

RM002 Mr and Mrs Storey's objection to the Environment Agency's Application to vary the Scheme within the River Medway (Flood Relief) Act 1976

Environment Agency technical response, September 2020

1. Introduction

Bridge House is the closest home to the River Medway in Penshurst, at its closest point it is just nine metres from the river bank. It is within the Flood Storage Area (FSA).

We have lived at Bridge House for fifteen years. In 2010 the Environment Agency (EA) informed us that they had a proposal to raise the height of the water level stored in the FSA. This proposal did not proceed. But in 2015 we received Newsletter No1 informing us that the proposal was now being funded and would be proceeding.

Environment Agency response to point 1:

Noted.

2. Fundamental reasons for Objection

2.1 We strongly object to this application to vary the Scheme for the operation of the Leigh Flood Storage Area. The EA has consistently failed to properly understand the effect that the operation of the FSA has on both Bridge House and Penshurst. Because of this lack of understanding it has developed a theoretical model of flood events that is fundamentally flawed. This has a knock on effect through the whole project.

Environment Agency response to point 2.1:

The Environment Agency, and the wider hydrological industry, uses modelling software, mapping techniques and topographical and rainfall data to understand a wide range of catchment processes, how river catchments respond to different rainfall events, and to identify the impacts of these events.

The Environment Agency has flow gauges upstream of Rogues Hill, at Chafford Bridge and Colliers Land Bridge on the River Medway and at Penshurst and Vexour Bridge on the River Eden. This represents a significant investment in flow monitoring and allows us to understand the water levels on both rivers. Information from these gauging stations was used to calibrate the 2015 Medway flood model and is used to inform the operation of the Leigh Flood Storage Area (FSA).

In addition to the 2015 Medway flood model, the Environment Agency has photographs and data showing the extent of land flooded during previous events, and staff observed the flooding at Rogues Hill in February 2020 to understand the

extent of flooding at this location. The timing and extent of the flooding in February 2020 was as predicted by the model.

2.2 Despite having had at least ten years to measure the actual flood levels at Bridge House and Penshurst, the EA has taken an entrenched position on its theoretical modelling and simply denies that raising the level of the FSA will have an adverse effect on Bridge House and Penshurst.

Environment Agency response to point 2.2:

Our modelling indicates that the proposed change to increase the maximum impoundment level will not increase the depth of flooding above Rogues Hill. This is demonstrated in Figure 1 below. Figure 1 shows the increase in flooding depth from raising the Leigh FSA maximum impoundment level from 28.05m Above Ordnance Datum (AOD) to 28.6m AOD (measured at the main Leigh FSA embankment) during a 1.33% flood event. The map below has been taken from the Flood Risk Assessment for consistency. This map has been updated since the submission of the Application. Whilst it shows greater depth variation lower in the FSA, the point at which the effect of the expansion dissipates remains the same.

