water	S: Surface Water P: Not clear R: Property in Oliffe Close, some sewage surcharge	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-49	Cleveland Road, Aylesbury	Not specified	Groundwater	S: Groundwater emergence P: Land behind Cleveland Road R: Property on Cleveland Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-50	Cleveland Road/Lark Vale, Aylesbury	Not specified	Groundwater	S: Groundwater emergence and surface water runoff P: Land and built up area east of Lark Vale and Cleveland Road R: Lark Vale and Cleveland Road	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-51	Janetta Close, Aylesbury	Not specified	Surface Water	S: Ditch behind Janetta Close P: Not clear R: Janetta Close and property	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-52	Exchange Street, Aylesbury	July 2006, July 2007, Aug 2009	Surface Water	S: Surface Water runoff from High Street P: High Street and Exchange Street R: Exchange Street	Occurs regularly	After 2007, some plastic pipe offcuts removed, but problem persists	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-53	Highbridge Walk, Aylesbury	July 2006, July 2007, Aug 2009	Surface Water	S: Surface Water runoff from High Street P: High Street and Exchange Street R: Highbridge Walk	Occurs regularly	After 2007, some plastic pipe offcuts removed, but problem persists	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-54	26 Meadowcroft, Aylesbury	July 2006, May 2007	Other	S: Foul flooding from Kitchen gully P: Not clear R: 26 Meadowcroft and threatens neighbouring properties	Not known	Not known/None undertaken	None proposed	Aylesbury DC (B Kemplen, Gary Dawson)
D-55	Corner of Hollow Way Lane and Latimer Road, Amersham	Not specified	Surface Water	S: Surface Water - silt blocking drainage grips P: Surrounding land and road surface R: Latimer Road - carriageway becomes blocked	Not known	Regular maintenance needed to unblock drainage grips of silt	Drains being cleared of silt would help to an extent, but would not solve	Chiltern DC
D-56	Chartridge Lane, Chesham	Not specified	Surface Water	S: Surface Water P: Cartridge Lane and Property Driveways R: Properties on Chartridge Lane	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-57	Bowls Club, Asheridge Road, Chesham	Not specified	Surface Water	S: Surface Water P: Asheridge Road R: Bowls Club on Asheridge Road	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-58	Hiving's Hill, Chesham	Not specified - Occurs regularly	Surface Water	S: Surface Water P: Mount Nugent and surrounding roads R: Dip in Hiving's Hill	Not known	Not known/None undertaken	New boreholes sunk under the soakaways would provide a couple of years relief before they silted up.	Chiltern DC
D-59	Bellingdon Road	Not specified	Surface Water	S: Surface Water P: Mount Nugent to Hiving's Hill R: Bellingdon Road near Deansway and Pond Park Road	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-60	Subway under St Mary's Way, Chesham	Not specified	Surface Water	S: Surface Water P: Slope of subway R: Low point of subway - becomes completely flooded	Not known	Not known/None undertaken	Silt blocks the gulleys and drains. This requires regular maintenance to clear it.	Chiltern DC

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-61	Sunnyside Road	Not specified	Surface Water	S: Surface Water P: Mount Nugent - Hiving's Hill - Bellingdon Road R: Sunnyside Road. Carriageway floods, also some garages and alleys.	Regularly	Not known/None undertaken	Silt blocks gulleys. Needs regular maintenance	Chiltern DC
D-62	Higham Road	Not specified	Surface Water	S: Surface Water P: Bellingdon Road - Sunnyside Road - Broad Street R: Carriageway of Higham Road. Passing cars cause swash and splash of properties	Regularly	Maintenance attempted (see solution)	Silt blocks gulleys, but cannot be cleared due to density of car parking.	Chiltern DC
D-63	Broad Street, Chesham	Not specified	Surface Water	S: Surface Water P: Vale Road - Berkhamstead Road - Broad Street R: Broad street near Queen's Road. Carriageway blocks with up to 2ft of water (anecdotal)	Regular	Not known/None undertaken	None proposed	Chiltern DC
D-64	Kirtle Road, Chesham	Not specified	Surface Water	S: Surface Water P: Collapsed drain in Kirtle Road does not allow drainage of surface water R: Kirtle Road	Not known	Not known/None undertaken	Investigate why drainage is so poor and repair/replace	Chiltern DC
D-65	The Spinney, Chesham	2007 and 2000	Surface Water	S: Surface Water P: The Spinney and the road and hillside above it R: Property at bottom of The Spinney in the dip. Water ingresses property.	Not known	Not known/None undertaken	Place soakaways, boreholes and create sump under properties are options	Chiltern DC
D-66	Church Street, east of St Mary's Way (near Market Square)	Not specified	Surface Water	S: Surface Water P: High Street and Market Square R: Church Street, east of St Mary's Way (near Market Square)	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-67	High Street, Chesham	1995 and 2004	Surface Water	S: Surface Water P: Broad Street and High Street R: High Street. New pedestrianised area with no kerbs. Flooding able to ingress to shops.	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-68	The Backs, Chesham	Not specified	Surface Water	S: Surface Water P: Water could not exit drainage system, so back-filled causing flooding R: The Backs	Not known	Connection gully installed which has solved problem	None proposed	Chiltern DC

