The Parish of Dunkerton and Tunley: Flooding Briefing Note

Issue 2 (Updated July 2017)

DUNKERTON AND TUNLEY PARISH - FLOODING BRIEFING NOTE

INTRODUCTION

This report was produced by Dunkerton and Tunley Parish Council in November 2016. It was written and submitted for consideration by B&NES Council's Drainage and Flooding Team, to inform a joint discussion about measures that might alleviate some of the flooding problems that occur in the Parish during periods of prolonged, heavy rainfall.

As this report was written for a specific audience for a specific purpose, it was not and is not intended to be a general information document identifying flood risk to local property. Anyone seeking authoritative information about that should always first consult the Government website:

https://www.gov.uk/check-flood-risk

https://www.gov.uk/prepare-for-a-flood/find-out-if-youre-at-risk

The November 16 version of the report was reviewed and updated with the addition of the final section in May 2017 after on-site discussions with the B&NES team and the experiences of the 2016/17 winter.

DUNKERTON AND TUNLEY PARISH - FLOODING BRIEFING NOTE

SCOPE

This briefing note covers:

- The tendency for flooding to occur in the Parish
- Where, and its usual extent
- Causes
- Predicting flooding events
- Preparatory local measures
- Recommended preventive actions

TENDENCY TO FLOOD

The Cam Valley is a relatively shallow feature. It is not huge, and is laid to farmland to the greater extent. It doesn't naturally generate large flows in the Cam Brook in anything but particularly prolonged and heavy spells of rainfall.

The Cam Valley from Above Withyditch

However, there are 3 key factors that result in regular flooding events:

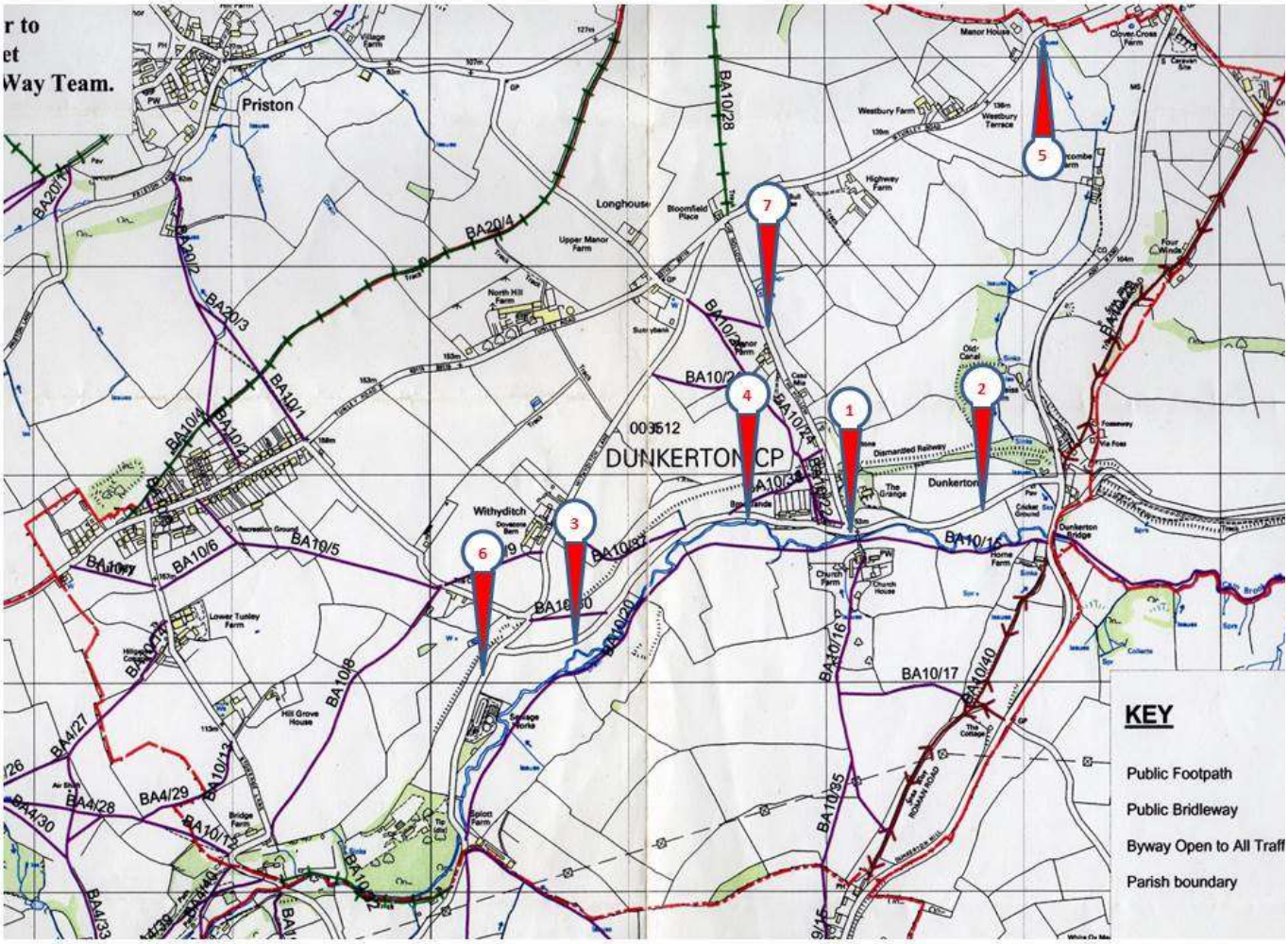
- The whole western Cam valley drains down to the one, small, ancient bridge by Dunkerton Church. There is consequently a long history of significant fluvial flooding there[1]

