



COPYTHORNE PARISH COUNCIL

A meeting of the Flooding Advisory Committee will be held on Tuesday March 22nd 2022 at Copythorne Parish Hall (rear extension) starting at 7pm.

In accordance with the Local Government Act 1972 (s.100) the public are able to attend and observe meetings of the Flooding Advisory Committee but do not have the right to participate (unless invited to do so by the Chairman of the meeting).

**DUE TO COVID-19 GUIDANCE THE NUMBER OF MEMBERS OF THE PUBLIC ABLE TO ATTEND WILL BE LIMITED.
PLEASE NOTIFY THE CLERK AS SOON AS POSSIBLE IF YOU WOULD LIKE TO ATTEND.
HYGIENE AND SOCIAL DISTANCING RULES WILL APPLY ("HANDS, FACE, SPACE, FRESH AIR")**

Members: Cllrs. Graham Chillcott (Chair), Lady Kara Hawks, Sylvia Wiggins, Sarah Coombs

Observer: Mr. David Rigby – Clerk and RFO

A G E N D A

1. Apologies for absence.
2. Declarations of Interest.
3. Review of notes of previous meeting (February 17th 2022) and action points.
4. Further discussion of a response to the HCC F&WM Team Bartley Flood Investigation Report
(Appendix 1 – HCC F&WM Team Bartley Flood Investigation Report – October 2021)
(Appendix 2 – NFDC - Bartley Flood Relief Scheme – Project Appraisal Report – October 2005)
(Appendix 3 – Cllr. John Goodwin's comments – Copythorne Parish Council meeting - March 8th 2022)
5. Confirm date for next meeting (May 20th 2022, 10am)

David Rigby

Clerk to Copythorne Parish Council
March 15th 2022

Copythorne Parish Council - Flooding AC Meeting – March 22nd 2022

Item 3 – Review of notes of previous meeting (February 17th 2022)

A meeting of the Flooding Advisory Committee was held on Thursday February 17th 2022 at the Royal British Legion Hall, Winsor Road, Winsor starting at 10am.

Present Members: Cllrs. Graham Chillcott (Chair), Lady Kara Hawks, Sylvia Wiggins, Sarah Coombs
Observer: Mr. David Rigby – Clerk and RFO

A G E N D A (with DRAFT notes of discussion)

1. Apologies for absence.

None

2. Declarations of Interest.

None

3. Review of notes of previous meeting (November 29th 2021) and action points.

Those members present at the previous meeting were happy that the notes of the meeting accurately reflected the discussions.

4. Discussion of response received from HCC to the points raised regarding the HCC F&WM Team Copythorne Village Flood Investigation Report.

GC took those present through the report prepared by the Clerk for this item. It was agreed that ongoing monitoring of the next steps contained within the HCC F&WT report together with the “Catchment Management Plans” referred to in the e-mail received from Tom Callaway of the HCC F&WM Team on December 23rd 2021 should be included within the Flooding Advisory Committee’s quarterly “Review of Work Programme”.

5. Discussion of the HCC F&WM Team Bartley Flood Investigation Report.

GC took those present through the report prepared by the Clerk for this item. It was agreed that the eight “Initial Observations” contained in the Clerk’s report should be raised with the HCC F&WM Team for their comments. As with the “Copythorne Village Flood Investigation Report this recommendation should be presented to Council for their approval.

ACTION – The Clerk to prepare a formal report to be submitted to Council for them to approve as an agenda item at the Council meeting on March 8th 2022.

6. Review of Work programme for the Flooding Advisory Committee for year ending April 2022.

GC when through the items listed on the “Review” and the following updates and/or actions were agreed by those members present:-

1. Note to be changed to “Ongoing quarterly review against “Next Steps” with the HCC &F&WT Team report”.
2. Cllr. Wiggins to begin 2022 review of Parish Flood Plan, to include a section on actions for residents to take to benefit themselves and others (clear ditches, unblock catch pit gully covers etc.) **ACTION by SW**
3. See notes related to Item 7 on today’s agenda.
4. Clerk to add updated dates of Environment Agency & Highways England contacts. **ACTION by Clerk**
5. Follow up on any o/s issues from the “Walk the River” with the EA in September 2021. **ACTION by Clerk**
6. Monitor for any flooding related to this issue.
7. HCC works continuing.
8. Ongoing
9. a. Remains a watching brief
b. Work has started, Clerk to chase HCC Highways for an update. **ACTION by Clerk**
c. Remains a watching brief, no flooding from ditch reported.
d. GC to provide Clerk with specific details to raise with HCC F&WM Team. **ACTION by GC then Clerk**
e. See point 6 above
f. Continue to chase to remove debris & progress issue of water runoff from field beyond. **ACTION by Clerk**
g. Remains a watching brief, regular clerks by the Clerk confirms that the drain to field remains clear.

7. Review of Flooding Advisory Committee requested works programme for the Lengthsman.

The following tasks were identified to be passed to the Lengthsman:-

Clear vegetation from white railings along Furzley Lane and Southampton Road (near Cadnam Bridge).

Clear ditch alongside Shepherds Road (section parallel to Bartley Water at rear of Chinham Road houses).

Clear ditch at corner of Rockram Close/New Inn Road

ACTION – Clerk to instruct Lengthsman.

8. Discussion of other matters relating to the Aims and Responsibilities of the Flooding Advisory Committee.

None

9. Agree date for next meeting.

Friday May 20th 2022

Copythorne Parish Council - Flooding AC Meeting – March 22nd 2022

Item 4 – Further discussion of a response to the HCC F&WM Team Bartley Flood Investigation Report

BACKGROUND

On Friday August 6th 2021, Cllrs. Chillcott and Wiggins along with David Rigby (Parish Clerk) met with Tom Callaway of the HCC Flood and Water Management Team to assist him in preparing a Flood Investigation Report related specifically to Bartley Water.

That report was received on November 17th 2021 and a copy is attached as Appendix 1.

At the Flooding Advisory Committee meeting on February 17th 2022 a response to the report was discussed. Members of the Flooding Advisory Committee agreed unanimously that the following comments be sent to the HCC F&WM Team

1. *Page ii Executive Summary – First Bullet Point*
After “Shepherds Road”, add Chingham Road and Shepherds Close
2. *Page ii – Executive Summary – Second Bullet Point*
After “Fletchwood Tributary” add (part of Bartley Water).
3. *Page 1 – Background*
Remove “locally” at the start of line 7 and replace with “by the Environment Agency”.
4. *Page 6 – Continuation of “What actions have been taken to address flood risk” – Top paragraph*
Whilst the Parish Council minutes of February 26th 2013 refer to correspondence, they do not make the statement indicated in the report.
5. *Page 6 – Summary of observations and discussions – Point 8*
Since the August 6th 2021 visit it has been confirmed that the attenuation area was never built.
6. *Page 7 -Continuation of Summary of observations and discussions – Point 10*
In line 3, delete “may”.
7. *Page 7 - Continuation of Summary of observations and discussions – Point 15*
Change “towards the river Test” to “eventually into the River Test at Eling”.
8. *Page 9-10 – Conclusions and Next Steps*
Add an additional next step to continue pressing the Environment Agency to ensure that the initial investigation works referred to in the final paragraph of Section 2 of the report be progressed?

These comments were presented by Cllr. Chillcott to the Council on March 8th 2022 for approval.

In response to the presentation, Cllr. Goodwin provided additional information (some of which was taken from an NFDC report prepared in Oct 2005, a copy of the report is attached as Appendix 2) and proposed that the Council rejects the Flooding Advisory Committee’s (“FAC”) recommendations and requested that the FAC reconsider this matter. This proposal was approved. Cllr. Goodwin’s comments are attached as Appendix 3.

ACTION REQUIRED

Members of the Flooding Advisory Committee are asked to re- consider their response to the HCC F&WM Team Bartley Flood Investigation Report; decide on any amendments they wish to make to the comments to be sent to the HCC F&WM Team in response; and obtain Council’s approval to send them.