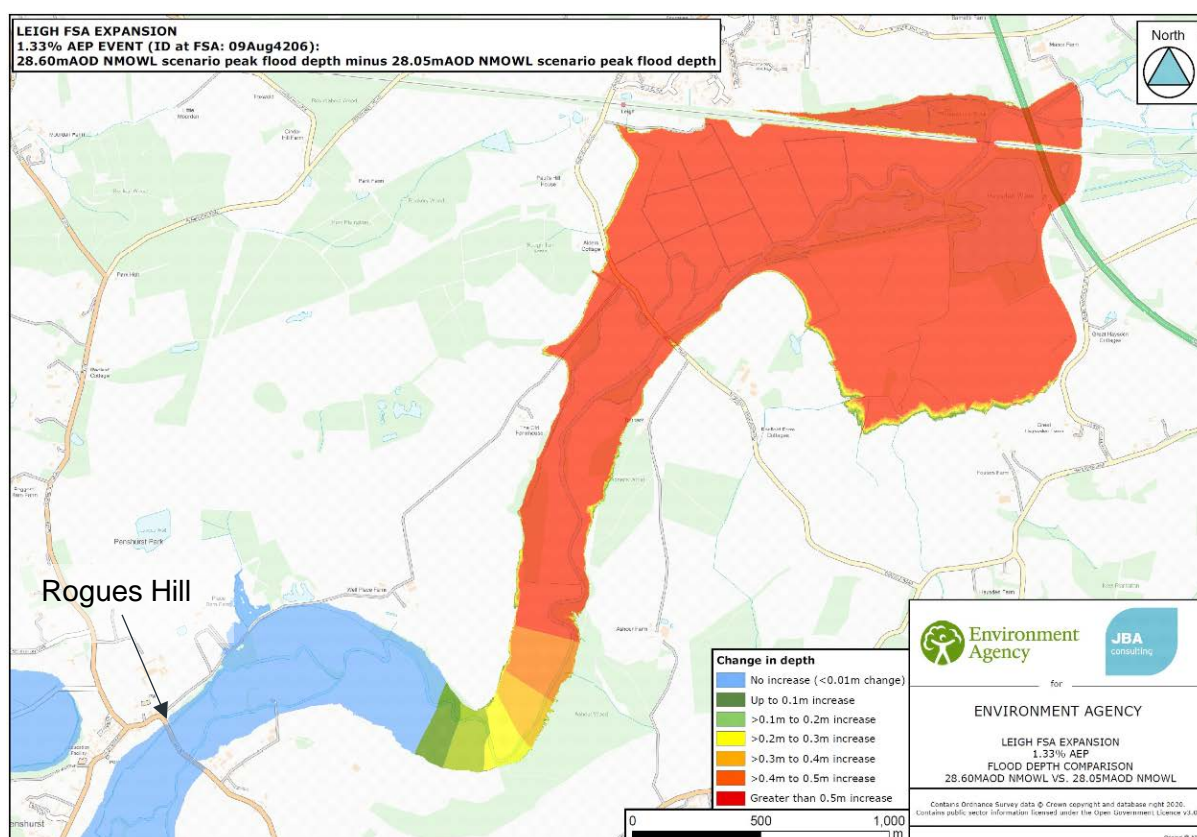


Figure 1: Increase in flood depth in a 1.33% flood event. 28.05m AOD vs 28.6m AOD

The Flood Risk Assessment was submitted with our planning application at the end of August 2020. The planning application reference number is 20/02463/FUL, and it is available for view at the Sevenoaks District Council planning portal:

<https://pa.sevenoaks.gov.uk/online-applications/applicationDetails.do?activeTab=summary&keyVal=QFPV1WBK0LO00>

Every flood event is different, depending on a number of factors, including soil saturation and weather patterns. The modelled scenario in Figure 1 was chosen to demonstrate the impact of expanding the FSA because it shows the greatest change in flood depths.

We understand that there is concern within the community in Penshurst that the effect of operation of the Leigh FSA on flood levels in Penshurst is not reliably predicted through our modelling. We are looking to provide additional depth gauging in Penshurst, downstream of Rogues Hill. This will provide definitive data on this issue, and will hopefully provide the reassurance sought by the community.

2.3 The River Eden joins the River Medway a few hundred metres upstream of Bridge House, and measurement of actual flood levels should have been taken after this confluence of two major Kent rivers to understand the effect that the operation of the FSA causes during times of flooding. Instead the EA relies on measuring actual flood levels at Colliers Land Bridge for the River Medway and Vexour Bridge for the River Eden and then estimating the effect after the confluence. This is a fundamental flaw. Modelling is only ever as good as the inputs into it, if the inputs are flawed, the outputs will also be flawed.

Environment Agency response to point 2.3:

As stated in 2.1, the Environment Agency has flow gauges upstream of Rogues Hill at Chafford Bridge and Colliers Land Bridge on the River Medway, and Penshurst and Vexour Bridge on the River Eden. This allows us to understand the flow in both rivers, including after the confluence.

Whilst it is always possible to further refine the calibration of any flood model by considering more baseline data, the Environment Agency is confident that the modelled flood data is sufficient to understand the flood risk at Bridge House, and additional flow gauging data from points downstream of the confluence will align with the outputs of the 2015 Medway flood model.