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-69	Church Street opp. Pednormead End	Occurs regularly	Surface Water	S: Surface Water P: Missenden Road and Pednor Road as well as field between the two R: Church Street. Properties infrequently flood, swash from cars causes some ingress and splashing	Regular	Not known/None undertaken	Reduce traffic - road used by large vehicles and as a thoroughfare into Chesham	Chiltern DC
D-70	Missenden Road, Chesham	Occurs regularly	Surface Water	S: Surface Water P: Missenden Road R: Missenden Road carriageway	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-71	Germain Street, Chesham	Not specified	Surface Water	S: Surface Water P: Fuller's Hill. Silt blocks up road drainage. R: Carriageway of Germain Street near Wey Lane. Ponding occurs.	Not known	Not known/None undertaken	Regular maintenance of drains to de-silt them	Chiltern DC
D-72	Moor Road, Chesham	Not specified	Groundwater	S: Groundwater Spring P: Not clear R: Moor Road where the spring crosses the carriageway to reach the River Chess	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-73	Corner of Bois Moor Road and Moor Road, Chesham	Not specified	Unknown	S: Not known P: Not clear R: Bois Moor Road	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-74	Waterside, near flats opp. Springfield Road	Not specified	Surface Water	S: Surface Water P: Hillside above Waterside Surface water flows down Springfield Road R: Carriageway of Waterside	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-75	Waterside, near Trapps Lane	Not specified	Surface Water	S: Surface Water P: Hillside above Waterside. Surface water flows down The Trapps R: Carriageway of Waterside	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-76	Botley Road, Chesham, near playing fields	Occurs regularly	Surface Water	S: Surface Water P: Botley Road and fields either side of road R: Botley Road carriageway. Flood reaches up to 2ft deep locally (anecdotal).	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-77	Hog Lane, near Ashley Green	Not specified	Surface Water	S: Surface Water P: Fields surrounding Hog Lane R: Low point in Hog Lane, 50m from John's Lane. Whole road floods	Not known	Not known/None undertaken	None proposed	Chiltern DC

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-78	Oak Lane, St Leonards, on bend near Widow Croft	Not specified	Surface Water	S: Surface Water P: Road carriageway and surrounding land R: Oak Lane	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-79	Oak Lane, St Leonards, on junction with Jenkins Lane	Not specified	Surface Water	S: Surface Water P: Surrounding fields R: Oak Lane	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-80	Latimer Camp Road, Latimer	2010, 2006	Surface Water	S: Surface Water P: Fields behind house R: Property on Latimer Camp Road floods badly	Not known	Not known/None undertaken	Soakaway with borehole silts up and needs clearing. BCC responsible to maintain	Chiltern DC
D-81	Pednor Road nr Westdean Lane	Not specified	Surface Water	S: Surface Water P: Pednor Road valley R: Pednor Road floods completely	Not known	Gullies silt up and road floods. Maintenance needed.	None proposed	Chiltern DC
D-82	Arrewig Lane on corner of Three Gates Farm	Not specified	Surface Water	S: Surface Water P: Small valley that runs across Arrewig Lane at this location R: Road carriageway floods	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-83	High Street/Lower Road, Chalfont St Peter	Not specified	Surface Water	S: Surface Water P: Sewerage Surcharges after heavy rainfall R: Road carriageway floods	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-84	Church Street, Amersham Old Town	Not specified	Surface Water	S: Surface Water P: Surcharge of public sewers R: Road carriageway floods	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-85	Parsonage Place, Station Road, Amersham	Not specified	Surface Water	S: Surface Water P: Flow through Parsonage Wood behind property R: Parsonage Place properties	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-86	A412 to slough from Five Points Roundabout, Iver	Not specified	Surface Water	S: Surface Water P: A412 road carriageway R: A412 road carriageway	Not known	Not known/None undertaken	None proposed	Chiltern DC
D-87	Queen's Head PH, Whielden Gate	Not specified	Surface Water	S: Surface Water P: Water flows from surrounding 4 valleys that converge at this point. Can arrive in "torrent of water" (anecdote) R: Queen's Head PH and A404 Whielden Lane	Not known	Not known/None undertaken	None proposed	Chiltern DC

