



Slindon Parish Council - Operation Watershed Application

Background

The Parish Council has the opportunity to apply for capital funding through West Sussex County Council's 'Operation Watershed' to undertake work which will both help reduce the risk of flooding on the public highway and enhance the biodiversity, storage capacity and functioning of the pond.

Changes in the climate are impacting local communities in West Sussex and whilst the floods of 2012 may now be a distant memory, West Sussex County Council's response was the creation of 'Operation Watershed', within which the 'Active Communities Fund' was launched. It resolved to address issues with the drainage infrastructure including:

- the riparian ditch network
- damage to roads
- improving resilience to protect homes, businesses and highways.

What's Happening

The benefits of delivery of the Parish Council's 'Project ResPOND' are two-fold. It is aimed at improving the biodiversity and physical environment of the pond, encouraging more wildlife and making it an area that can be enjoyed by the whole community. It is also designed to have a positive impact on effective flood management for the community by providing a safer environment.

Slindon Parish Council has worked with a number of organisations and also benefited from the experience of Friends of Middleton on Sea Pond, which received funding from 'Operation Watershed' last year.

Chris Drake from 'FLOW' (Fixing and Linking Our Wetlands) has provided ecology and bat reports and the Council has taken advice from the Arundel Wildfowl and Wetlands Trust, and the Environment Agency.

Paul Cann, Arun District Council's Principal Drainage Engineer and Simon Mockford, Ranger with the South Downs National Park are supportive of the application and both organisations have made significant contributions towards the preliminary costs to allow it to be made.

Description of issues

Slindon Pond has a key role to play in effective flood management, through the retention of rainwater and controlled discharge of excess water through an outlet structure. Numerous incoming drainage pipes form part of the overall system.

The current construction of the system has a number of limitations which are increasingly impacting the pond's storage capacity, as well as restricting flows into the pond from the incoming drainage pipes. The incoming pipes primarily serve run off from the public highway, running down Church Hill.

Whilst some routine maintenance work of the pond has been undertaken over the years, the removal of substantial layers of silt is now required – last undertaken in 2000 - to improve the capacity of the pond, coupled with material changes to the existing incoming/outgoing infrastructure, through engineering works. Numerous works have also been carried out by West Sussex County Council in the past to improve the highway drainage system but have proved largely ineffective.



The position has deteriorated such that with the impacts of extremes of climate there is an increasing risk of significant flooding on the public highway in the vicinity of the pond causing damage also to the road surface – see Appendix A.

Description of proposed works

The pond is around 850 square metres and is constrained by an embanked area and woodland to the south and Church Hill to the north.

The scheme is designed to address a ground water flood risk through both material changes to, and increasing the drainage capacity of, the existing infrastructure.

This will be achieved by -

- Felling the willow tree on north bank as it is detrimental to pipework and gullies. Its extensive root system has infiltrated the inflow pipes.
- Increasing the capacity of the pond by dredging and de-silting, silt to be sent to a licensed waste management facility.
- Pond revetment and stabilising the banks adjacent to the northern bank, at the edge of the highway.
- Changes to incoming and outgoing pipe structures, delivered through material improvements to existing infrastructure and new infrastructure installations and builds.

Costings

- Preliminary work already undertaken to progress the application.

	Actual Cost	Funding Source
Silt Survey (Contamination/Depth)	£2500	Parish Council
Ecology Report	£600	SDNPA
CCTV/Jetting Drainage Survey	£3325	ADC
Topographical Survey	£660	ADC
Civil Engineer's Survey	£2000	SDNPA

Funded – SDNPA (28%), Parish Council (28%) and ADC (44%)

- Tenders to undertake the work have been invited from five civil engineering companies by April 12.
- Operation Watershed will have a further allocation of funding from 1 April 2021, being reviewed on an annual basis. An early application provides the best chance of access to limited funds.

Willow Tree – salient points

Although graceful in appearance and traditionally associated with ponds, willows are quick-growing, relatively short-lived and notorious for invasive root systems that, in search of water, will clog up and damage pipes. They are also known for having weak wood that drops readily in storms and as they age, their roots trend upwards, which can make them problematic for pavements and highways. Sadly, the willow has outgrown its current location.

The CCTV/Jetting Drainage Survey has identified severe, multiple root ingress and mass and where possible it has been removed through high pressure jetting. However, the overflow to pond (beneath the footpath) could not be cleared. After much effort both up and downstream the contractors were unable to remove the 100% root mass for its entirety in both inlet and outlet. The inlet pipe appears to turn on a 90-degree angle which prevented them traversing it, and the root mass appears to have completely penetrated and caused a large hole on this change of direction. Blockage of defective underground pipes by roots is relatively common and although chemical and mechanical means can be effective, the only satisfactory long-term



treatment is to repair or replace pipework. The current pipework is constructed in vitrified clay, concrete & plastic material.

The Ecology Report identified low potential bat roosting features and recommended removal of the tree as its roots have blocked the culvert under the road.

There is no tree preservation order (TPO) in place, an application to fell the tree was made by the contractor appointed to undertake the work, and details reported in the Parish Council minutes. The application can be viewed on the South Downs National Park Authority’s planning portal under reference-SDNP/21/00280/TCA.

Felling the willow tree alone will not address the issues and the possibility of undertaking engineering works whilst leaving it in situ would be impractical due to the invasive root system. After felling the willow tree, the roots will be treated with eco plugs and future management will be required as they are liable to come back.

Timing is critical as the willow needs to be felled before the bird nesting season starts and the engineering works must take place in late summer before the rainy season. Any delay will in turn postpone the start of planned project until the following year.

Evaluation of proposed scheme and application

Advantages	Disadvantages
Potential access to significant capital funding, albeit not guaranteed, for a project which secures the long-term future of the pond and manages the risk of flooding on the highway.	Loss of a common species of willow with a limited life expectancy, which can be replaced with another more suitable tree.
The funding may not always be available – limited window of opportunity to apply for funding.	Ultimately it could fall to the parish council to fund some of the work from its precept. This is based on the PC being responsible for the pond with a riparian responsibility to maintain under the land Drainage Act 1991. WSCC would be responsible for the highway drainage and culvert between the pond and the shallow ditch. The owner of Mulberry House is likely be legally responsible for the shallow ditch, perhaps with an interest from WSCC.
Level of support from South Downs National Park Authority and Arun District Council, which is backed up by a financial contribution towards the project.	Funding provided by the South Downs National Park Authority and Arun District Council is unlikely to be on offer again.
Enhance biodiversity of pond and water quality.	Silt accumulation, water storage capacity reduced and flooding risk is increased.
Reduce damage to the highway caused by lying water including dangerous potholes.	Lack of pro-active management leading to increasingly poor road condition, and an unsafe environment with flooding on a bend.

Decision/Next Steps

To balance the possibility and advantages of securing significant capital funding for a project which has the support of Arun District Council & the South Downs National Park Authority, benefiting both the environment and long-term management of flooding, against the loss of the willow and decide whether to continue with the application.



Appendix A

Damage to road surface caused by flooding in February 2020 reported to LoveWestSussex Report – extensive damage to vehicle when the flooding obscured the pothole.

