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# Buckinghamshire County Council

# Preliminary Flood Risk Assessment Report Final

May 2011

Transport for Buckinghamshire

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| ORIGINAL | NAME<br>Elmar Torenga | NAME<br>David Cobby | NAME<br>Iain Blackwell | NAME<br>David Cobby |
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| REVISION | NAME<br>Elmar Torenga | NAME<br>David Cobby | NAME<br>Iain Blackwell | NAME<br>David Cobby |
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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.

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# 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. |
| AStSWF | 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 |

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# 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 km$^2$. 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 km$^2$. 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 Thame, 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 $km^2$ 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 $km^2$ 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 $km^2$ 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 Chilterns 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.

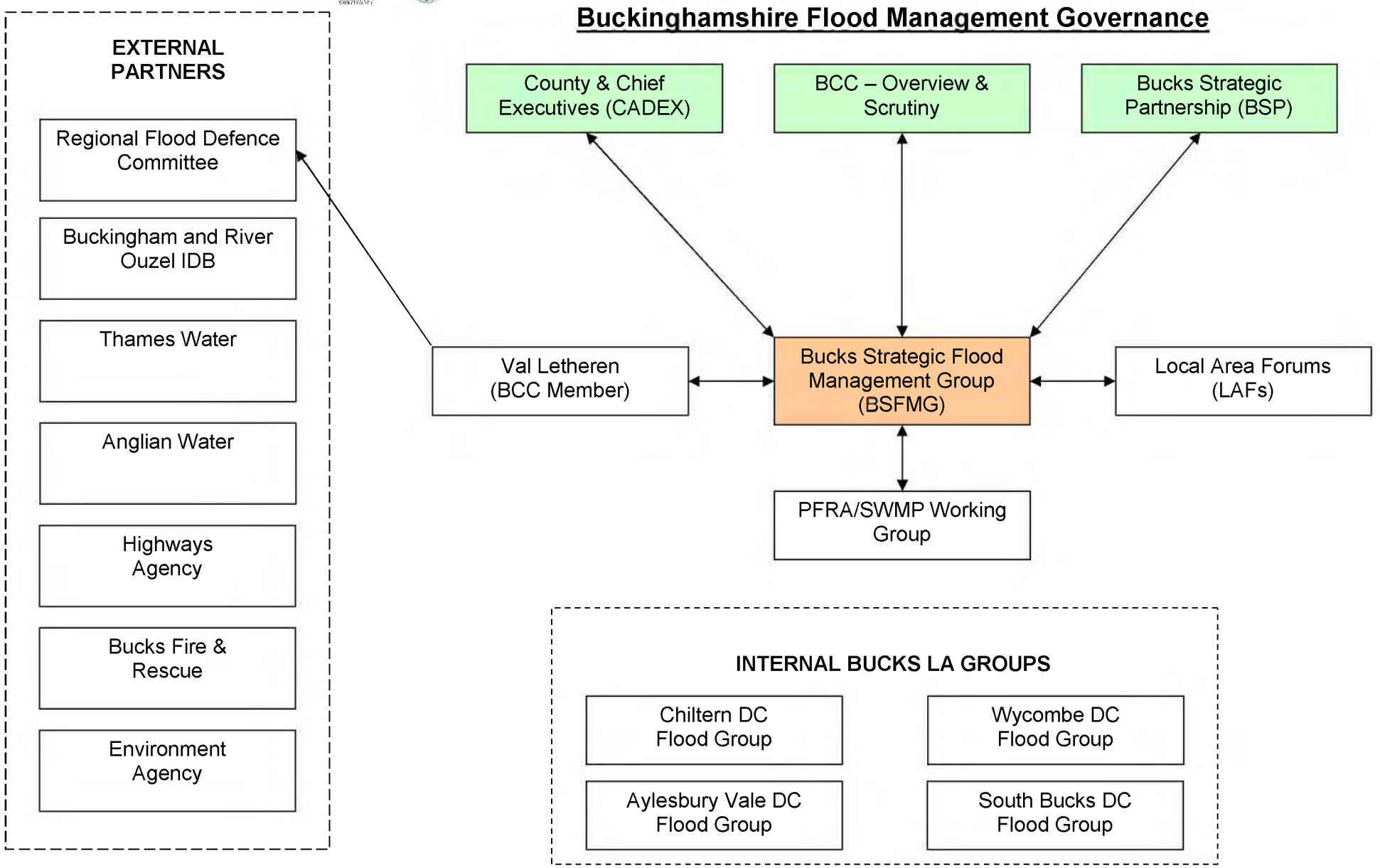


***Figure 2.1 Buckinghamshire Strategic Flood Management Group Organogram***

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 20th 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 (AStSWF, 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 1km$^2$ 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 $km^2$. 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 (AStGWF; 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.