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-88	Riding Lane, Beaconsfield	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Steep hillsides bounding the road and the road surface R: Riding Lane, Beaconsfield	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-89	M40 - multiple locations	Not specified	Surface Water	S: Surface Water after heavy rainfall P: M40 carriageway R: M40 carriageway	Not known	Work is taking place to improve drainage in the road gulleys	None proposed	South Bucks DC (David Gilmour)
D-90	Lillyfee Farm Road, near Wooburn Common	Not specified	Groundwater	S: Altered groundwater flow following gravel extraction P: Surrounding open land and road carriageway R: Lillyfee Farm Road	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-91	Fields behind Castleman's Farm, near Wooburn Common	Not specified	Groundwater	S: Altered groundwater flow following gravel extraction P: Surrounding fields and open land R: Fields behind Castleman's Farm, between Lillyfee Farm Lane and Green Common Lane	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-92	Hitcham Lane, near Taplow	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Fields surrounding Hitcham Lane R: Low point(s) in Hitcham Lane	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-93	St Nicholas C of E School, Taplow	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Not clear R: Grounds of St Nicholas C of E School	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-94	Ellington Gardens/Ellington Road	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Private drainage overwhelmed R: Properties in Ellington Gardens/Ellington Road	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-95	River Road	Not specified	Surface Water	S: Surface Water after heavy rainfall P: River Road R: Dip in River Road as it passes under railway line. Can flood to 3 or 4 feet in depth	Occurs regularly	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-96	Amerden Lane	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Amerden Lane R: Dip in Amerden Lane as it passes under railway line. Can flood to 3 or 4 feet in depth	Occurs regularly	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-97	Station Road	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Station Road R: Dip in Station Road as it passes under railway line. Can flood to 3 or 4 feet in depth	Occurs regularly	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-98	Hitcham Road	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Hitcham Road R: Dip in Hitcham Road as it passes under railway line. Can flood to 3 or 4 feet in depth	Occurs regularly	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-99	Taplow Road	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Taplow Road R: Dip in Taplow Road as it passes under railway line. Can flood to 3 or 4 feet in depth	Occurs regularly	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-100	Lent Rise Road	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Lent Rise Road R: Dip in Lent Rise Road as it passes under railway line. Can flood to 3 or 4 feet in depth	Occurs regularly	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-101	Bath Road	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Bath Road R: Dip in Bath Road as it passes under railway line. Can flood to 3 or 4 feet in depth	Occurs regularly	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-102	Burnham Sewage Works, Bath Road	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Not clear R: Burnham Sewage Works. If it floods then the SBDC depot next door would flood with contaminated water	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-103	High Street, Burnham	Not specified	Surface Water	S: Source unclear, probably surface water P: Built up area and roads around High Street R: Basements of properties in High Street, Burnham	Has occurred a number of times	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-104	Bottom Waltons Caravan Site, Walton Lane	Not specified	Unknown	S: Not known P: Not clear R: Not clear, but Bottom Waltons Caravan Site marked as 'at risk' by David Gilmour (SBDC)	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-105	Stoney Lane	Not specified	Surface Water	S: Surface Water P: The road carriageway R: The highway floods and there are 1 or 2 properties that could be at risk if flooding were severe	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-106	One Pin Lane, Farnham Common	Not specified	Surface Water	S: Surface water and poor drainage P: Not clear R: Highway of One Pin Lane	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-107	Mayflower Way, Farnham Common	Not specified	Surface Water	S: Surface Water. Thames Water Infrastructure Problem P: Local hardstanding and road surfaces R: Property and gardens in Mayflower Way	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-108	Templewood Lane, Farnham Common	Not specified	Surface Water	S: Surface Water. Poor drainage P: Templewood Lane R: Properties on south side of Templewood Lane	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-109	Maxwell Road, Beaconsfield	Not specified	Surface Water	S: Surface Water P: Local hardstanding and road surfaces R: Maxwell Road, not specified whether properties are affected	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-110	Amersham Road, Beaconsfield	Not specified	Surface Water	S: Surface Water during intense rainfall P: Amersham Road, Longbottom Lane, surrounding land R: Junction of Amersham Road and Longbottom Lane in the dip.	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-111	A40 Oxford Road	Not specified	Surface Water	S: Surface Water P: Road surface of A40 Oxford Road R: A40 Oxford Road	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-112	Ponders End, Hedgerley Lane, near Gerrards Cross	Not specified	Surface Water	S: Surface Water/Ephemeral w/course in Bulstrode Park P: Bulstrode Park and land surrounding Hedgerley Lane R: Hedgerley Lane and Ponders Enc. Has flooded across the entire carriageway	Not known	Works have taken place that may have alleviated the problem.	None proposed	South Bucks DC (David Gilmour)
D-113	Hedgerley Hill, Hedgerley	Not specified	Surface Water	S: Surface Water P: Surface water runs off the adjacent hillside	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
				R: Area near pond in Hedgerley				
D-114	Dukes Valley and Mount Hill Lane, south of M40	Not specified	Surface Water	S: Surface Water P: Runoff from hillside north of M40, which passes under M40 through culvert R: Dukes Valley and Mount Hill Lane	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-115	Hazel Way, Stoke Poges	Not specified	Surface Water	S: Surface water. Private drainage and pitch fibre. P: Local hardstanding and road surfaces R: Hazel Way, Pennylets Green	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-116	West End Lane	Not specified	Surface Water	S: Surface Water P: Not clear R: Road and properties at west end of West End Lane	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-117	B416 Park Road near Farnham Royal	Not specified	Surface Water	S: Surface Water P: Golf course and culvert under B416 Park Road R: B416 Park Road culvert backs up and floods road	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-118	B416 Bells Hill	Not specified	Surface Water	S: Surface Water P: Not clear R: One property affected	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-119	Wexham Park Lane	Not specified	Surface Water	S: Surface Water from Pinewood Studio P: Pinewood stage releases water, flows into Black Park Lake. Overtops control weir R: Wexham Park Lane near Hospital	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-120	Wood Lane, near Iver	Not specified	Unknown	S: Overspill from trout farm P: Not clear R: Wood Lane	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-121	Langley Corner	Not specified	Surface Water	S: Surface Water P: Not clear R: Langley Corner, some freezing issues.	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-122	Railway culvert exit near Gerrards Cross	Not specified	Surface Water	S: Tesco car park P: Pipe that runs along railway cutting culvert R: Area where culvert exits near River Misbourne	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-123	Sevenhills Road, near Ways Farm	Not specified	Surface Water	S: Surface Water P: Surrounding land and hillsides R: Pockets of Sevenhills Road flood	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-124	M25 embankment and sewage treatment works on Amersham Road	Not specified	Surface Water	S: Surface Water running off M25 and its embankment P: Slope of M25 embankment R: Amersham Road (Tattling End) Sewage Treatment Works	Not known	Balancing ponds added that may have rectified problem	None proposed	South Bucks DC (David Gilmour)
D-125	A412 North Orbital Road, Denham Green	Not specified	Surface Water	S: Surface Water P: Carriageway of A412 R: The A412 road carriageway, at the bottom of the rise.	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-126	Willowbank estate	Not specified	Surface Water	S: Fluvially-influenced surface water P: Not clear R: Properties in Willowbank estate	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-127	Sewage Pumping Station, Knighton Way Lane	Not specified	Unknown	S: Not specified P: Not clear R: Sewage Pumping Station	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-128	Sevenhills Road near Iver Heath	Not specified	Surface Water	S: Surface water and poor drainage by property P: Not clear R: Single property on Sevenhills Road	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-129	Gypsy site, Swallow Street near Iver	Not specified	Surface Water	S: Surface water P: Not clear R: Gypsy site on Swallow Street	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-130	Land west of Love Lane, Love Green	Not specified	Surface Water	S: Surface water. Drainage tank filled in. P: Land to west of Love Lane R: Not specified.	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-131	North Park near Iver Station	Not specified	Surface Water	S: Surface water. Ditches culverted and filled in. P: North Park road R: North Park road	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-132	Property off St Leonards Walk	Not specified	Surface Water	S: Surface water P: Runoff flows south from sports ground towards property and down path R: Single property off St Leonards Walk	Not known	Not known/None undertaken	None proposed	South Bucks DC (David Gilmour)
