

15 October 2020

## **Allington Lane Flood Risk Issues: Update and Initial Viability Assessment**

### **1. Executive Summary**

Since the site visit on the 24 July 2020 The Environment Agency have been working on the agreed actions in order to understand what may be possible to reduce flood risk to residents on Allington Lane. This has included clarifying the potential options, estimating their cost and determining their affordability using a range of funding streams.

A total of six options have been considered with high level estimated costs ranging between £90k and £325k. These costs represent our best judgement based on experience, no detailed costs assessment has been undertaken at this stage. In future if we are able to develop more detailed costs, these values are likely to increase.

Our assessment of affordability has not identified any Environment Agency funding streams that could justify expenditure on this project. Our main source of funding for such schemes is Flood & Coastal Erosion Risk Management Grant in Aid (FCERM GiA). To qualify for this, the benefits of every scheme must be greater than its costs. Unfortunately this is not true for any of the options at present.

The assessment of benefits is heavily weighted towards reducing the impacts on properties which is what our assessment has focussed on. We have not assessed the wider benefits such as reduced traffic disruption which could help raise the BCR above 1. However, this would require a lot more technical work and would need to generate between £70k - £250k of additional benefit. Depending on which option is being considered, the maximum FCERM GiA that would be available would be between £18k - £30, representing about 5% of the funding required.

Other funding options are considered in the report including from Eastleigh Borough Council who may be able to justify some funds. However, it doesn't appear that there is an affordable option at this stage.

Alternative ways to reduce flood risk have therefore been considered. Currently we believe securing improvements as part of the One Horton Heath development represents the best option. The Environment Agency sit on the Ecological Steering Group for the project. Often ecological improvements go hand in hand with flood risk reduction and we may be able to influence the delivery of a main river diversion back to its original course through Lake Farm (Option 6) or the inclusion of Natural Flood Risk Management measures upstream to slow down the flood water before it reaches Allington Lane.

### **Next Steps**

- Continue to pursue opportunities to influence 1 Horton Heath Ecological Group.
- Request/collect evidence of capacity downstream of the Allington Lane culvert during flooding episodes.
- Request records from Eastleigh and Hampshire County Council on road disruption during flooding episodes.

### **Environment Agency**

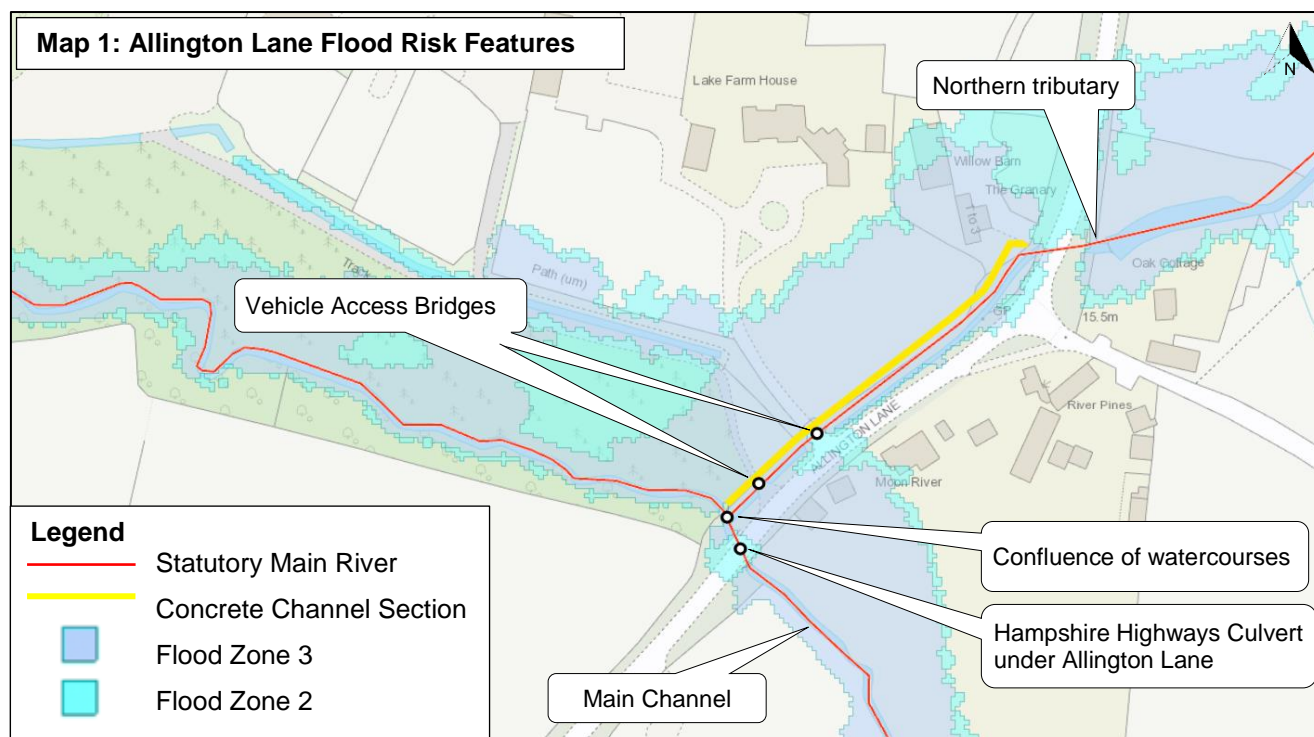
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## 2. Actions Update