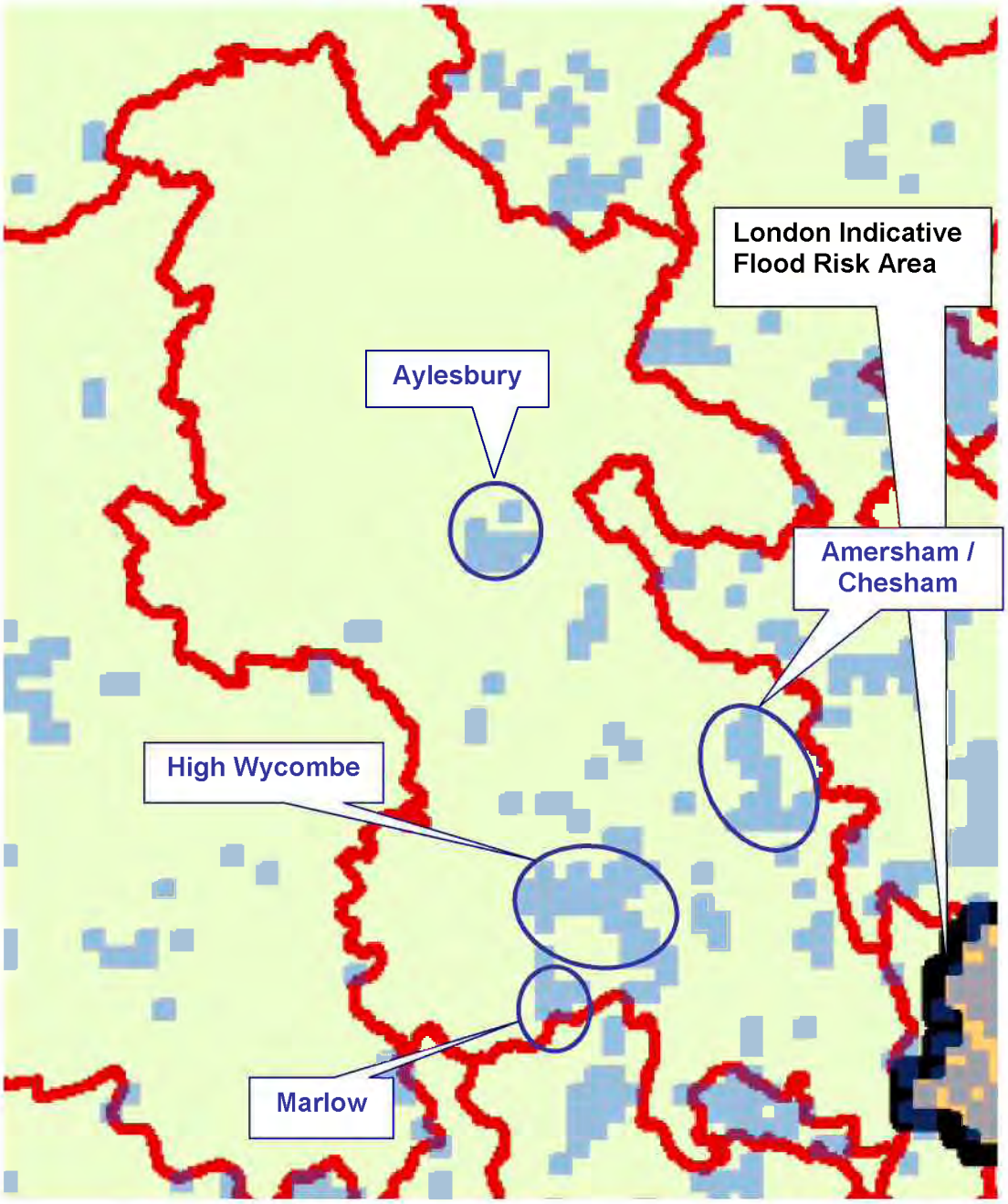


*Figure 6.1 Places above flood risk thresholds in Buckinghamshire*

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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Jacobs (2008d), Wycombe District Strategic Flood Risk Assessment (SFRA) Level 2 (Final), December 2008