[1] "Passing along this road [Church Lane] the rectory is on the right and the church on the left, with a brook between; in the winter the water from this often rises over the path, and on one occasion some years ago it was too deep to allow of any one crossing, and the church service was in consequence held in the drawing room of the rectory."
Round Bath in Twenty Picturesque Rambles, 1896

- A few critical drains in the parish block persistently and regularly due to autumn debris, the accumulation of verge cutting debris and silting. This allows surface water run-off to merge and cause significant flows across the local lanes and ponding.
- Over the decades, erosion of the verges and subsequent cheap, makeshift and poorly-executed road-widening repairs have left many drain covers proud of the current surface and displaced from the run-off. Consequently rather than being controlled and removed, surface water accumulates downhill until it floods.

WHERE AND USUAL EXTENT

The areas of regular and predictable flooding are shown on the map of the Parish:



1. **The Bridge at Dunkerton All Saints' Church** (ST711593): flooding here during prolonged periods of heavy rain can be severe with a wide, deep, fast and turbulent flow. A bridge crossing is then potentially and unpredictably hazardous, even in a 4x4. The residents in the houses around the Church are usually cut off for the duration of the flooding unless they fancy a half mile uphill hike over saturated fields on the footpath towards Peasdown St John. Fortuitously, there has been no damage to nearby residential property in living memory.

Typical Flooding Event at the Bridge

2. Church Lane towards the A367 (ST714594): heavy and prolonged rainfall regularly causes deep and static surface water ponding approx 130m west of the gate into the cricket club ground. At times, most recently in 2012, it has been impassable and has cut the village off from access to the main road.

3. Church Lane towards Withyditch Lane: heavy and prolonged rainfall can result in strong but shallow downhill torrents from Engine Bridge (ST702592) across the whole width of the lane carrying down (towards ST702591) a lot of stone, sand and detritus. This is usually passable with care. As this surface flow goes downhill it goes round the descending left hand bend into Church Lane towards Dunkerton. Some of it spills into the field below the lane near the old mill pond, and creates a temporary water meadow. Some carries on along the lane to combine with the run-off from the (by now) saturated field abutting the north of the lane to flood across the whole width of the lane (at ST703591). The extent of this static flooding can be significant – up to some 20cm, dependent on how much detritus has built up on the

southern edge of the lane - making vehicular passing potentially hazardous and effectively closing the lane.

4. Gates into Field (ST708594): there is a shallow persistent run of water from springs across the lane and ponding here at almost any time. It is passable but hazardous in icy weather as this is regularly used as a 3-point turning circle area by the residents of Brooklands.

5. Manor House bend on B3115. Significant remedial works in recent years have solved the severe flooding that used to occur here. However, ponding can occur during heavy rain if the drain cover is blocked. This can be hazardous as it can force westbound traffic into the eastbound lane on a bend.

6. Withyditch Lane towards Cam Valley Sewage Works (ST701590). Several springs run from fields to the north onto and across the road surface. Blocked drains prevent removal of water resulting in extensive, shifting, persistent but shallow surface water flows across large areas of the road down toward the Cam Valley Sewage works. The drains then block there and extensive ponding occurs. It is usually all passable but the junction to Withyditch Lane can be very hazardous if icy, due to the adverse camber at this point.

7. The Hollow (ST708600 to ST709597.) Regular and persistent shallow flows of surface spring waters occur, carrying silt and debris across the lane blocking the drains and deflecting flows onto the carriageway.