David Rigby

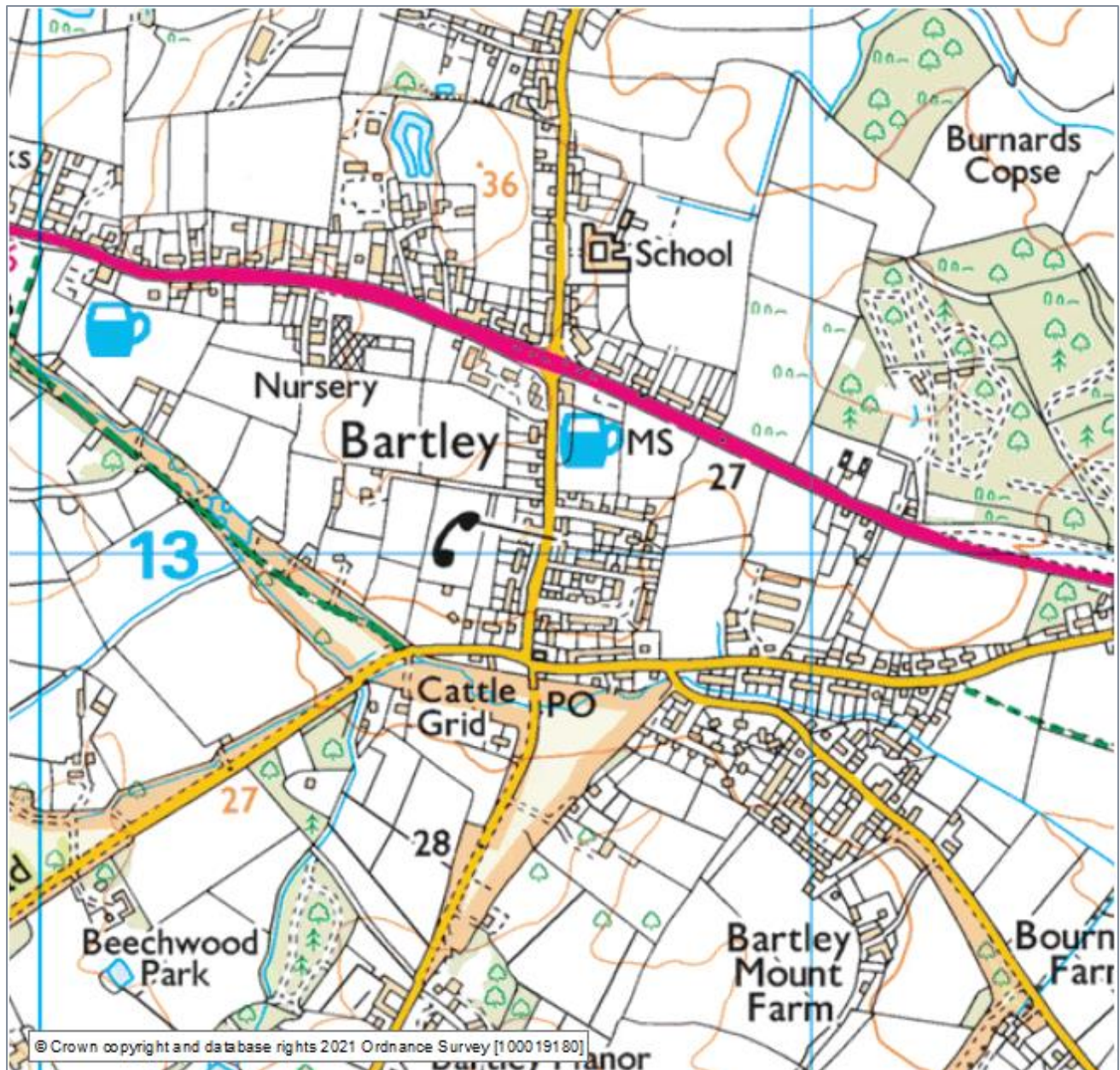
Clerk to Copythorne Parish Council

March 14th 2022

Copythorne South - Bartley Water

Addendum to Copythorne Village Flood Risk Investigation Report

October 2021



Notice

This Document and its contents have been prepared by and for use solely by Hampshire County Council. Hampshire County Council assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/ or its contents.

The purpose of this report is to provide information on the current risk of flooding and to suggest options that may be used to mitigate flood risk at this location based on the current evidence.

Hampshire County Council Flood & Water Management

<https://www.hants.gov.uk/landplanningandenvironment/environment/flooding>

Revision	Purpose Description	Prepared by	Checked by	Approved by
1	Draft Internal Review	PGC/JP	TC	VW
	Final	PGC/JP	TC	VW

Executive Summary

- This investigation of Bartley Water has been undertaken by Hampshire County Council as the Lead Local Flood Authority to understand previous flooding events, and relevant historic occurrences, review actions taken since 2013-14; and consider what, if any, further actions may be required to address residual flood risk. The focus has been on Shepherds Road and the surrounding area.
- Bartley in the New Forest has the Fletchwood Tributary, classed as 'Main River' flowing along Shepherds Road in the catchment of Bartley Water.

The purpose of this report is to:

- Understand the current information available and formalise this within a single report
- Clarify the flood risk of the area
- Understand what works have been undertaken within the area
- Provide an overview of the flooding mechanism and impacts of any flooding
- Identify potential affordable engineering and non-engineering options that could reduce, or better manage, flood risk in the area

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1. Background

Bartley is a village located in the parish of Copythorne, approximately 5.5km west of Totton, in the New Forest district (see Figure 1). The village is situated around and south of the A336 and its amenities include a village hall in the former tin church, a junior school, pub and a village shop and post office. The principal local watercourse is a tributary of the Bartley Water south of Southampton Road, which is categorised as a 'Main River'¹ east of Brockishill Road. It is understood this watercourse is known locally as the 'Fletchwood tributary'. The geology of the area comprises of variable deposits of sands and gravels.

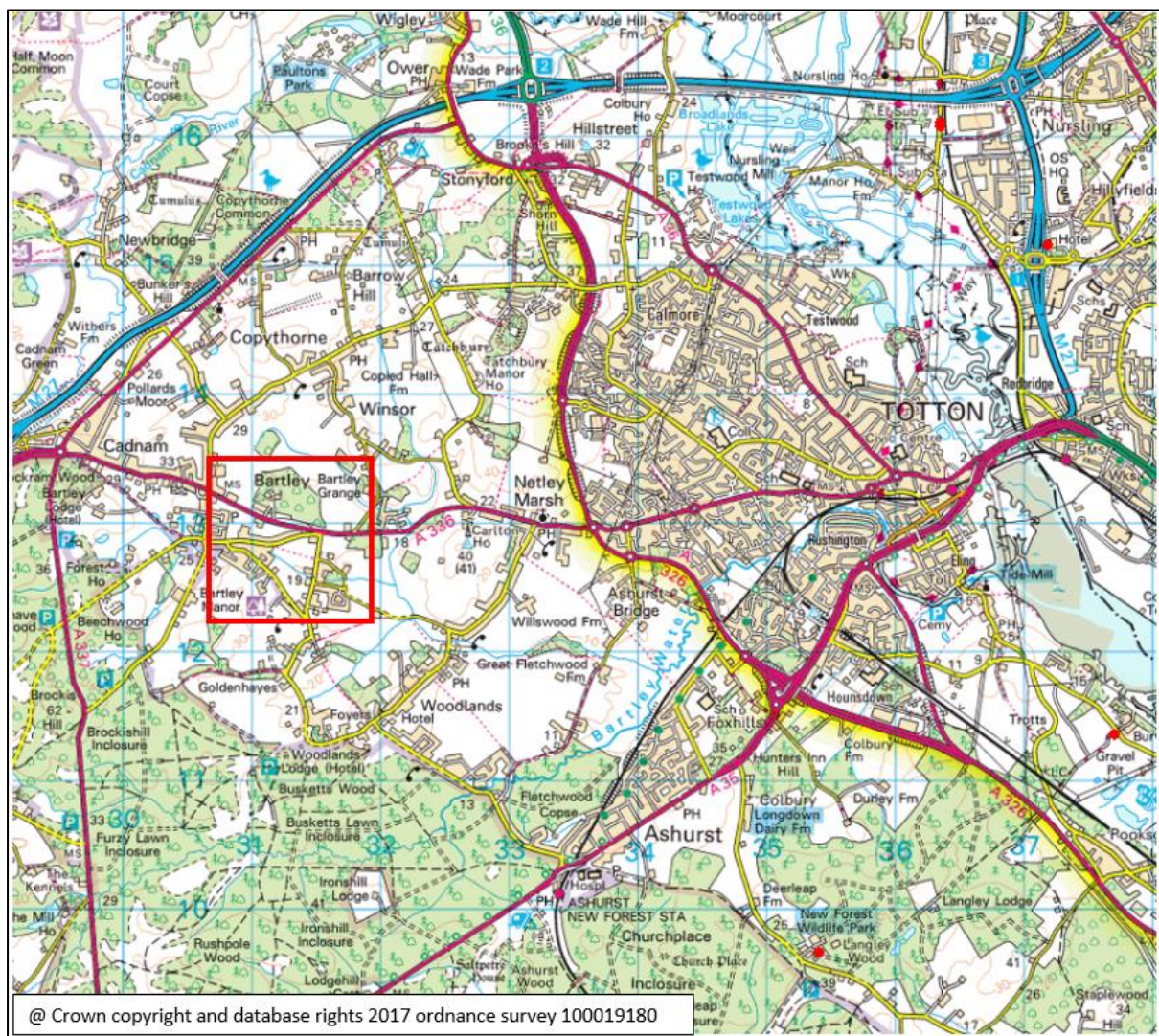


Figure 1: Bartley location plan

¹ A Main River is typically a larger stream or river, but can be a smaller watercourse of local significant. Main Rivers are nationally identified and managed by the Environment Agency