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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 foul 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 Thame) | 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 Thame) | 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 | GRIMSDELLS 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 | MISSENDEN 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 Berkhampstead Road. | Surface Water |
| ChP-8 | Cottages in Pednormead End were badly flooded in a 2006 event. Sand bags are deployed infront of house on Church Street and there are flooding problems on Missenden Road. | Fluvial |
| ChP-9 | Heavy rainfull leads to water flowing down Fuller Hill and into Germains 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 sigh 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 Draincare13/1010. 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 Campion 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 Beaconsfireld | 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 | Willets 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 | Framewood 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 Beaconsield | 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 Ingleglen 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 | Ingleglen Farnham Common | Street | 2001 | Surface Water |
| SBD-133 | ú9 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 SL0 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 elliviate 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 occured 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<br>P: Ordinary Watercourse<br>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<br>P: Ordinary Watercourse<br>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<br>P: Road<br>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<br>P: Ordinary Watercourse<br>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<br>P: Floodplain of River Great Ouse<br>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<br>P: Road<br>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<br>P: Road<br>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<br>P: Hillside to the south of Thornborough<br>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<br>P: Road<br>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<br>P: Ordinary Watercourse<br>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<br>P: Fields to south east of town<br>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<br>P: High Street<br>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<br>P: Ordinary Watercourse<br>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<br>P: Ordinary Watercourse<br>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<br>P: Ordinary Watercourse<br>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<br>P: Car Park<br>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<br>P: Highway<br>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<br>P: Highway<br>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<br>P: Ordinary Watercourse<br>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<br>P: Ordinary Watercourse<br>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<br>P: Fields and Roads<br>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<br>P: Ordinary Watercourse<br>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<br>P: Ordinary Watercourse<br>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<br>P: Land between village and North End<br>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<br>P: Road<br>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<br>P: Not clear<br>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<br>P: Fields and hardstanding in village<br>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<br>P: Bicester Road<br>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<br>P: Not clear<br>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<br>P: Hillside of Rid's Hill<br>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<br>P: Not clear<br>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<br>P: Highway<br>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)<br>P: Ditch backs up and overflows<br>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<br>P: Not clear<br>R: Road at bottom of hill | Not known | Not known/None undertaken | De-siltation of local ditches suggetested | Aylesbury DC (B Kemplen, Gary Dawson) |
| D-35 | Townsend, Haddenham | Not specified | Ordinary Watercourse | S: Backing up of watercourse and Rudd's Lane pond<br>P: Road and built up area<br>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<br>P: Roads to west of Market Hill<br>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<br>P: Fields and road<br>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<br>P: Fields and road<br>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<br>P: Ordinary Watercourse<br>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<br>P: Fields and road<br>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<br>P: Road<br>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<br>P: Fields and road<br>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)<br>P: Field and roads<br>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<br>P: Field and roads<br>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<br>P: Roads and hardstanding<br>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<br>P: Ordinary Watercourse and Bicester Road/Broadfield<br>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<br>P: Weedon Road<br>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<br>P: Not clear<br>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<br>P: Land behind Cleveland Road<br>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<br>P: Land and built up area east of Lark Vale and Cleveland Road<br>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<br>P: Not clear<br>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<br>P: High Street and Exchange Street<br>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<br>P: High Street and Exchange Street<br>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 gulley<br>P: Not clear<br>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<br>P: Surrounding land and road surface<br>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<br>P: Cartridge Lane and Property Driveways<br>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<br>P: Asheridge Road<br>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<br>P: Mount Nugent and surrounding roads<br>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<br>P: Mount Nugent to Hiving's Hill<br>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<br>P: Slope of subway<br>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<br>P: Mount Nugent - Hiving's Hill - Bellingdon Road<br>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<br>P: Bellingdon Road - Sunnyside Road - Broad Street<br>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<br>P: Vale Road - Berkhampstead Road - Broad Street<br>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<br>P: Collapsed drain in Kirtle Road does not allow drainage of surface water<br>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<br>P: The Spinney and the road and hillside above it<br>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<br>P: High Street and Market Square<br>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<br>P: Broad Street and High Street<br>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<br>P: Water could not exit drainage system, so back-filled causing flooding<br>R: The Backs | Not known | Connection gulley 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<br>P: Missenden Road and Pednor Road as well as field between the two<br>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<br>P: Missenden Road<br>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<br>P: Fuller's Hill. Silt blocks up road drainage.