CAUSES

1. The Bridge at the Church:

Main Cause: high rates of flow towards the small, fixed aperture.

Very old, very lovely, but very small

Contributory Factors: adjacent stone walls running south from the bridge, punctured by purpose built but very small drainage holes, act as perfect dams to prevent flood waters flowing on down the valley!

Stone walls hold back any water over-topping the brook trying to drain (left to right in the picture) through the bridge where the white railings are

2. Church Lane towards the A367:

Main Cause: the persistently blocked or very low capacity drain (is this a soakaway?) 130m west of the cricket club gate

Ponding to half of the width of the lane caused by the blocked drain/soakaway after only a moderate spring rainfall

Contributory Factors: any stream overflow and run-off from the east onto the lane and flowing round, rather than into, the drains near cricket club

A stream normally flows under the lane left to right where the 2 poles are. Witness marks on the tarmac here opposite the gate to the cricket ground reveal where the over-topped stream and other run-off flowed over and past the drains and on down the lane towards the blocked soakaway (above)

3. Church Lane towards Withyditch Lane:

Main Cause: the series of drains from Withyditch down to and past Engine Bridge. These drains are either:

regularly and persistently silted up

or blocked with debris

or sitting proud of road surface - the run-off just bypasses the drain

Contributory Factors: At Engine Bridge, the northern road verge has grown out over the years, diverting the run-off from Palmer's Lane (there are no drains higher up the valley on Palmer's Lane) away from the drain and across the carriageway. This diversion of flow away from the drain is encouraged by the significant adverse camber at this point.

4. Gates to Field:

Main Cause: A perpetual spring empties into a drain to the Brook. The drain serving the spring at the section that crosses under the lane to the brook is partially blocked and so of low capacity. This quickly backs up during periods of prolonged rainfall. The next drain sits proud of the surface and the water overflowing the first (blocked) drain runs past it to pond and eventually flows across the lane.

Perpetual spring – cattle drinking water

Further contributory factor: A spring to the west along the lane flows during winter to a drain that discharges at ground level into a field rather than on into the brook. The outflow of the pipe in the field blocks occasionally and, when it does, the drain backs up and the overflow flow worsens any ponding from the perpetual spring

Note the blocked drain and the asymmetric ponding around it. When it is not blocked, at lower rates of flow water is pushed away from it to the right by the camber

5. Manor House Bend on B3115:

   The drain here has been subject to substantial redesign and remedial works but the cover can still block occasionally causing ponding on the bend - resulting in significant danger as the westbound traffic moves into the wrong lane to avoid it.

6. Withyditch Lane Towards Cam Valley Sewage Works:

   Main Cause: the verge to the northern side of the lane fills up with detritus and pushes spring water from the fields out into the road, away from the drains

   Contributory Factors: the drains from the junction with Church Lane towards the sewage works are regularly silted up

7. The Hollow:

   Main Cause: Silting up of the higher drains taking springs off the fields to the east and west of the lane. Some capping work has been done in the past to the upper spring on the eastern side. At the time of writing, the Hollow is subject to further remedial drainage works. It will be interesting to see if they improve the situation this winter.

PREDICTING FLOODING EVENTS

Flooding events in the parish are predictable. If a period of heavy rain persists, several warning signs will appear:

- A rise in the level of the brook up to the keystone of the bridge

Dunkerton Bridge – Flooding Starting

- Ponding in the big field at ST707593

- Significant surface water flows over the road at the bottom of The Hollow – the drains above (up to and beyond Manor Farm) are by then usually full to capacity, or blocked by detritus, and are overflowing

- The brook over-tops at the gate to Millham House
- Ponding occurs at the troublesome drain/soakaway across Church Lane towards the A367
- Significant flows are seen from Withyditch and Palmers Lane down to, over and beyond Engine Bridge to form a water meadow near the old mill pond.

When flooding occurs, the flooding at the bridge reaches its peak level 5 hours (almost to the minute) after the rain stops. The good news is that after that 5 hour delay the level of the Cam Brook falls quite quickly.