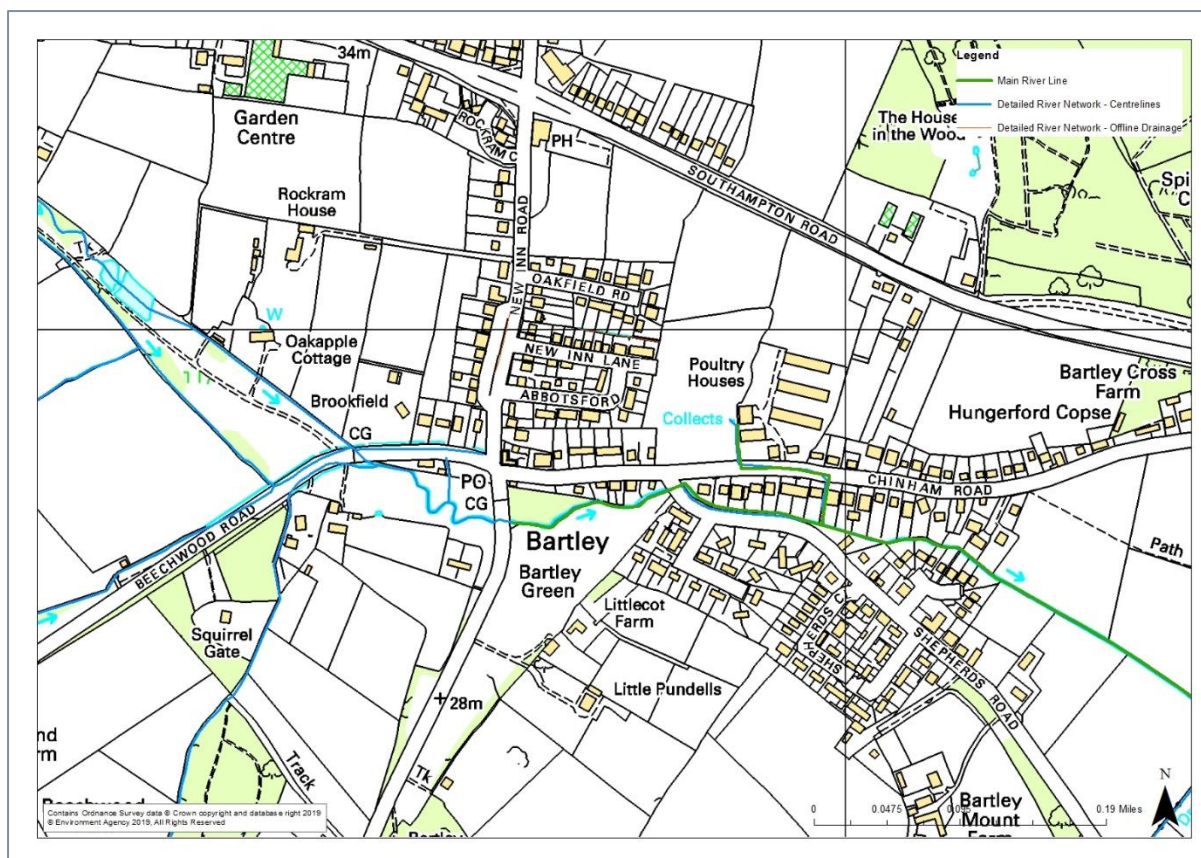


Figure 2: Map of Bartley village showing the ‘Fletchwood tributary’ (Main River) and local river network – the watercourse becomes Main River to the east of Brockishill Road, at Bartley Green.

1.1. What is the flood risk in Bartley village?

The Environment Agency (EA) produce mapping which illustrates the potential fluvial and surface water flood risk.

Bartley village, according to EA mapping, is at risk from fluvial flooding and surface water flooding. The risk areas broadly follow existing watercourses, including the Main River line. Figure 3 details the risk of fluvial flooding for Bartley using EA data. Flood Zone 3 refers in this instance to a 1% probability of flooding from rivers each year. Flood Zone 2 in this instance refers to a 0.1-1% probability of flooding from rivers each year.

Figure 4 details the surface water flood risk for Bartley village using EA data. High risk refers to an area with a probability of flooding greater than 1 in 30 in any given year, medium risk between 1 in 100 and 1 in 30, and low risk less than 1 in 100 probability of flooding in any given year.