<br>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<br>P: Not clear<br>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<br>P: Not clear<br>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<br>P: Hillside above Waterside Surface water flows down Springfield Road<br>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<br>P: Hillside above Waterside. Surface water flows down The Trapps<br>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<br>P: Botley Road and fields either side of road<br>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<br>P: Fields surrounding Hog Lane<br>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<br>P: Road carriagway and surrounding land<br>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<br>P: Surrounding fields<br>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<br>P: Fields behind house<br>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<br>P: Pednor Road valley<br>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<br>P: Small valley that runs across Arrewig Lane at this location<br>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<br>P: Sewarage Surcharges after heavy rainfall<br>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<br>P: Surcharge of public sewers<br>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<br>P: Flow through Parsonage Wood behind property<br>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<br>P: A412 road carriageway<br>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<br>P: Water flows from surrounding 4 valleys that converge at this point. Can arrive in "torrent of water" (anecdote)<br>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<br>P: Steep hillsides bounding the road and the road surface<br>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<br>P: M40 carriageway<br>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<br>P: Surrounding open land and road carriageway<br>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<br>P: Surrounding fields and open land<br>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<br>P: Fields surrounding Hitcham Lane<br>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<br>P: Not clear<br>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<br>P: Private drainage overwhelmed<br>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<br>P: River Road<br>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<br>P: Amerden Lane<br>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<br>P: Station Road<br>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<br>P: Hitcham Road<br>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<br>P: Taplow Road<br>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<br>P: Lent Rise Road<br>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<br>P: Bath Road<br>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<br>P: Not clear<br>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<br>P: Built up area and roads around High Street<br>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<br>P: Not clear<br>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<br>P: The road carriageway<br>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<br>P: Not clear<br>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<br>P: Local hardstanding and road surfaces<br>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<br>P: Templewood Lane<br>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<br>P: Local hardstanding and road surfaces<br>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<br>P: Amersham Road, Longbottom Lane, surrounding land<br>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<br>P: Road surface of A40 Oxford Road<br>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<br>P: Bulstrode Park and land surrounding Hedgerley Lane<br>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<br>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<br>P: Runoff from hillside north of M40, which passes under M40 through culvert<br>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.<br>P: Local hardstanding and road surfaces<br>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<br>P: Not clear<br>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<br>P: Golf course and culvert under B416 Park Road<br>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<br>P: Not clear<br>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<br>P: Pinewood stage releases water, flows into Black Park Lake. Overtops control weir<br>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<br>P: Not clear<br>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<br>P: Not clear<br>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<br>P: Pipe that runs along railway cutting culvert<br>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<br>P: Surrounding land and hillsides<br>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<br>P: Slope of M25 embankment<br>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<br>P: Carriageway of A412<br>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<br>P: Not clear<br>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<br>P: Not clear<br>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<br>P: Not clear<br>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<br>P: Not clear<br>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.<br>P: Land to west of Love Lane<br>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.<br>P: North Park road<br>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<br>P: Runoff flows south from sports ground towards property and down path<br>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<br>P: Not clear<br>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<br>P: Not clear<br>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<br>P: Built up area in Princes Risborough<br>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<br>P: The private sewer<br>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<br>P: Built up area in Monks Risborough<br>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<br>P: Mill Lane<br>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<br>P: Not clear<br>R: Askett | Not known | Not known/None undertaken | None proposed | Wycombe DC (Brian Rodgers) |