2.4 It is a disgrace that the EA have never measured actual flood levels after the confluence of the two rivers.

Environment Agency response to point 2.4:

As explained in our response to 2.3, we do not consider this is necessary for operational purposes, as we already measure water levels on both rivers. We appreciate, however, that we need to address the concerns of the community in Penshurst on this issue, and are looking to provide additional depth gauging in Penshurst downstream of Rogues Hill.

2.5 Bridge House has flooded 5 times since 2000. On every occasion, that flooding has been after the EA has commenced impounding of the FSA. We have submitted evidence of these five floods to the EA that shows the flooding took place after the EA started impounding of the FSA. These submissions are included in this document as Appendices A, B, C & D.

Environment Agency response to point 2.5:

Bridge House is within flood zone 3. This is land that is assessed as having a 1% or greater annual probability of flooding.

Whilst Bridge House is within the natural floodplain of the River Medway, and would flood even if the Leigh FSA did not exist, we acknowledge that in certain circumstances this can be made worse by the operation of the existing Leigh FSA.

It is not correct to assert that flooding at Bridge House is solely due to the operation of the Leigh FSA. The Leigh FSA only operates during high flows, therefore the same conditions that drive flooding in Penshurst will also determine the operation of the Leigh FSA. This does not mean that the Leigh FSA causes the flooding in Penshurst.

2.6 December 2013 was the first flood occasion for us and we struggled to get the EA to pay compensation for the losses incurred. In November 2019, five years and eleven months after the event, the EA finally admitted liability and paid us compensation. Yet in their application they still say that raising the level of the FSA will not have an adverse effect on us. There is a serious breakdown of communications within the EA.

Environment Agency response to point 2.6:

The River Medway (Flood Relief) Act 1976 (the 1976 Act) accepts through section 17(4) that property may be affected by the operation of the Leigh FSA since it gives landowners the right to be compensated. Further, landowners may enter into easements with the Environment Agency to allow the Leigh FSA to flood their land under sections 24 and 25 of the 1976 Act.

The Environment Agency acknowledges that it has an obligation to compensate for damage caused due to the operation of the Leigh FSA in accordance with section 17(4) of the 1976 Act.

In 2019 you provided photographic evidence showing the peak of the flood at Bridge House in December 2013. Using the detailed topographic survey that had been carried out of Bridge House by J C White, the Environment Agency accepted that the living room of Bridge House was flooded to a depth of approximately 0.1m.

The 2015 Medway flood model shows that operation of the existing FSA can increase flood levels by up to 0.1m at Bridge House.

Therefore the Environment Agency agreed to pay compensation for the damage caused by the operation of the FSA in December 2013 that is not covered by the 1985 Deed.

As explained in 2.2, the 2015 Medway flood model shows that Bridge House will not be affected any further by the proposed expansion.

Compliance with the statutory obligation to pay compensation when damage is caused should not be regarded as evidence that the proposed expansion of the FSA will increase the impact of flooding at Bridge House.

2.7 Page 7 states “There are no households within the additional area to be flooded.” This is simply untrue. Bridge House is within the existing FSA so must be within the enlarged FSA.

Environment Agency response to point 2.7:

In the application dated June 2020 (the Application), the "additional area to be flooded" refers to the additional area to be flooded as a result of the proposed changes (emphasis added).

This area is in addition to the area that is already flooded as a result of operation of the existing FSA.

We say "there are no households within the additional area to be flooded" because, as explained in 2.2, the flood modelling shows that the proposed changes will not increase the depth and/or duration of flooding at Bridge House.

That said, for the avoidance of doubt, the house and garden at Bridge House is on occasion flooded by the River Medway, and we agree that in certain circumstances this flooding may be to a greater depth and/or for a longer duration as a result of operation of the FSA in accordance with the existing Scheme. We also acknowledge there are other properties at Penshurst whose gardens and outbuildings are similarly affected by the existing FSA.