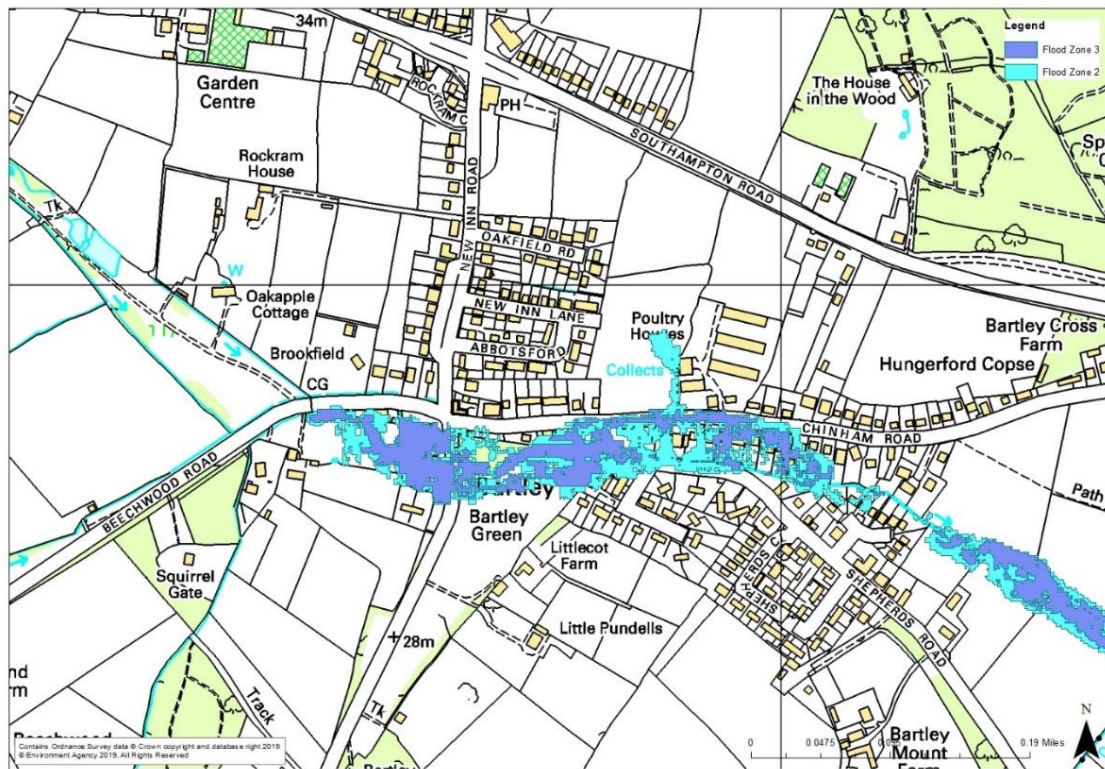


Figure 3: Fluvial flood map for Bartley village

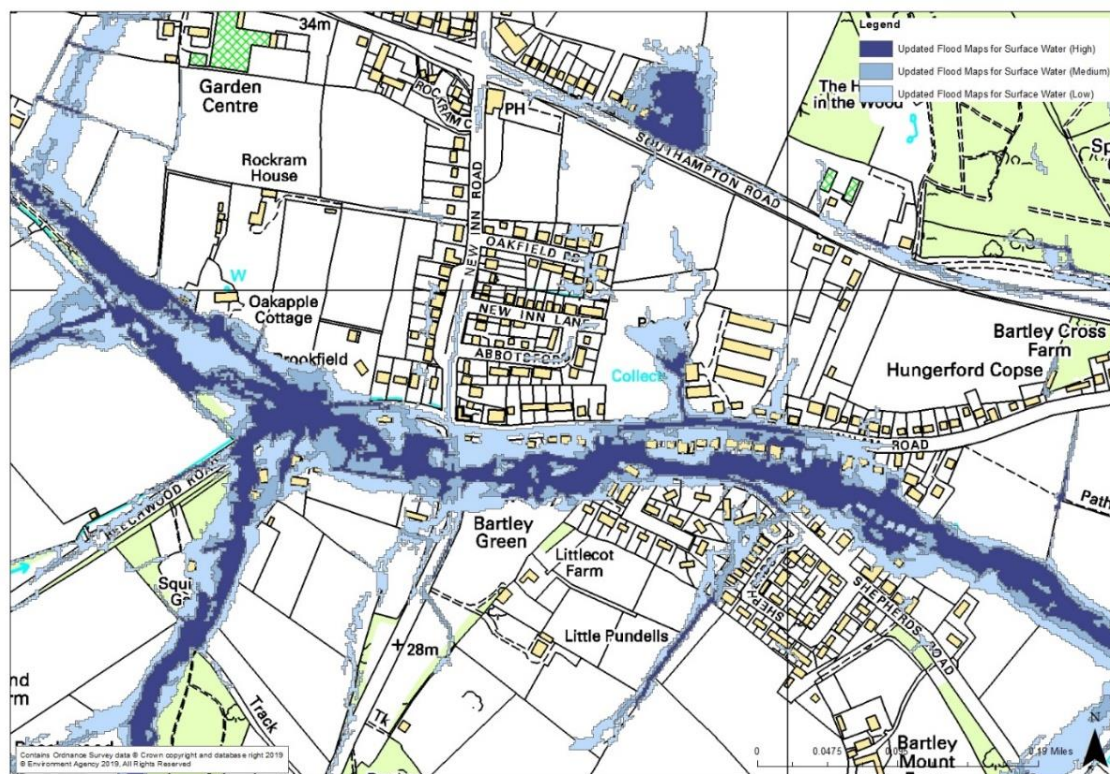


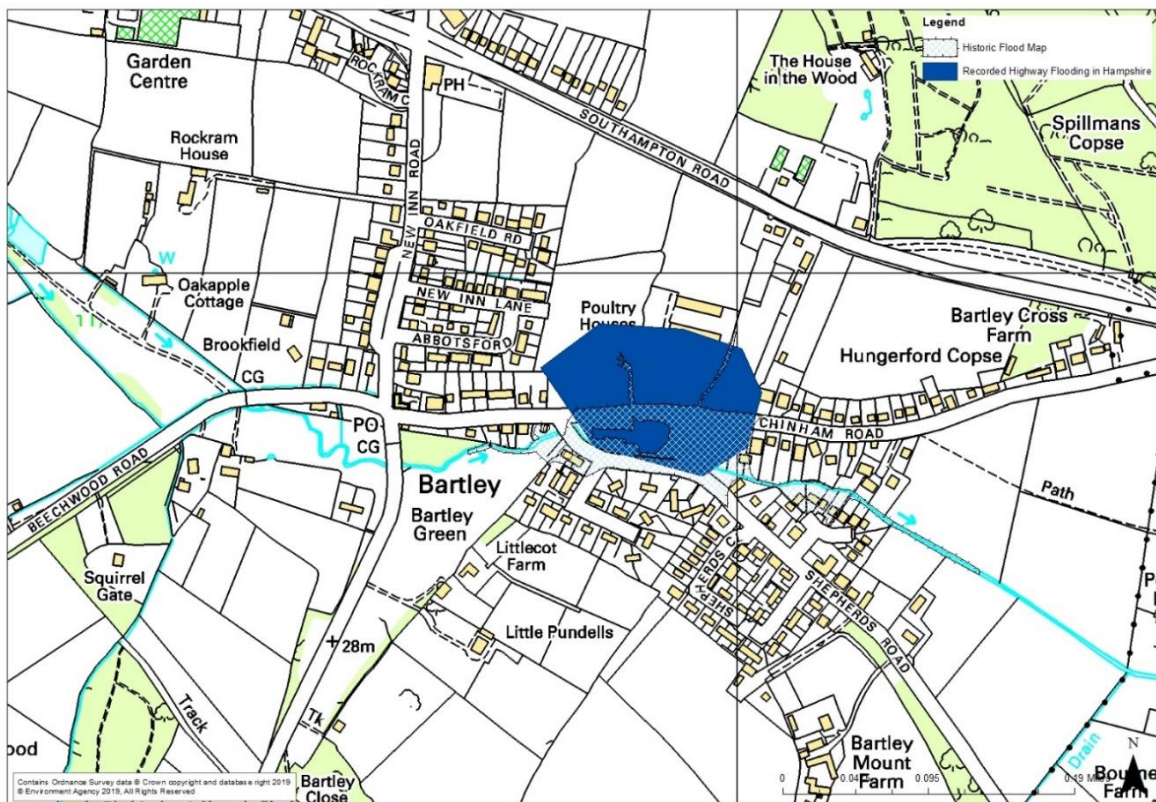
Figure 4: Surface water flood map for Bartley village

1.2. What flooding has taken place in Bartley village?

Bartley Water, which has a number of tributaries in the Cadnam and Copythorne area, flows directly through Bartley village centre, and becomes a Main River in Bartley. In 2000-01, 11 properties in Bartley suffered from flooding, and work has been undertaken since then to reduce the flood risk. New Forest District Council completed drainage works in 1999 and 2004 which are reported to have helped reduce the risk of flooding in this location.

One report has been produced by Halcrow Group Ltd. on behalf of the Environment Agency (EA) covering the 2000-2001 flood event in the area:

- Winter 2000-2001 Flooding in Hampshire – Bartley, Cadnam, Copythorne, Ower and Winsor (August 2002)



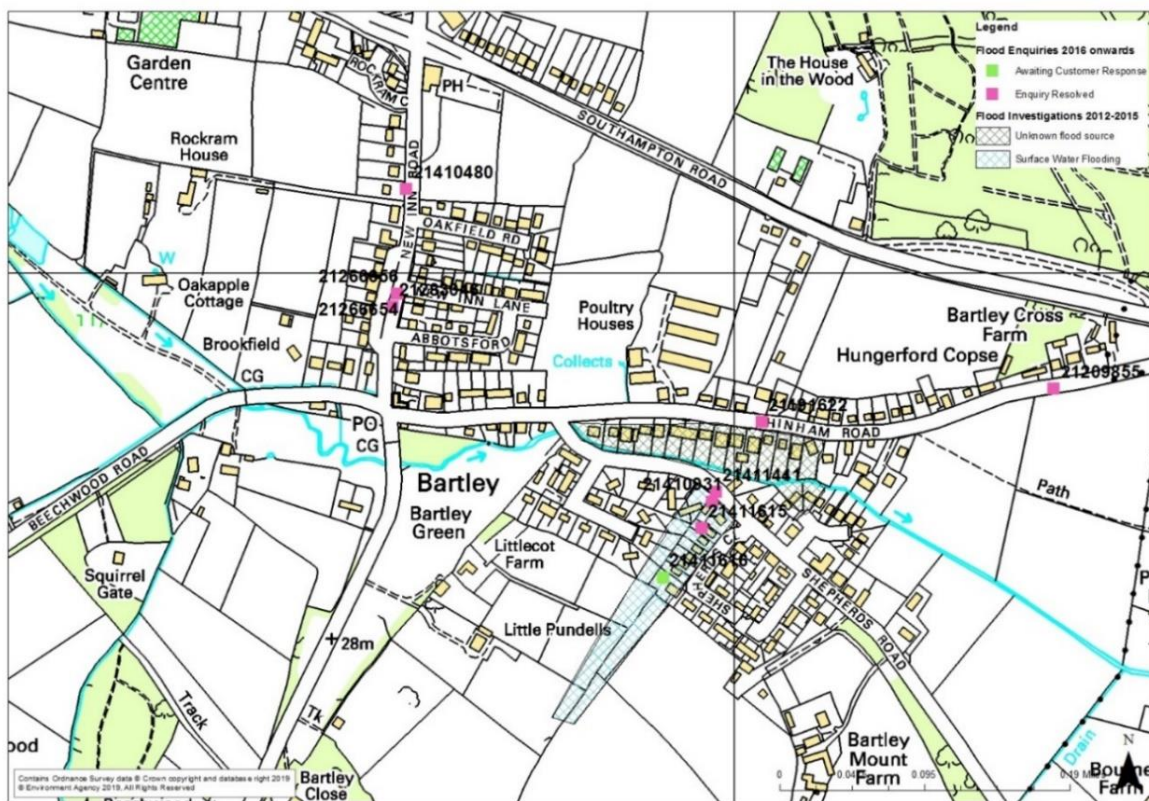


Figure 5: Flooding records held by Hampshire County Council for Bartley,

2. What actions have been taken to address flood risk?

There are records of a proposed 'Bartley Flood Relief Scheme' from 2006, which it is understood both the District Council and Environment Agency contributed to, however details on the scheme are limited. The project appraisal report from 2005 states that 11 properties have been affected by internal flooding. The source of the problem was recorded as being the increased constriction of the watercourse downstream of Shepherds Road, causing water to exceed the capacity of the channel upstream of Shepherds Road after heavy rainfall and flow via the road to Riverside Close. The preferred option for resolving the flooding issue was attenuation storage on open land upstream.