D-133	Pitch Green	Not specified	Surface Water	S: Surface Water linked to high groundwater levels P: Not clear R: Pitch Green	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-134	Horsenden, near Princes Risborough	Winter 2000/2001	Groundwater	S: Groundwater P: Not clear R: Properties in Horsenden	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-135	Market Square, Princes Risborough	Winter 2000/2001	Groundwater	S: Groundwater P: Built up area in Princes Risborough R: Market Square	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-136	School, Wellington Avenue, Princes Risborough	Winter 2000/2001	Groundwater and Surface Water	S: Surface water flooding and high groundwater levels P: The private sewer R: School on Wellington Avenue	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-137	Mead Acre, Monks Risborough	Winter 2000/2001	Groundwater	S: Groundwater P: Built up area in Monks Risborough R: Mead Acre	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-138	Mill Lane, Monks Risborough	During intense rainfall	Surface Water	S: Surface water during intense rainfall P: Mill Lane R: Dip in Mill Lane as it passes under railway line	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-139	Askett	Winter 2000/2001	Groundwater	S: Groundwater P: Not clear R: Askett	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-140	Town End	Winter 2000/2001	Groundwater	S: Groundwater P: Not clear R: Town End	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-141	Haw Lane, near Saunderton	Not specified	Surface Water	S: Surface water P: Haw Lane and surrounding fields R: Haw Lane	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-142	A4010 Saunderton	Not specified	Surface Water	S: Surface water P: A4010 valley road R: Saunderton at junction of A4010 and Smalldean Lane	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-143	A4010 Bradenham	Not specified	Surface Water	S: Surface water P: A4010 valley road R: Bradenham at junction of A4010 and Bradenham Wood Lane	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-144	Highwood Bottom	Not specified	Surface Water	S: Surface water P: Down hillside towards Hughenden R: Highwood Bottom Road	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-145	Water Lane, Speen	Winter 2000/2001	Groundwater	S: Groundwater P: Not clear R: Water Lane, Speen	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-146	Upper North Dean	Winter 2000/2001	Groundwater	S: Groundwater P: Hillside and Road leading into village R: Speen Road at Upper North Dean	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-147	Bryant's Bottom Road	Winter 2000/2001	Groundwater	S: Groundwater P: Bryant's Bottom Road R: Bryant's Bottom Road (becomes "river-like")	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-148	Warrendene Road	Not specified	Surface Water	S: Heavy rainfall and surface water P: Surface water runs off fields surrounding Warrendene Road and then passes through culverts R: Warrendene Road and top of Hughenden Valley	Not known	Council have upgraded culverts under Warrandene Road to encourage water into stream	None proposed	Wycombe DC (Brian Rodgers)
D-149	A40 Wycombe Road near Stokenchurch	Not specified	Groundwater and Surface Water	S: Groundwater and Surface Water P: A40 Wycombe Road R: A40 Wycombe Road	Not known	Soakaways installed to intercept surface water	Mitigation works have alleviated much of the problem	Wycombe DC (Brian Rodgers)
D-150	Bricks Lane, Beacon's Bottom	Not specified	Groundwater and Surface Water	S: Groundwater and Surface Water P: A40 Wycombe Road and Waterend Road from Stokenchurch R: Properties on Bricks Lane, Beacon's Bottom	Not known	New soakaways installed by Council near Waterend to encourage water of road. Has helped to a degree but flooding still occurs.	None proposed	Wycombe DC (Brian Rodgers)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-151	The Pitch, Beacon's Bottom	Not specified	Groundwater and Surface Water	S: Groundwater and Surface Water P: A40 Wycombe Road and Waterend Road from Stokenchurch R: Properties on The Pitch, Beacon's Bottom	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-152	Bottom Road, near West Wycombe	Not specified	Groundwater	S: Groundwater P: The valley of Bottom Road R: Bottom Road	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-153	High Street, West Wycombe	Not specified	Surface Water	S: Surface Water P: Chorley Road, West Wycombe Hill, Oxford Road R: High Street, West Wycombe (flood depth up to 300mm)	Not known	Council have tried to encourage water to cross the High Street between the properties and into the lakes on the south side, but flooding still occurs	None proposed	Wycombe DC (Brian Rodgers)
D-154	A4010 Bradenham Road	Not specified	Groundwater and Surface Water	S: Groundwater and Surface Water P: Valley of A4010 Bradenham Road R: A4010 Bradenham Road	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-155	Coates Lane, High Wycombe	Winter 2000/2001	Groundwater	S: Groundwater (feeding Hughenden Stream) P: Hughenden Valley R: Coates Lane properties (4 flooded)	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-156	Desborough, High Wycombe	Not specified	Surface Water	S: Surface Water P: Hardstanding surfaces and roads in Desborough R: Roads in Desborough	Not known	Not known/None undertaken	Improved urban drainage	Wycombe DC (Brian Rodgers)
D-157	Frogmoor/Oxford Road, High Wycombe	August 1954	Surface Water	S: Surface Water P: Hughenden Valley and overflow from Hughenden Stream R: Shops and Road in Frogmoor and Oxford Road	Not known	Town centre drainage improvements undertaken since	None proposed	Wycombe DC (Brian Rodgers)
D-158	Hamilton Road/Ridge Way	Not specified	Surface Water	S: Surface Water P: Roads and hardstanding R: Hamilton Road/Ridge Way	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-159	Brands Hill Avenue	Not specified	Surface Water	S: Surface Water P: Roads and hardstanding R: Brands Hill Avenue	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-160	Hazlemere	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Western Dene and Sawpit Hill R: Holmer Green Road and central Hazlemere	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-161	Terryfield Road, High Wycombe	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Sheet flow from urban area on hillside above R: Terryfield Road	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-162	Cock Lane, Micklefield	Not specified	Surface Water	S: Surface Water P: Valley between Micklefield and Tylers Green and Cock Lane R: Properties on Cock Lane	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-163	London Road, east of High Wycombe	Not specified	Surface Water	S: Surface Water P: Sheet flow from urban area on hillside above R: London Road highway	Occurs regularly	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-164	Potters Cross	Not specified	Surface Water	S: Surface Water after heavy rainfall P: Hazlemere Road, New Road R: Potters Cross junction and area, including properties.	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-165	Bolter End	Not specified	Groundwater and Surface Water	S: Groundwater and Surface Water P: Fingest Lane and flow from Hanover Hill R: Bolter End	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-166	Bottom Wood, near Frieth	Not specified	Groundwater	S: Groundwater P: Not clear R: Not known	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-167	Hambleden	Not specified	Groundwater	S: Groundwater (feeding Hamble Brook) P: Hamble Brook valley R: Hambleden	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-168	Willow Mead estate, Marlow	Not specified	Groundwater	S: Groundwater from line of springs in Marlow P: Roads in built up area R: Willow Mead estate	Only in extreme events	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-169	Kenton Close, Marlow	Not specified	Groundwater	S: Groundwater from line of springs in Marlow P: Roads in built up area R: Kenton Close and surrounding roads	Only in extreme events	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-170	Dedmere Road, Marlow	Not specified	Groundwater	S: Groundwater from line of springs in Marlow P: Roads in built up area R: Dedmere Road and surrounding roads	Only in extreme events	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-171	The Acre, Marlow	Not specified	Groundwater	S: Groundwater from line of springs in Marlow P: Roads in built up area R: The Acre and surrounding roads	Only in extreme events	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-172	Little Marlow Road, near Maple Rise	Not specified	Groundwater	S: Groundwater from line of springs in Marlow P: Roads in built up area R: Little Marlow Road	Only in extreme events	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-173	Little Marlow Road	Not specified	Groundwater	S: Groundwater from line of springs in Marlow P: Roads in built up area R: Little Marlow Road	Only in extreme events	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-174	Bottom of Boss Lane and Coombe Lane, near Hughenden	Not specified	Groundwater	S: Groundwater P: Boss Land, Coombe Lane, hillside. R: Speen Road in Hughenden	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-175	Turville	Not specified	Groundwater	S: Groundwater P: Holloway Lane R: Turville village	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-176	Skirmett	Not specified	Groundwater	S: Groundwater (feeding Hamble Brook) P: Not clear R: Skirmett	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-177	Fingest	Not specified	Groundwater	S: Groundwater P: Chequers Lane R: Fingest	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-178	Hampden Road, Great Hampden	Jan 2007	Surface Water	S: Surface water P: Surrounding land and hillsides as well as carriageway of Hampden Road R: Properties and Hampden Road in Great Hampden	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)
D-179	Micklefield Road, Micklefield	Not specified	Surface Water	S: Surface water P: Micklefield Road and surrounding estates feed surface water into Thames Water sewer that is under capacity R: Properties in Micklefield Road	Not known	Not known/None undertaken	None proposed	Wycombe DC (Brian Rodgers)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Frequency	Mitigation	Potential Solution	Information Source
D-180	Pound Lane, Marlow	Not specified	Groundwater and Surface Water	S: Surface water and groundwater P: Local areas for surface water and local gravels for groundwater R: Properties and roads in depression on Pound Lane	Not known	Council have installed a pump system, but flooding still occurs.	None proposed	Wycombe DC (Brian Rodgers)