A site visit took place on the 24 July 2020 where discussions were held between the Environment Agency, local residents, Hampshire Highways and the local MP to ascertain the nature of the flood risk and the potential ways to reduce it. The actions agreed at the meeting are listed below. This report provides an update on progress on the actions and the initial viability assessment work completed.

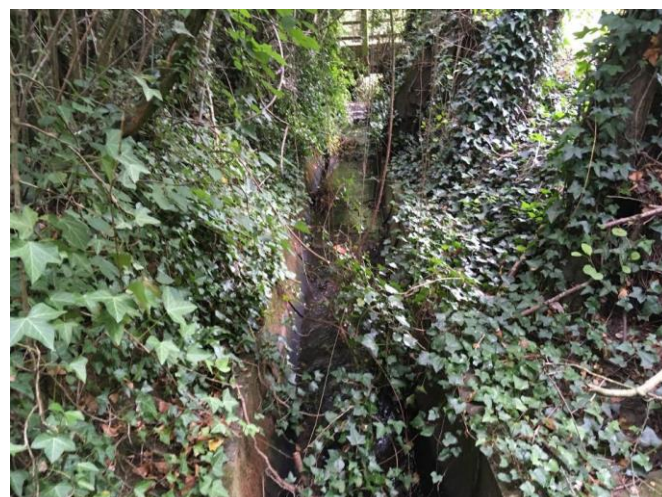
**Table 1: Record of Agreed Actions and Progress**

Action		Status
1.	Paul Holmes MP to act as point of contact for residents	Done
2.	Update to be provided in October	Meeting Fri 16 Oct 2020
3.	HCC Highways to investigate the feasibility/cost putting additional pipes through material above Allington Lane culvert to increase its capacity.	Likely to be sufficient space to place another culvert next to it or to replace the existing with a wider one. However to be certain that the scheme is viable a feasibility study will be required that looks at land, services, traffic diversion etc. for such a scheme, which would be likely to be expensive.
4.	EA to consider how to improve Main River that runs along Allington Lane to reduce flooding across road and so it doesn't restrict flows from the Allington Lane culvert.	Done - update in this report.
5.	EA to approach Eastleigh B.C. to find out if any funding available.	Done – update in this report.
6.	EA to continue to pursue strategic level options through planning process and the development of homes in the area.	Ongoing
7.	Paul Holmes MP to provide video taken during flood event showing flow route.	Done