It appears a significant amount of research was undertaken by the District Council, but no formal scheme was agreed and since the change in responsibilities with regards to flooding, following the implementation of the Flood and Water Management Act, the District Council have no records of this work. The Environment Agency has confirmed Bartley is on their list of potential areas for future work, but there are no formal plans as yet.

The Parish Council highlighted the work completed on the Bartley Flood Alleviation Scheme and have previously been in discussion with the EA on the topic. The scheme

was considered by the Parish Council for the Flood Resilience Community Pathfinder Scheme, run by Defra, but minutes from the 26 February 2013 Parish Council meeting refer to correspondence between the Parish Council and New Forest District Council regarding the Flood Alleviation Scheme, confirming it was unlikely to meet the criteria for Defra funding in this instance.

The Environment Agency has confirmed that Bartley is on the current 2021-27 programme for potential funding from DEFRA, however initial investigative works are not proposed until 2024, and are dependent on a cost-benefit analysis ranked against other projects. Risk management authorities can bid for Grant in Aid funding if the project can meet the cost-benefit criteria.

3. Site assessment

The site visit was undertaken by representatives of Hampshire County Council and Copythorne Parish Council on the afternoon of Friday 6th August 2021, in dry weather. The site visit included a review of parts of Winsor Road, New Inn Road, Beechwood Road, Chinham Road, Shepherds Road and Riverside Close.

The following observations relate to the time of the visit only and this report acknowledges that changes to the state of the land and assets referenced can occur at any time. Observations were made from publicly accessible points only (such as the highway or a public right of way) and as such there may be some gaps or assumptions made.

Summary of observations and discussions

- 1 The ordinary watercourse at Stanley Cottage, Winsor Road, is assumed to flow toward the timber yard on Ringwood Road.
- 2 Surface water flows down towards Winsor Road from The Brickyard.
- 3 There are issues with highway gullies not draining effectively on Winsor Road, particularly the gully outside The Wilderness.
- 4 Water is known to seep from the verge by Chipmans House, Winsor Road.
- 5 The bus stop on New Inn Road opposite The Haywain PH is known to flood. There is a ditch (ordinary watercourse) between the footpath and Rockram Close properties at this location.
- 6 There are ditches and culverts (ordinary watercourses) on both sides of New Inn Road, the condition of the watercourses vary significantly along the length of this road.
- 7 There is a potential flooding issue at the southern end of New Inn Road adjacent to the post office, where the piped system crosses the road at a restrictive angle.
- 8 An attenuation area at the junction of Beechwood Road and Green Lane may need reconstructing as the bunding level has sunk, however there is no flooding occurring at this location as water finds its way into the ditch network.

- 9 Highway work has been ongoing near to Yew Tree Garage, Southampton Road. Water from this location may drain through the ditch system towards Bartley Water.
- 10 Bartley Water is the main river, classified as such from where it passes under Brockshill Road. The watercourse flows through the rear gardens of the Chinham Road properties east of Shepherds Road, some of the property owners may have received funding to assist with reducing the risk of flooding.
- 11 A historic flooding issue at the culvert beneath Shepherds Road was resolved by replacing the single small culvert with three larger diameter culverts.
- 12 There is a land drainage issue at White Oaks, Shepherds Lane and possibly the properties behind in Shepherds Close. Flooding was last recorded when the culvert blocked and flooded through the garage at White Oaks in February 2019.
- 13 Fluvial flooding has historically affected the low-lying gardens in Riverside Close, however flood water can also arrive at this location via the highway when the main river channel capacity is exceeded upstream of Shepherds Road.
- 14 Ditches (ordinary watercourse) and highway drainage assets along Shepherds Road are assumed to drain to the main river. The condition of the ordinary watercourses and highway drainage assets varies.
- 15 Downstream of this location, Bartley Water flows through Netley Marsh parish and towards the River Test.

4. Assessment of Flood Risk

A review of the flood mechanisms and extents, and analysis of potential options to reduce the impact of future flooding has been undertaken.

4.1. Analysis of information

To reduce the risk of flooding, the existing drainage systems in Bartley must be fully operational and well-maintained.

- Main rivers are watercourses that are assessed to have a significant flood risk due to their size or local constraints, and may include ditches and culverts. The riparian owner (a landowner with main river running through or adjacent to their land) has a responsibility to maintain the watercourse so that it does not impede the flow of water. Any works in the immediate vicinity of a main river require a flood risk activity permit from the Environment Agency. Enforcement action can be taken by the Environment Agency if main rivers are not maintained or are affected by works undertaken without the necessary permit. The Environment Agency may also have a schedule of maintenance activities.
- Ordinary watercourses are watercourses that have not been designated as main river by the Environment Agency, and may include ditches and culverts. The riparian owner (a landowner with an ordinary watercourse running through or adjacent to their land) has a responsibility to maintain the watercourse so

that it does not impede the flow of water. Any works that would affect the flow of water (such as culverting for driveway access) require consent from the lead local flood authority, Hampshire County Council. Enforcement action can be taken by Hampshire County Council if ordinary watercourses are not maintained or are affected by works undertaken without the necessary consent. Problems with ordinary watercourses can be reported to Hampshire County Council online.

- Highway drainage systems are installed and maintained by the highway authority, Hampshire County Council. These systems often depend on ordinary watercourses and main rivers as discharge points. A lack of maintenance in watercourses can obstruct the outlets from highway drainage systems, resulting in blockages. Problems with highway drainage assets can be reported to Hampshire County Council online.
- There are no public surface water sewers maintainable by Southern Water at this location.

Other pressures on existing drainage systems may include high groundwater, which can enter piped drainage systems (including foul sewers) through damaged infrastructure, and private surface water drainage systems associated with the historic and current development of private property.

Figures 3 & 4 highlight the flood risk from the watercourses in the area. The surface water flood map tends to highlight more of the ordinary watercourses due to the reliance on topography for modelling, and both maps show the significance of the flood risk from Bartley Water. Location specific advice for reducing flood risk is provided in the following section.

4.2. Responsibilities and Potential Actions

There are existing responsibilities to ensure that land drainage and highway drainage systems are suitably maintained.

All riparian landowners have a responsibility to maintain their watercourse. It is not unusual for riparian landowners to be unaware of their responsibilities. A Parish Council-led riparian awareness campaign could be considered, with Hampshire County Council and Environment Agency support. Newsletter and website articles, targeted letter drops, and regular inspections may be appropriate. Awareness and use of the Hampshire County Council flood reporting system should also be promoted.

Key areas for a campaign would include both sides of the southern end of Winsor Road, both sides of New Inn Road, properties close to Bartley Water on Chinham Road, Shepherds Road and Riverside Close, properties on the western side of

Shepherds Close. Surveys of the watercourses and culverts may be appropriate in these areas with recurring flooding problems.

Hampshire County Council as the highway authority maintains highway drainage assets. Maintenance is most effective when the receiving watercourses are suitably maintained. Issues with highway drainage assets can be reported online. Not all watercourses and highway drainage assets are recorded. Site walkovers and surveys may help to identify features not already recorded, so that maintenance may be done by the responsible party.

The Environment Agency may wish to proceed with investigating flood risk in Bartley Water. Flood alleviation works may proceed as a result of any investigation, depending on whether the benefits of a proposed scheme will outweigh the costs.