Table B.13: TfB Transport for Buckinghamshire Flooding Records (Created Feb 2011)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Mitigation	Potential solution	Information Source (Jacobs comment)
TfB-1	Buckingham		Fluvial	S: Great Ouse P: River R: Low lying areas adjacent to river footpath/roads/gardens/properties		Lack of maintenance; the solution is better cyclic maintenance	TfB Wycombe Area Office (Coordinates to be provided)
TfB-2	West Wycombe		Surface Water	S: Wye Former Cress Beds on West Wycombe Estate issues with Cress/vegetable matter (cress/aquatic weeds) blocking drains P: Not Specified R: Highway/fields		Lack of maintenance; the solution is better cyclic maintenance	TfB Wycombe Area Maintenance (Coordinates to be confirmed)
TfB-3	Hughenden Ave High Wycombe	4-5 years ago	Surface Water	S: Culvert issue required divers to clear P: Road steep hill R: Road		Lack of maintenance; the solution is better cyclic maintenance	TfB Wycombe Area Maintenance
TfB-4	Wycombe/West Wycombe A4010 Pedestal roundabout		Surface Water	S: Springs/Winterbourne during periods of extended rain P: Not Specified R:		Lack of maintenance; the solution is better cyclic maintenance	TfB Wycombe Area Maintenance
TfB-5	Pound Lane/Gossmore Lane Marlow		Fluvial	S: Thames P: River floods across parkland/fields R: Highway, footpath, gardens	Some pumping already installed, but EA has developed and had drawn up bigger scheme which has been put on hold no idea when this might be funded and proceed		TfB Wycombe Area Maintenance (Coordinates to be provided)
TfB-6	Sheepish Lane, Flackwell Heath		Surface Water	S: High groundwater event. Natural spring runs off into gully P: Not Specified R: Highway			TfB Wycombe Area Maintenance (Coordinates to be confirmed)
TfB-7	Amersham A413 the Chalfonts/Misbourne		Unknown	S: Not Specified P: Not Specified R: Highway			TfB (Coordinates to be provided)