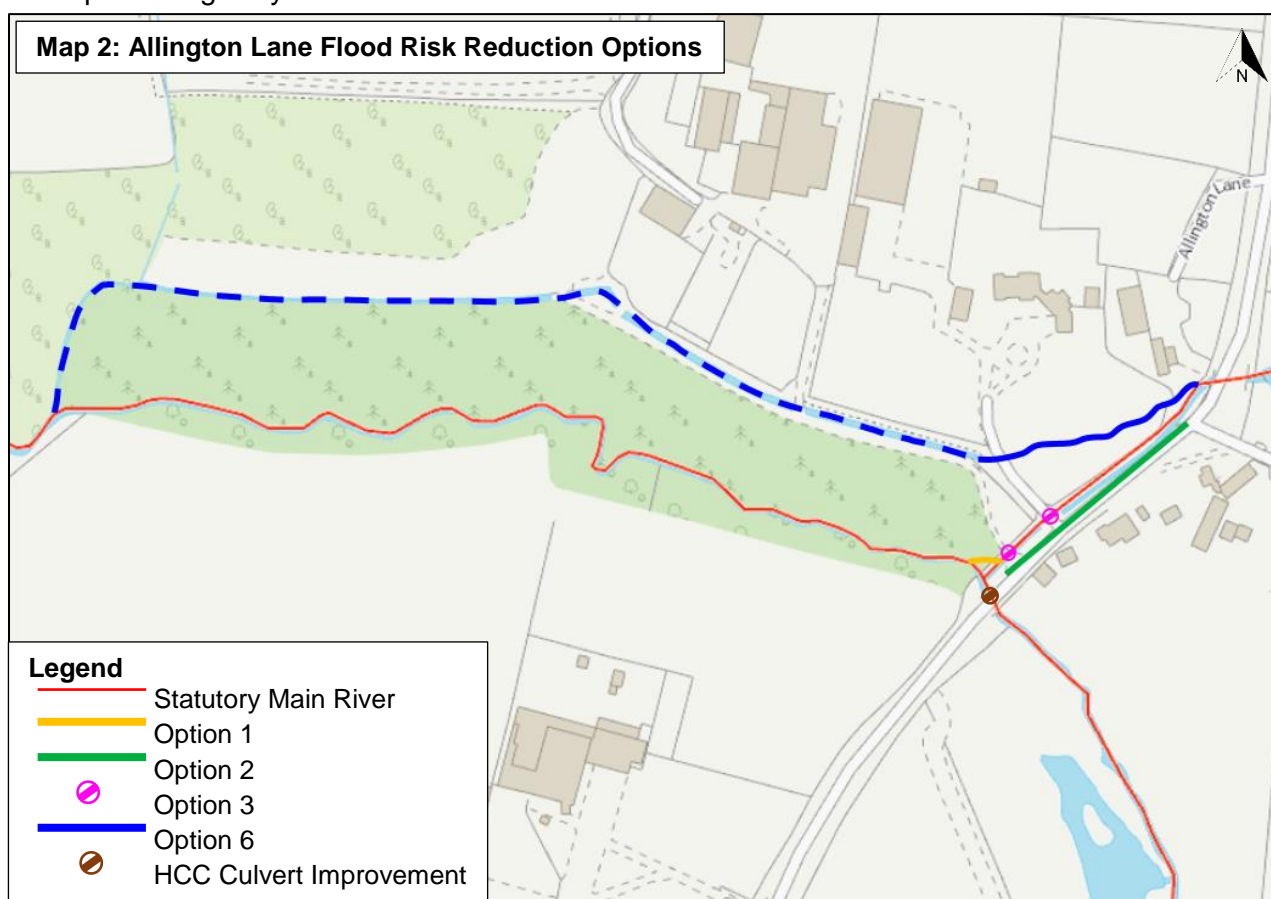
### 3. Improvement Options considered for 'Northern Tributary' (Action 4)

This stretch of designated 'main river' is a straight concrete lined channel running in a south-westerly direction parallel to Allington Lane on its western side. Improving the angle at which this stretch of watercourse enters the 'Main Channel' is a pre-requisite for Hampshire Highways undertaking works to increase the capacity of the culvert under Allington Lane which flows in a north westerly direction.



We have considered six possible options to reduce flood risk by improving this concrete channel and its confluence with the 'Main Channel'. The following points should be understood when reviewing these options:

- The potential costs presented represent our best judgement based on our experience, no detailed costs assessment has been undertaken.
- Presenting these options does not mean their delivery or funding can be justified within the funding rules that we are constrained by.
- The options represent a high level overview with minimal details. No detailed planning and site investigation works have been undertaken that would be needed prior to delivering any option.
- Factors such as appraisal work, detailed design, site surveys, ground investigations and traffic management costs could all lead to increased costs.
- Some of the options will require landowner consent which may or may not be possible.
- If any options are later considered to be viable, costs and designs will change.
- The overall costs will also need to include the potential improvement of the main river culvert by Hampshire Highways.