5. Conclusions and Next Steps

It is recommended that a riparian landowner awareness campaign be undertaken, prioritising the areas known to have a higher flood risk. This can be undertaken any time of the year, however a regular reminder for maintenance in late summer every year would be beneficial as the bird-nesting season ends and wetter weather is expected. Groundwater levels may also rise sufficiently to have an impact on the drainage systems.

Problems with ditch or culvert maintenance on ordinary watercourses may be reported to Hampshire County Council here: [Report a flooding or drainage problem | Hampshire County Council \(hants.gov.uk\)](https://hants.gov.uk/report-a-flooding-or-drainage-problem). There is also an option to report highway drainage asset problems. Works to an ordinary watercourse will usually require ordinary watercourse consent, details on the application process can be found here: [Making changes to a watercourse | Hampshire County Council \(hants.gov.uk\)](https://hants.gov.uk/making-changes-to-a-watercourse).

Problems with main river maintenance may be reported to the Environment Agency. Details on applying for a permit when working on or near a main river can be found here: [Flood risk activities: environmental permits - GOV.UK \(www.gov.uk\)](https://www.gov.uk/flood-risk-activities-environmental-permits).

Should any surveys be undertaken on drainage systems in this area, Hampshire County Council may wish to record the information on the highway drainage asset database or the flood risk asset register. Please contact Hampshire Highways or the Flood and Water Management team with any information.

Costs for capital flood mitigation schemes tend to be relatively high and as such, external funding is usually required to implement schemes.

The most common source of funding is via the Flood Defence Grant in Aid (FDGiA) funding source which is provided by Central Government and managed by the Environment Agency. To access this funding, an analysis of the costs and benefits must be undertaken to demonstrate that there is value in undertaking works based on

national criteria. There are different criteria used to assess the value (or benefits) of a scheme. The cost benefit ratio is then assessed against all other schemes put forward nationally with funding going to those giving the greatest benefits vs cost. The cost benefit score is difficult to determine at this stage as it cannot be confirmed to what level properties, businesses and infrastructure can be protected.

The better the standard of protection, the more benefit can be claimed. The highest level of benefit is directly related to internal residential property flooding (this does not include garages or outbuildings) and in Bartley, Hampshire County Council have records of eleven properties suffering from internal flooding in 2000-01.

Previous information, site visit details and local accounts have been collated within this report in order to provide an assessment of the current flooding mechanisms operating in Bartley. These have been used to identify if there are any potential options to mitigate flood risk. Whilst engineered options have been identified, the estimated level of costs and potential benefits are likely to be such that this would preclude the ability to secure funding from the national capital funding mechanisms.

This does not remove the potential to use other measures to reduce flood risk; improve the current drainage systems or investigate other funding sources to develop a scheme in this location.

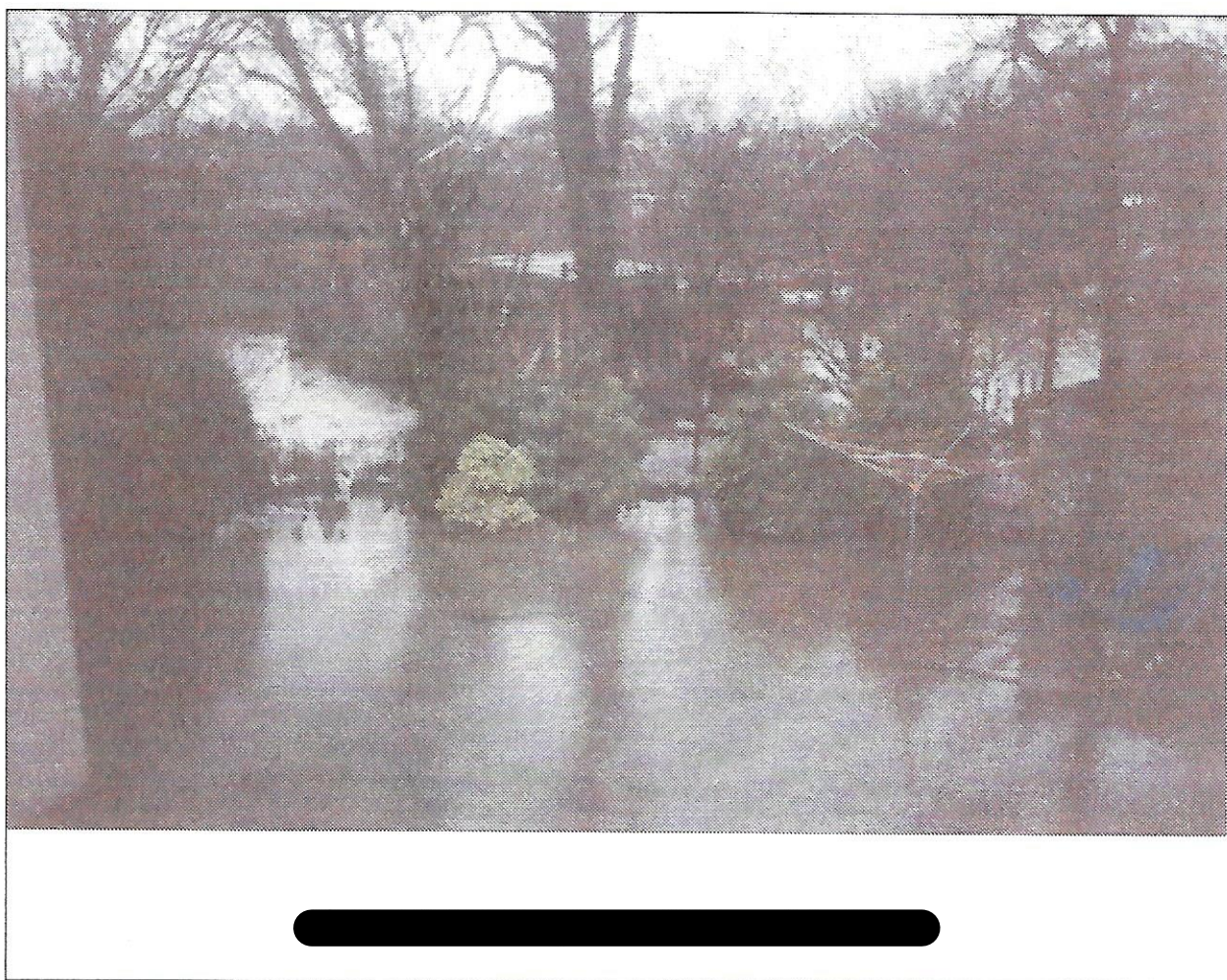
Project Appraisal Report

Authority Scheme Reference 104209

DEFRA CPW/LDW
Number

Promoting
Authority NEW FOREST DISTRICT COUNCIL

Project Name BARTLEY FLOOD RELIEF SCHEME



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4.1 Operating Authority

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APPROVAL HISTORY SHEET

To be completed by Promoting Authority

Project Title : Bartley Flood Relief Scheme

Authority Project Code : 104209

Authority Project Manager : [REDACTED]

Date of PAR : August 2005

Consultant Project Manager :

Consultant :

To be completed by DEFRA

Approved in Principle (where applicable) :

Date :

Application Form Submitted to DEFRA :

Date :

PAR Amendment No. (if different):

Approval :

Date :

Comments:

1. EXECUTIVE SUMMARY/RECOMMENDATIONS

In recent years 28 properties within the Bartley Village watercourse catchment have been flooded internally and a further 40 have been affected by external/garden flooding during rainfall events with return periods of less than five years. More extreme events will cause more flooding.

The area affected by most flooding falls within land use band B. It is reasonable to try to provide protection for a storm with a return period of 75 years.

Options for alleviating the problem are as follows:-

- The 'Do Nothing' option has been considered but is unacceptable.
- The 'Ongoing Maintenance' option would not make a material difference to the existing inadequacies of the present drainage system and has therefore been discounted.
- It is therefore considered that to provide the protection necessary to prevent flooding of property that a scheme be implemented in the form of either flood storage and/or attenuation.

The recommended option is the provision of flood storage areas on the branch network upstream of the Village, with partial offline attenuation of the flows arriving at the sensitive areas downstream.

The Net Present Value of the benefits of preventing flooding is estimated at £805,000. The estimated Net Present Cost of the work is £113,000 including £14,000 fees. This gives a benefit cost ratio of 5.7.

The Priority score for the scheme has been assessed at 20 (Economic 13, People 7, Environment 0).

These figures are all based on estimates and are subject to confirmation.