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Mitigation	Potential solution	Information Source (Jacobs comment)
TfB-8	Chesham Waterside/Moor Rd/Pheasant Hill		Groundwater	S: High groundwater event P: Not Specified R: Highway			TfB
TfB-9	Beaconsfield Long Bottom Lane/Seer Green/ Chesham Waterside/ Moor Rd/ Pheasant Hill		Groundwater	S: High groundwater event. Sink Holes P: Not Specified R: Highway			TfB (Coordinates to be provided)
TfB-10	Hambleden Village Road/Flood Relief Road		Groundwater	S: High groundwater event P: Not Specified R: Highway	Some protective tables can be installed and are managed by TfB some questions as to current location of tables		TfB (Coordinates to be confirmed)
TfB-11	Watery Lane		Groundwater	S: High groundwater event P: Spring runs down road R: Highway	Road Closed		TfB (Coordinates to be confirmed)
TfB-12	West Hyde Lane Denham/Maple Cross		Groundwater	S: High groundwater event P: Spring runs down road R: Highway	Road Closed		TfB (Coordinates to be provided)
TfB-13	Some Bridges where road has been lowered are susceptible to flooding		Groundwater	S: High groundwater event P: Spring runs down road R: Highway	Road Closed		TfB (Coordinates to be provided)
TfB-14	Wood Lane, Iver		Groundwater	S: High groundwater event P: Spring runs down road R: Highway	Drains not being maintained adequately	Scheduled maintenance according to known need	TfB (Coordinates to be confirmed)
TfB-15	Bourne End, Ferry Lane		Surface Water	S: heavy/prolonged rain events P: Not Specified R: Highway	Drains not being maintained adequately	Scheduled maintenance according to known need	TfB (Coordinates to be confirmed)
TfB-16	Little Kingshill, Water Lane		Surface Water	S: heavy/prolonged rain events P: Not Specified R:	Drains not being maintained adequately	Scheduled maintenance according to known need	TfB (Coordinates to be confirmed)
TfB-17	Johns Lane, Ashley Green close to Johns Lane farm	Times of heavy rain	Surface Water	S: heavy/prolonged rain events P: Field run off R: Highway and verge	lack of drainage ditch re-instatement		TfB