**Table 2: Potential Flood Risk Reduction Options for the Northern Tributary.**

Option		Description	Estimated cost (£)
1	Realignment of confluence.	The Northern Tributary currently meets the Main Channel at a 90 degree angle downstream of the Allington Lane culvert. The Northern Tributary, is likely to have a greater flow rate and could therefore reduce the ability for flows to discharge from the culvert. This option would seek to realign the Northern Tributary to a more acute angle, thus reducing the potential to obstruct flows from the Main Channel and potentially increasing flow rates away from the area.	90,000 to 110,000
2	Increasing capacity of Northern Tributary using kerbing.	The provision of kerbing running parallel to the road could potentially be used to help keep flows within the Northern Tributary for longer and preventing the flow path across the road and ultimately to the upstream side of the Allington Lane culvert. This option would also require some raising of levels at the entrance to the two access bridges to maintain the containment of the flows.  This option would require Option 1 to be implemented in order to prevent an increase in the potential to block flows coming through the Allington Lane culvert.	65,000 – 80,000
3	Increasing capacity of vehicle access bridges across channel.	The vehicle access bridges across the Northern Tributary, particularly the southern bridge, is a constriction point. Increasing capacity at this point would potentially reduce the likelihood of water flowing across the road to the upstream side of the Allington Lane culvert.  This option would require Option 1 to be implemented in order to prevent an increase in the potential to block flows coming through the Allington Lane culvert.	65,000 – 80,000
4	Combination of options (1+2) or (1+3)	If affordable, a combination of options would help increase the impact of the works.	155,000 – 190,000
5	Combination of options (1+2+3)		220,000 – 270,000
6	Main river diversion and habitat improvement	Reinstating the route of the main river to run via Lake Farm would have multiple benefits including taking the confluence of the watercourses further downstream away from the road and properties thus reducing flood risk. It would also provide a more natural flow path that could be used to enhance biodiversity and provide environmental benefits. Private landowner consent would be required for this option to be delivered.  It is assumed that this option would not require Option 1 to be undertaken.	260,000 – 325,000

## 4. Funding Options

The traditional route for delivering a flood alleviation scheme involves producing a business case that demonstrates the feasibility of the scheme, the costs and the benefits. Such a business case would provide the justification for an amount of Flood & Coastal Erosion Risk Management Grant in Aid (FCERM GiA) with the remainder of the costs being generated through partnership funding.

In order to estimate the potential Grant in Aid funding available assumptions have had to be made about the duration of benefit of the options and that the risk to properties is reduced by one risk band. The assessment at this stage has not included the consideration of the wider benefits, such as the potential for reduction of disruption to the road network which requires a more detailed analysis of the amount of disruption flooding is likely to cause including the likely delay to journey times caused by reduced speed of travel or road closures leading to diversions.

In all cases, in order to qualify for FCERM GiA the Benefit Cost Ratio (BCR) of undertaking the works must be greater than 1. Unfortunately for all the options considered the BCR was less than 1, and therefore the works would not qualify. In order to raise the BCR above 1 there we would need to be able to justify an additional £70k - £250k of additional benefit. Depending on which option is being considered, the maximum FCERM GiA that would be available would be between £18k - £30, representing about 5% of the funding required.

Table 2 below summarises the potential funding sources that have been considered and the likelihood and amount of funding that may be possible.

**Table 3: Potential Funding Sources.**

Source	Update	Potential Value
Flood & Coastal Erosion Risk Management Grant in Aid (FCERM GiA)	<p>This is the core source of funding for flood alleviation schemes. The amount of funding each scheme is eligible for is dependent on the amount of benefit each scheme provides. The main driver is the number of houses better protected.</p> <p>We have undertaken a high level assessment of the potential GiA funding available for Allington Lane based on better protecting 4 homes, for 100k scheme with 20yrs duration of benefit and a £300k scheme with a 50yr duration of benefit. These assessments do not include an assessment of wider benefits which at this location which would potentially include the reduction of traffic disruption.</p> <p>Assessed using the parameters specified above the BCR is &lt;1 and therefore the scheme would not qualify for FCERM GiA funding.</p> <p>Further details of this assessment can be seen in Appendix 1.</p>	<p>Option 1: £18k*</p> <p>Option 6: £30k*</p> <p>*only if benefits increased so that BCR&gt;1</p>
Hampshire Highways	<p>As referred to elsewhere in the report, Hampshire Highways may be able to contribute directly by increasing the capacity of the road culvert on Allington Lane. If confirmed, the reduction in flood risk of this work could be included in any application for FCERM GiA and the works counted as a 'works in kind' contribution.</p>	<p>Potential for 'work in kind' contribution</p>