2. BUSINESS CASE

2.1 Introduction and Background

Bartley lies on the north eastern fringe of the New Forest some 7km west of Southampton. It is a small semi-rural community, with mixed woodland and grazing land. The development constitutes mainly housing, with limited light industry to the north of the catchment.

Several watercourses rise west of the A337 in Forestry Commission land, and drain east as open ditches through a mixture of forestry land and farmland before converging as one watercourse south of Beechwood Road. The watercourse then continues flowing east passing through Brockishill Road culvert and the Shepherds Road culvert before continuing as an open watercourse through the residential area of Bartley where the watercourse flows within gardens along the boundary of properties south of Chinham Road. The watercourse then crosses more farmland, passing under Bourne Road via a culvert before becoming main river at the Paradise Lane ford crossing.

Some of the sub-catchments drain significant areas of Sites of Special Scientific Interest (SSSI)s.

The main watercourse draining the catchment is generally free of obstructions and has adequate freeboard in normal flow conditions. A build up of debris is likely to occur where the watercourse enters culverts but generally the watercourse is well maintained.

The nearest rainfall station is at Woodlands, 2 km to the south east, and the recorded average annual rainfall is 927mm for this catchment.

The Geological Survey of Great Britain Drift map shows the geology of the area to be Barton Clay overlaying Bracklesham Beds to a depth in excess of 100m.

In addition to the main watercourse serving this catchment there are a number of contributing highway ditches and drains.

The nature of the surrounding land, dictates that there will be limited future housing or commercial development in Bartley. It is only in the recent past that attenuation measures have been introduced to new sites.

The appraisal has been carried out in accordance with the PAG Series of documents.

The recommended option has an estimated net present cost of £113,000 to prevent a net present value of £805,000 of benefits, giving a benefit-cost ratio of 5.7.

2.2 Problem

Increased constriction of the main watercourse downstream of the triple Shepherds Road culverts has contributed significantly to the mechanism of flooding. The watercourse at this point flows through the rear gardens of a number of properties in Chinham Road. Over the passage of time, possibly during prolonged dry periods, a certain encroachment of the watercourse banks has taken place. Although in some cases this may have been an attempt by landowners to stabilise the banks and formalise the watercourse as a feature of their gardens, it has also inadvertently had the effect of constricting the flow. The watercourse is also in part, bordered by a mature line of trees, which has also provided a restriction.

Following periods of very heavy rainfall, when the Chinham Road section of the watercourse exceeds its capacity, backing up takes place upstream of the Shepherds Road culverts. Flood water then overtops the banks, flows down Shepherds Road and into Riverside Close, in its attempt to re-enter the watercourse. Flooding in the back gardens of the Chinham Road properties is exacerbated by a contributing culvert from the north.

During the period from 1988 to 2003 28 properties within the Bartley Village watercourse catchment were reported as having internal flooding and a further 40 have been affected by external flooding, the vast majority of which can be directly attributable to short term overloading of the watercourse.

2.3 Options Selection

If no works are carried out a significant number of properties will continue to flood internally on an increasingly frequent basis, coupled with an even greater number of external and highway flooding incidents.

The watercourse is generally in good condition, and suffers little from the effects of silting. An ongoing maintenance programme would make minimal impact on the effects of flooding and the number of resulting incidents. It has therefore been discounted.

Generally the works options for flood alleviation can be classified as :-

- Attenuation Storage
- Increased Capacity
- Offline Attenuation
- Diversion

2.3.1 Attenuation Storage

There are three possible areas where flows may be attenuated upstream of the critical section of watercourse at the rear of gardens in Chinham Road and Riverside Close. These are, in order of importance:-

- A wide swathe of open pasture land (Forestry Commission land) and an SSSI. to the north of Beechwood Road.

- Pasture to the west of Brockishill Road.
- Pasture to the north of Chinham Road.

Although application has been made to the Forestry Commission for their permission to use land off Beechwood Road for attenuation, their agreement is by no means certain considering the status of the land.

2.3.2 Increased Capacity

There is a restriction to increasing the capacity of the main watercourse in the form of a line of mature hardwoods, but an alternative solution to attenuation is to increase the capacity by constructing a culvert in Shepherds Road, discharging into the main watercourse downstream of Riverside Close.

Consideration has been given to the removal of some of the mature trees along the bank of the watercourse in gardens to the rear of Chinham Road and Riverside Close, but this would be environmentally unacceptable.

2.3.3 Offline Attenuation

A suitable location to attenuate excess flows would be in a newly constructed culvert in Shepherds Road, commencing at the triple road culverts, where flows become constricted through Chinham Road back gardens, discharging with controls back into the watercourse downstream. During events exceeding the design storm, excess flows would overflow into the new culvert where a large volume could be stored, allowing the existing watercourse to perform to capacity, but without flooding.

The installation of such an attenuation system at this location would reflect the route of the present flooding into Shepherds Road.

The required capacity of such a system is dependant on whether approval is given for Attenuation Storage in Beechwood Road by the Forestry Commission.

2.3.4 Diversion

The adjacent catchments already suffer flooding and over capacity problems so there is little scope to divert flows to a catchment within a reasonable distance.

2.3.5 Summary

The most effective option to alleviate the flooding is to provide a series of attenuation storage areas upstream of the flooded area. Permission to construct one of these areas depends on the agreement of the Forestry Commission. If this permission is not forthcoming then a suitable alternative option is to provide offline attenuation in the form of a storm overflow culvert in Shepherds Road. As previously stated the 'Do Nothing' and 'Maintenance Only' options will not address the problem, and serious flooding in Bartley will persist.

2.4 Environmental Impact Assessment

2.4.1 Introduction

Background

The preliminary environmental appraisal considered the preferred engineering option put forward to relieve flooding in the vicinity of Chinham Road, Riverside Close and Shepherds Road, Bartley. The Environmental Appraisal has been prepared to satisfy DEFRA guidelines for informal environmental assessment and should not be interpreted as a formal environmental statement.

The Environmental Appraisal aimed to:

- Identify and examine key environmental interests and issues in the Beechwood, Brockishill and Chinham Road areas.
- Highlight key impacts associated with the preferred option.
- Suggest any potential mitigation enhancement measures which could be implemented to alleviate the degree of impact.

The contents of the appraisal are based upon existing information available.

The Problem

At frequent intervals, following heavy rain, the capacity of the watercourse is exceeded causing flooding of properties in the vicinity of Chinham Road and Riverside Close.

The Preferred Solution

The preferred solution is to provide a series of Attenuation Storage areas, enabling controlled short term storage. Owing to the status of the land permission for this option may not be granted. A suitable alternative option is to provide offline attenuation in the form of a storm overflow culvert in Shepherds Road.

2.4.2 Environmental Interests and Issues

A number of environmental interests have been identified in this small catchment:

- Water Quality
- Topography
- Ecology
- Habitat Types
- Protected Species
- Housing/Industry
- Recreation and leisure
- Agriculture
- Planning

These were considered individually. The proposed works, involving the short term flooding of grazing land, or possibly the short term storage of excess flows in a newly constructed attenuation culvert, will have no adverse effects on the catchment.

2.4.3 Approvals

An outline of the proposed works has been sent to the Environment Agency, English Nature and the Forestry Commission for their comments and approval in principle. A formal response is awaited from these agencies.

The proposals are to be advertised in the local paper, The Southern Echo, on Wednesday 31 August and the Lymington Times on Saturday 10 September 2005.

Planning consent is not required for the proposed works.

2.5 Costs of Options

All the proposed options can be constructed within six months. The preferred option can be constructed within three months. The work is programmed for commencement in January 2006 therefore all expenditure can be expected within the 2005/06 financial year, except for retentions. For appraisal purposes all costs have been adjusted upwards by an 'Optimism Bias' factor of 16%. The reduction from 30% is explained in sheet Optimism Bias Data attached to the FCDPAG3A spreadsheets.

2.5.1 Option 1 – Do Nothing

The 'Do Nothing' option has no costs.

2.5.2 Option 2 – Ongoing Maintenance

The 'Ongoing Maintenance' option will have annual inspection/minor repair costs of £300 with occasional higher costs for more major works. The net present value of this option is £9674. Capital costs are nil.

2.5.3 Option 3 – Attenuation Storage

The preferred option of creating 3 landscaped attenuation storage areas has capital costs:

Civil Engineering Works	£90,000	
Contingencies	£9,000	
Fees	<u>£14,000</u>	
		£113,000

Maintenance of the watercourse will be required as in Option 2, but to a slightly lower standard. The net present value of this maintenance is £7,865.