Ref. No.	Location	Dates	Flooding Source	Source, Pathway, Receptor	Mitigation	Potential solution	Information Source (Jacobs comment)
TfB-18	Oak Lane, Braziers End just South of junction with Jenkins Lane	Times of heavy rain	Surface Water	S: heavy/prolonged rain events P: Field run off R: Highway and verge	lack of drainage ditch re-instatement		TfB
TfB-19	Bellingdon Road Field Flooding north from mount nugent farm	Times of heavy rain	Surface Water	S: heavy/prolonged rain events P: Field run off R: Highway and verge	lack of drainage ditch re-instatement		TfB
TfB-20	Pednor Hyde Heath Lane Junction with Herberts Hole Junction	Times of heavy rain	Surface Water	S: heavy/prolonged rain events P: Field run off R: Highway and verge	lack of drainage ditch re-instatement		TfB
TfB-22	Chesham High Street Pet Shop Flooded Culvert cover lifted	Some years ago	Surface Water	S: heavy/prolonged rain events P: Not Specified R: Pet Shop			TfB
TfB-23	Chesham High Street		Surface Water	S: Surface water/Chess P: Not Specified R: Properties in High Street	Grids on drains in high street were changed post-2007 to 400mm bigger then previous goes into existing road gully which may link into vale brook culvert.		TfB (Coordinates to be confirmed)
TfB-24	Pednor Bury Pond Chesham		Surface Water	S: Surface water/Chess following heavy/prolonged rain events P: Not Specified R: Properties	Controlled release at sluice at times of heavy rain. (Bury Pond at Lake House/Lowdens House/The Bury unsure if owner has a sluice gate which has been operated during times of heavy rain which has resulted in flooding in Pednor Mead)		TfB
TfB-25	Lower Park Shardeloes West of Amersham Old Town		Surface Water	S: Shardeloes lake following heavy/prolonged rain events P: Not Specified R: Amersham Old Town	Controlled release at sluice at times of heavy rain		TfB (Coordinates to be confirmed)