| D-140 | Town End | Winter 2000/2001 | Groundwater | S: Groundwater<br>P: Not clear<br>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<br>P: Haw Lane and surrounding fields<br>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<br>P: A4010 valley road<br>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<br>P: A4010 valley road<br>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<br>P: Down hillside towards Hughenden<br>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<br>P: Not clear<br>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<br>P: Hillside and Road leading into village<br>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<br>P: Bryant's Bottom Road<br>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<br>P: Surface water runs off fields surrounding Warrendene Road and then passes through culverts<br>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<br>P: A40 Wycombe Road<br>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<br>P: A40 Wycombe Road and Waterend Road from Stokenchurch<br>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<br>P: A40 Wycombe Road and Waterend Road from Stokenchurch<br>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<br>P: The valley of Bottom Road<br>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<br>P: Chorley Road, West Wycombe Hill, Oxford Road<br>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<br>P: Valley of A4010 Bradenham Road<br>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)<br>P: Hughenden Valley<br>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<br>P: Hardstanding surfaces and roads in Desborough<br>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<br>P: Hughenden Valley and overflow from Hughenden Stream<br>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<br>P: Roads and hardstanding<br>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<br>P: Roads and hardstanding<br>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<br>P: Western Dene and Sawpit Hill<br>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<br>P: Sheet flow from urban area on hillside above<br>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<br>P: Valley between Micklefield and Tylers Green and Cock Lane<br>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<br>P: Sheet flow from urban area on hillside above<br>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<br>P: Hazlemere Road, New Road<br>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<br>P: Fingest Lane and flow from Hanover Hill<br>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<br>P: Not clear<br>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)<br>P: Hamble Brook valley<br>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<br>P: Roads in built up area<br>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<br>P: Roads in built up area<br>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<br>P: Roads in built up area<br>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<br>P: Roads in built up area<br>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<br>P: Roads in built up area<br>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<br>P: Roads in built up area<br>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<br>P: Boss Land, Coombe Lane, hillside.<br>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<br>P: Holloway Lane<br>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)<br>P: Not clear<br>R: Skirmett | Not known | Not known/None undertaken | None proposed | Wycombe DC (Brian Rodgers) |
| D-177 | Fingest | Not specified | Groundwater | S: Groundwater<br>P: Chequers Lane<br>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<br>P: Surrounding land and hillsides as well as carriageway of Hampden Road<br>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<br>P: Micklefield Road and surrounding estates feed surface water into Thames Water sewer that is under capacity<br>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<br>P: Local areas for surface water and local gravels for groundwater<br>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<br>P: River<br>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<br>P: Not Specified<br>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<br>P: Road steep hill<br>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<br>P: Not Specified<br>R: | | Lack of maintenance; the solution is better cyclic maintenance | TfB Wycombe Area Maintenance |
| TfB-5 | Pound Lane/Gossmore Lane Marlow | | Fluvial | S: Thames<br>P: River floods across parkland/fields<br>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<br>P: Not Specified<br>R: Highway | | | TfB Wycombe Area Maintenance (Coordinates to be confirmed) |
| TfB-7 | Amersham A413 the Chalfonts/Misbourne | | Unknown | S: Not Specified<br>P: Not Specified<br>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<br>P: Not Specified<br>R: Highway | | | TfB |
| TfB-9 | Beaconsfield Long Bottom Lane/Seer Green/ Chesham Waterside/ Moor Rd/ Pheasant Hill | | Groundwater | S: High groundwater event. Sink Holes<br>P: Not Specified<br>R: Highway | | | TfB (Coordinates to be provided) |
| TfB-10 | Hambleden Village Road/Flood Relief Road | | Groundwater | S: High groundwater event<br>P: Not Specified<br>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<br>P: Spring runs down road<br>R: Highway | Road Closed | | TfB (Coordinates to be confirmed) |
| TfB-12 | West Hyde Lane Denham/Maple Cross | | Groundwater | S: High groundwater event<br>P: Spring runs down road<br>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<br>P: Spring runs down road<br>R: Highway | Road Closed | | TfB (Coordinates to be provided) |
| TfB-14 | Wood Lane, Iver | | Groundwater | S: High groundwater event<br>P: Spring runs down road<br>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<br>P: Not Specified<br>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<br>P: Not Specified<br>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<br>P: Field run off<br>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<br>P: Field run off<br>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<br>P: Field run off<br>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<br>P: Field run off<br>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<br>P: Not Specified<br>R: Pet Shop | | | TfB |
| TfB-23 | Chesham High Street | | Surface Water | S: Surface water/Chess<br>P: Not Specified<br>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<br>P: Not Specified<br>R: Properties | Controlled release at sluice at times of heavy rain.<br>(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<br>P: Not Specified<br>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

# 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