RESPONSE TO DANGER SIGNS: PREPARATORY LOCAL MEASURES

A number of things can be done locally to minimise disruption:

- Clear “DIY” drainage cuts through the verges of Church Lane, to allow any ponding to drain away as it builds up

A DIY drainage cut through the verge at the drain/soakaway

- Check and clear critical drain covers of debris
- Warn residents near the bridge (especially those who might be out of the village at the time)
- Warn BANES Flood Team: prepare to contact the flooding team to update them and request to have ‘Road Closed’ signs ready for either end of Church Lane and the top of the Hollow
- Have a Parish Hall keyholder alerted (though they usually know)
- Better use of new parish website to create a flooding alerts/news page and update ‘Followers’ on news as it happens

RECOMMENDED PREVENTIVE ACTIONS

Other things can be done by the Parish Council and parishioners, supported by B&NES teams, to better manage the flood risk in the valley:

- Flooding at the Bridge: Local Action: Retain our “upland water management scheme” – a big landslip 2 years ago pushed several alder trees into the brook at ST704592. Though the usual approach is to clear water courses of obstructions, doing so here would simply get more water downstream to the bridge, quicker. Flooding will inevitably happen quicker, and last for longer. The fallen trees act as a natural porous barrier slowing down surge flows in the brook.

- Flooding at the Bridge: B&NES Action: Clear the drains down the length of the Hollow before winter
- Church Lane to A367: B&NES Action 1: Clear the troublesome 130m drain/soakaway before winter. B&NES Action 2: Survey the ineffective drains proud of the surface behind the cricket club – are there any remedial options?
- Church Lane to A367: Local Action: seek our Highways Inspector's view about getting the drain/soakaway annotated as a "Special Attention" drain.

Excellent clearance of the troublesome drain/soakaway by the BANES drainage team, Sep 16

- Church Lane to the West: B&NES Action 1: Cut back the northern verge round and below Engine Bridge to re-establish the run-off from Palmers Lane round Engine Bridge down into the existing drain. B&NES Action 2: Withyditch Lane – clear the drains and gullies before winter

- Gates to Field: B&NES Action 1: Survey the drain taking water from the perpetual spring down to the Brook and clear any blockage to re-establish its design capacity.

- Gates to Field: B&NES Action 2: Survey the drain here sitting proud of the surface – are there remedial options? Note the same view on page 10 above.

- Manor House bend: Local Action: Check the drain cover is clear

Additional note: there is a belief among some locals that opening the sluice gates at Combe Hay helps avoid flooding in Dunkerton. This is arranged locally through known contacts. Though it can't do any harm, and any no-cost action to reassure people is worth taking, I believe it is unlikely that something so far downstream could have any effect at Dunkerton Bridge.

NOVEMBER 2016 - SUMMARY OF HELP REQUESTED FROM B&NES TEAMS

Flooding at the Bridge	Clear the drains down the length of the Hollow before winter
Church Lane: to A367	Clear the troublesome 130m drain/soakaway before winter.
	Survey the ineffective drains proud of the surface behind the cricket club – are there any remedial options?
Church Lane: to the West	Cut back the northern verge round and below Engine Bridge to re-establish the run-off from Palmers Lane round Engine Bridge down into the existing drain
	Clear all drains and gullies from Withyditch down to the Cam Valley Sewage Works before winter
Church Lane: Gates to Field	Survey the drain taking water from the perpetual spring down to the Brook and clear any blockage to re-establish its design capacity
	Survey the drain here sitting proud of the surface – are there remedial options?

UPDATE - JULY 2017

After discussions with the B&NES Team and in the light of the experience of the 2016/17 winter, the following notes and additions are added to the report:

Flood Risk Point as Figure 1 (see page 4)	Location	Notes and/or Action Agreed
1	Flooding at the Bridge	No further action – there are no cost-effective options. Local responsibility to keep the drain covers clear of debris
2	Church Lane: to A367	The troublesome drain 130m west of the cricket ground has been investigated by CCTV. Unfortunately it didn't help, as the drain has a 90 degree junction about 1m back into the hedge line and the CCTV camera "head" can't turn that sharply. A road closure has now been programmed for the end of August to enable remedial works – hopefully to solve the problem by installing a new drain across the lane.
		Drains proud of the surface behind the cricket club – the hedge and road verge behind them to be reinstated enabling the area around the drains to be cleared and the build-up of mud and silt minimised.
3	Church Lane: to the West	"Side Out" the northern verge round and below Engine Bridge to re-establish the run-off from Palmers Lane round Engine Bridge down into the existing drain
		Local action to keep the drain covers clear from Withyditch down past Engine Bridge.
4	Church Lane: Gates to Field	Drain taking water from the perpetual spring down to the Brook has been cleared. No further action - there are no cost-effective options.
6	Withyditch Lane towards the Sewage Works	Significant remedial action has been taken to repair blocked and broken drains.
7	The Hollow	Significant remedial action has been taken to repair collapsed drain.

For any further information

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