**Table 3: Potential Funding Sources – continued...**

Source	Update	Potential Value
Environment Agency Maintenance Revenue Funding	This is the funding source used to undertake maintenance work on main rivers. Unfortunately given that this programme is already oversubscribed and the relatively low level of risk at Allington Lane relative to other locations it will not be possible to secure funds from this source.	None
Environment Agency Environment Programme	<p>This source of funding is used to fund the delivery of projects that deliver environmental improvements. One of the main drivers behind this funding is the improvement of Water Framework Directive waterbodies.</p> <p>Whilst option 6 will potentially deliver environmental benefits unfortunately this section of the main river is not a Water Framework Directive waterbody. Therefore there are limited drivers to attract funding from the environment programme to make improvements here, especially when considered in the context of other priorities in our Area.</p> <p>We may still be able to submit a bid but it is unlikely we will be able to secure funding via this route.</p>	Limited
South East Region Flood & Coastal Committee (RFCC)	<p>The RFCC administer the Local Levy fund which is raised via a levy on council tax. Whilst this doesn't normally fully fund projects in their entirety it is frequently used to support projects that are struggling to raise the required funding. Often the funding provided matches that being contributed by other individual contributors.</p> <p>If we are able to progress to a point where we have firm plans to deliver a scheme we would submit a bid for an appropriate level of funding with a good chance of the bid being successful.</p>	Match funding of partner contributions.
Eastleigh Borough Council (EBC)	We been in contact with Julia Birt, Local Area Manager at Eastleigh Borough Council and Sarah Boyd, Ecologist. Eastleigh are interested in supporting the delivery of some improvements if they are able to justify it. At present there is a small amount funding remaining from a different flood risk scheme we delivered in partnership with EBC which may be available, subject to securing the necessary approvals. More detailed option development would be required before this can be sought.	Possibly £7k
Hampshire County Council (HCC)	We frequently work in partnership with Hampshire County Council to reduce flood risk to communities. We would need to develop the options further before exploring the possibility of a contribution.	unknown

## 5. Other Delivery Options

With the difficulties in justifying funding for a traditional flood risk scheme we have started to explore alternative ways to secure improvements, which are detailed below.

### One Horton Heath Development – Ecological Steering Group

Working with EBC and our own biodiversity team we have identified that an alternative route to delivery may be possible that takes advantage of the One Horton Heath development. We currently sit on the Ecological Steering Group which is looking for sites local to the development to mitigate its impact and provide ecological benefits. Assuming landowner consent was possible, Option 6 may provide an opportunity to achieve the desired improvements for both existing residents and the development. There is also potential to consider achieving improvements through the application of natural flood risk management measures upstream of Allington Lane as part of the green infrastructure being developed for the site.

We believe this represents the best opportunity that exists for reducing flood risk to the properties on Allington Lane. We still need to confirm with Eastleigh what the planned phasing of this project.

### Property Level Resilience

We have recently delivered a Property Level Resilience scheme in conjunction with Eastleigh Borough Council and Hampshire County Council (HCC). Based on the success of this scheme that reduced the flood risk to a 11 homes we are currently in working with HCC to try and establish a much wider initiative that could benefit residents such as those on Allington Lane. This may not be preferred solution for residents on Allington Lane but it may provide a fall back option once all others have been exhausted.

## 6. Next Steps

Given our current understanding our next steps will be as follows:

- We will continue to pursue opportunities to influence 1 Horton Heath Ecological Group to see if there is potential to achieve Option 6 and/or upstream natural flood risk management measures.
- We are keen to understand what capacity there is in the main channel downstream of the Allington Lane culvert during flooding episodes. We would therefore like to gain further photo/video evidence of this, as well as the flows at the top and bottom of the 'Northern Tributary'.
- Request records from Eastleigh and Hampshire County Council on road disruption in the area that may be used to assess the wider benefits of making improvements.

## Appendix 1 – Partnership Funding Assessment for Flood & Coastal Erosion Risk Management Grant in Aid.

### Initial Assessment

Option	Properties better protected	Outcome
Option 1 (£100k & 20yrs duration of benefit)	4	£36,096 of benefit, so BCR is below 1. Not viable  NO GiA available
Option 6 (£300k & 50yrs duration of benefit)	4 + 1 for Climate Change risk by 2040	£63,983 of benefit, so BCR is below 1. Not viable  NO GiA available

### Assessment to determine OM1 Benefits Required

Option	Properties better protected	Benefit from protecting properties (OM2)	FCERM GiA eligible IF BCR > 1	Wider Benefits Required to get BCR >1 (OM1A)	Wider benefits (OM1B) <small>(Not included in determination of BCR as it is taken as 50% of OM2 benefit)</small>	Partnership Funding Score	Contributions required
Option 1 (£100k & 20yrs duration of benefit)	4	£35,800	<b>£13.8k</b>	£69,200 (£100k – 35.8k) + £5k	£17,900	6%	£93.8k
Option 6 (£300k & 50yrs duration of benefit)	4 + 1 for Climate Change risk by 2040	£63,983	<b>£32.3k</b>	£251,017 (£300k – 63,983) + £15k	£31,992	5%	£285.5k