2.5.4 Option 4 – Increased Capacity

Increasing the capacity of the system by constructing a new culvert in Shepherds Road has capital costs:

Civil Engineering Works	£190,000	
Contingencies	£14,000	
Fees	<u>£21,000</u>	
		£225,000

This option assumes that permission is not granted for the Attenuation Storage area on Forestry Commission in Beechwood Road, but the other two areas in Brockishill and Chinham Roads are included. The net present value of this maintenance is £15,422.

2.5.5 Option 5 – Offline Attenuation

Diverting excess flows to an attenuation system in Shepherds Road has capital costs:

Civil Engineering Works	£220,000	
Contingencies	£17,000	
Fees	<u>£26,000</u>	
		£263,000

This option assumes that permission is not granted for the Attenuation Storage area on Forestry Commission in Beechwood Road, but the other two areas in Brockishill and Chinham Roads are included. The net present value of this maintenance is £49,914.

2.5.6 Option 6 – Diversion Via Pumping Station

Diverting the excess flows to the Bartley Water via a pumping station and rising main has capital costs:

Civil Engineering Works	£240,000	
Contingencies	£19,000	
Fees	<u>£29,000</u>	
		£288,000

This option assumes that permission is not granted for the Attenuation Storage area on Forestry Commission in Beechwood Road, but the other two areas in Brockishill and Chinham Roads are included.

Maintenance of the pumping station will be required as well the existing watercourse. The net present value of this maintenance is £15,422.

2.6 Benefits Of Options

The benefits of all options will accrue upon completion. Any option would be undertaken as a single phase.

2.6.1 Option 1

The damages attributable to the 'Do Nothing' option would accrue progressively over time. The upper reaches of the contributing watercourses have the potential to block, as in several locations they drain wooded areas and are vulnerable to the accumulation of fallen debris. Watercourses in open forest areas can be affected by 'cattle traffic', lose their definition, and make flooded areas more difficult to predict. The present value of the damage is estimated at about £805,000.

2.6.2 Option 2

The damages attributable to the 'Maintenance Only' option would continue as at present. The net present value of the damage is estimated at about £722,000.

2.6.3 Option 3

In extreme events (in excess of 100 year return) some damage will still occur. The net present value of the damage is estimated at about £7,100.

2.6.4 Option 4

The option of Increased Capacity by the construction of a new culvert in Shepherds Road can be sized to prevent any future damage.

2.6.5 Option 5 and 6

These options (Offline Attenuation and Diversion via Pumping Station) can be sized to prevent any future damage.

2.7 Choice of Preferred Option

The preferred option (Attenuation Storage) is the most economical proposal that achieves an acceptable level of protection.

There is very little scope for future development in this catchment, and therefore it is unlikely that flow rates will increase significantly. The small increase in development that is possible would be the subject of a 'sustainable urban drainage' system.

3. PROJECT PLAN

This stand alone project is situated in a small semi-rural catchment that drains to Southampton Water via the Bartley Water and River Test.

The preferred option will provide Attenuation Storage at 3 sites within the catchment by landscaping a series of short term storage areas with throttled outlets, which can be constructed over a twelve week period. The works are programmed to commence in January 2006 and will provide protection against events with a 75 year return period.

An ISIS model of the catchment has been built, but is proving difficult to verify. Engineering judgement and experience has been used to provide the data for this report. When the model has been verified, the data will be confirmed.

Once implemented the works will provide flood protection to a community that has suffered regular severe internal flooding, with minimal environmental impact, both during and post construction. Future management will be by landowners and the Forestry Commission.

4. RECOMMENDATIONS/ SIGN OFF

4.1 Operating Authority

Scheme-recommended for submission to DEFRA for approval# at a cost of £113,000

Project Engineer

Name		Signature	
		Date	

Scheme - accepted for submission to DEFRA for approval#

Project Manager

Name		Signature	
		Date	

Scheme - accepted for submission to DEFRA for approval#

Project Executive

Name		Signature	
		Date	

* select as appropriate but at least one option must be selected from the options.

select as appropriate.

4.2 Department for the Environment Food and Rural Affairs.

Scheme recommended for:-
further study/rejection/agreement/approval at a cost of

£

Senior Engineer

Name		Signature	
		Date	

Scheme accepted/recommended for:-
further study/rejection/agreement/approval

Regional Engineer

Name		Signature	
		Date	

*Study/Strategy/AIP to first 5 years work/Scheme accepted/recommended for:-
further study/rejection/agreement/approval.

Chief Engineer

Name		Signature	
		Date	

* Select as appropriate.

Item 4 – APPENDIX 3

Cllr. John Goodwin's comments in response to Agenda Item 11 at the Copythorne Parish Council meeting on March 8th 2022:-

These comments are presented by me as a resident of Chinham Road for approximately 40 years and experiencing my first flooding incident which involved an insurance claim in 1988.

This report is clearly the most up to date report on flooding in Bartley and gains absolute credibility as it the first that has been prepared by HCC as the Lead Local Flood Authority.

It will therefore be used to test any future proposals that involve an appreciation of flooding in this locality and possibly its wider catchment area which extends to the west of the A337 (Lyndhurst Road) in Minstead.

Much of this background information is comprehensively detailed in the Bartley Flood Relief Scheme issued in 2005 and being several years in its production stage.

This latest Bartley report, produced in a relatively short time, makes the following comment regarding this report in Section 2: on page 5: What action has been taken to address risk?
There are records of a proposed 'Bartley Flood Relief Scheme' from 2006, which it is understood both the District Council and Environment Agency contributed to, however details on the scheme are limited. The project appraisal report from 2005 states that 11 properties have been affected by internal flooding. The source of the problem was recorded as being the increased constriction of the watercourse downstream of Shepherds Road, causing water to exceed the capacity of the channel upstream of Shepherds Road after heavy rainfall and flow via the road to Riverside Close. The preferred option for resolving the flooding issue was attenuation storage on open land upstream.

It appears a significant amount of research was undertaken by the District Council, but no formal scheme was agreed and since the change in responsibilities with regards to flooding, following the implementation of the Flood and Water Management Act, the District Council have no records of this work. The Environment Agency has confirmed Bartley is on their list of potential areas for future work, but there are no formal plans as yet.

Whilst this scheme failed at the time to attract funding to proceed, the technical details within the report are still as relevant now as in 2005-6. These include:

1. At the time of the report the Bartley water was not designated as a Main River until the Paradise Lane Ford Crossing.

Comment: It was because of this report that the main river designation was extended upstream to the culvert in Bartley Water opposite the Bartley Post Office.

2. At the time of the report the triple Shepherds Road culverts were already in existence.

Comment: The latest report at point 11, following the site visit, seems to indicate "the historic flooding issue at the culverts beneath Shepherds Road was resolved by replacing the single small culvert with three larger diameter culverts". This is frankly nonsense as this work was almost certainly carried out in the 1960-70s when the residential development of Chinham Road and Riverside Close was undertaken. It certainly wasn't carried out since I have lived in Chinham Road.

3. Flooding in the back gardens of the Chinham Road properties is exacerbated by a contributing culvert from the north.

Comment: As noted previously the technical studies of this report resulted in the watercourse alongside the now redundant chicken farm also being designated as main river. It may have been missed by my fellow councillors but this is where the fields up to Southampton Road currently contribute surface water, including the field to the rear of the Haywain!

4. During the period from 1988 to 2003, 28 properties in the Bartley Village watercourse catchment were reported as having internal flooding and a further 40 have been affected by external flooding, the vast majority of which can be directly attributable to short term overloading of the watercourse.

Comment: It's a pity that no one on the Flooding Advisory Committee picked up the major misrepresentation on numbers in this latest report.....(page 5) " ... 11 properties have been affected by internal flooding...."

5. If no works are carried out, a significant number of properties will continue to flood internally on an increasingly frequent basis, coupled with an even greater number of external and highway flooding incidents.

Comment: History has confirmed this prediction correct. In the 2013-14 flooding incident, 12 properties were awarded government flood resilience grants. To get a grant payment you had to have been flooded internally!

6. The watercourse is generally in good condition, and suffers little from the effect of silting. An ongoing maintenance programme would make minimal impact on the effects of flooding and the number of resulting incidents.

Comment: The main conclusion of the new report is to blame all the problems on the adjoining riparian owners!

Additionally this new report makes no mention whatsoever on properties affected or the work carried out following the 2013-14 flooding.

In conclusion, can I draw your attention to the obvious error not yet mentioned in item 12 on page 7.