Table B.14: BW British Waterways canal flooding records

Ref. No.	Location	Canal	Dates	Description
BW-1	Adjacent Tesco Aylesbury	Aylesbury Arm (Marsworth to Aylesbury)	March 2008	Heavy rain and choked lock bypass, Overtopping dimensions 6m x 0.08m
BW-2	Lock 4	Aylesbury Arm (Marsworth to Aylesbury)	February 1994	Culvert collapse, damage to lock wall approach. Rural area, loss of pound above
BW-3	Chelmscott Embankment	Grand Union Canal (Marsworth to Grove & Old Linslade to Stoke Hammond)	April 2000?	Slip adjacent to river Ouzel shortly after Easter floods. No loss of water

Table B.15: HA Highways Agency records

Ref. No.	Date	Flooding Source	Ref. No.	Date	Flooding Source
HA-1	03/03/2002	Unknown	HA-31	14/07/2010	Unknown
HA-2	03/03/2002	Unknown	HA-32	26/08/2010	Unknown
HA-3	10/03/2002	Unknown	HA-33	18/01/2011	Unknown
HA-4	17/12/2002	Unknown	HA-34	18/01/2011	Unknown
HA-5	30/12/2002	Unknown	HA-35	18/01/2011	Unknown
HA-6	04/05/2004	Unknown	HA-36	19/02/2011	Unknown
HA-7	28/04/2005	Unknown			
HA-8	20/10/2005	Unknown			
HA-9	10/05/2006	Unknown			
HA-10	20/05/2006	Unknown			
HA-11	24/05/2006	Unknown			
HA-12	25/05/2006	Unknown			
HA-13	19/08/2006	Unknown			
HA-14	06/09/2006	Unknown			
HA-15	06/09/2006	Unknown			
HA-16	24/09/2006	Unknown			
HA-17	12/02/2007	Unknown			
HA-18	18/06/2007	Unknown			
HA-19	20/07/2007	Unknown			
HA-20	20/07/2007	Unknown			
HA-21	21/07/2007	Unknown			
HA-22	15/08/2007	Unknown			
HA-23	10/03/2008	Unknown			
HA-24	30/09/2008	Unknown			
HA-25	09/02/2009	Unknown			
HA-26	14/05/2009	Unknown			
HA-27	02/12/2009	Unknown			
HA-28	06/12/2009	Unknown			
HA-29	07/12/2009	Unknown			
HA-30	16/02/2010	Unknown			

Appendix C - Records of Sewer Flooding

The map on the following page – reproduced from the Buckinghamshire Waste and Minerals SFRA - shows the number of incidents of sewer flooding recorded by Thames Water per postcode area. No similar data were available for Aylesbury Vale District, either from Thames Water or Anglian Water. However, Anglian Water provided the following for their portion of Aylesbury Vale District for this PFRA:

Town / City	Postcode	Number of recorded incidents
Akeley	MK18 5	2
Buckingham	MK18 1	7
Gawcott / Twyford	MK18 4	2
Ivinghoe Aston	LU7 9	1

Table C.1 Incidents of sewer flooding recorded by Anglian Water in Aylesbury Vale District

Appendix D - Preliminary Assessment Report Spreadsheet

Placeholder for the Preliminary Assessment Report Spreadsheet content.

Appendix E - Locally Agreed Surface Water Information

The maps on the following pages show the Environment Agency’s Flood Map for Surface Water which has been adopted as the locally agreed surface water information. Also shown on the maps are the environmental and cultural receptors which lie within the Flood Map for Surface Water outlines.

As stated in Chapter 5, the critical services shown on the maps are included in the National Receptor Dataset (NRD) and are defined in Annex 6 of the PFRA guidance (Environment Agency, 2010a). For the purpose of the following maps, the categories of services have been defined as per Table E.1 below.

Critical Service	MCM Code in NRD	Comment
Schools	001, 610	As specified in Table 6.1 of Annex 6 of Environment Agency, 2010a
Care and Residential Homes	625	Includes nursing homes
Prisons	625	
Emergency Services	650, 651	
Hospitals	660	'Veterinary surgeries' omitted
Water and Sewage	840	Includes slurry storage
Electricity and Gas	960	
Telecommunications	960	

Table E.1 Critical services in the National Receptor Dataset

Appendix F - Groundwater Flood Maps