3. Flawed Process

3.1 Natural Flooding

We challenge the EA’s assumption that “Natural Flooding” occurs rather than being the effect of impounding the FSA. In our experience as residents of the

house most affected, this is simply not true. We have provided evidence to the EA that all floods from 2000 to 2020 at Bridge House and the Village have occurred after the impounding of the FSA takes place. This flooding is greater than, and lasts for a longer duration than, any natural flooding.

Environment Agency response to point 3.1:

We acknowledge that Bridge House and areas of Penshurst can be affected by the operation of the existing Leigh FSA, depending on the size of the flood event. However, the area is within the floodplain of the River Medway so can also be affected by naturally-occurring flooding.

Please see the photographs below showing that natural flooding occurred at Penshurst prior to the operation of the FSA. The first (Figure 2) was taken in the garden of Colquhouns Cottage at 14:12 on 20 December 2019. It shows the water level near the gym. The level here is approximately 29.0m AOD, similar to the internal floor level of the kitchen at Bridge House (which is 29.03m AOD). Impoundment didn't commence until 15:30 on the same day.



Figure 2: Flooding of the garden of Colquhouns Cottage, 14:12 on 20 December 2019

The next two photographs below (Figures 3 and 4), were taken from Rogues Hill on 16 February 2020. Figure 3 shows the fields immediately upstream of Bridge House and was taken at 12:51. Figure 4 was taken from the bridge on Rogues Hill over the River Medway and shows Bridge House. It was taken at 13:13. Impoundment didn't commence until 17:15 the same day.



Figure 3: Flooding of the fields immediately upstream of Bridge House, 12:51 on 16 February 2020



Figure 4: River Medway and Bridge House, 13:13 on 16 February 2020

The final photograph (Figure 5), below, was taken 14 minutes earlier than Figure 3 (at 12:37 on 16 February 2020). It shows the bridge on Ensfield Road over the River Medway, 3.9km downstream of Penshurst. It is clear that the river was within bank at this location whilst at the same time there was significant flooding in Penshurst driven by upstream flows. The Leigh FSA was not in operation and all the flooding at this time in Penshurst was driven by flows from upstream.



Figure 5: The bridge on Ensfield Road over the River Medway, 12:37 on 16 February 2020

3.2 Inconsistent standards

In the EA's Strategic Flood Policy it states that 1 in 100 years plus climate change is the scenario that should be defended against.

Throughout this project the EA have always quoted 1 in 100 years plus climate change as the scenario used.

In the application the EA have quoted a 1 in 75 years scenario. This conflicts with their own National Guidance.

Environment Agency response to point 3.2:

Figure 1 in response 2.2 shows a plan of the additional depth of water during a modelled 1.33% (1 in 75 year) flood event as a result of changing the maximum stored water level from 28.05m AOD to 28.6m AOD.

We chose this scenario to demonstrate the impact of expanding the FSA because it shows the greatest change in flood depths as a result of the proposed change. The depth increase for the majority of the storage area will be greatest for the 1.33% event.

During more extreme flood events, such as a 1% (1 in 100 year) plus climate change event, the increase in depth as a result of the proposed change reduces. This is because the natural flood level, which is greater, dominates.

Please see Section 5.1 (pages 24 to 26) and Appendices A and B of the Flood Risk Assessment for further details. For clarity and to address your concern, figures B1, B2 and B3 in Appendix B of the flood risk assessment show the change in flood depth for the following flood events: 1.33%AEP, 1%AEP and 1%+20%flow AEP.

3.3 Failure to gather evidence of actual flood levels

The EA have failed to measure the actual flood levels at Bridge House specifically and Penshurst generally. Instead they have relied on theoretical modelling, which simply does not stand scrutiny when compared to the actual flood levels during impoundment of the FSA. The EA first raised the proposal to increase the FSA in 2010. Had they measured the flood levels then they would have actual data for the floods of 2013, 2019 & 2020. They failed to do this, instead they have relied on calculated flood levels and theoretical modelling. We have sent the EA the actual flood levels at Bridge House but they have chosen to disregard these. Their arrogance as an organisation is unacceptable in today's UK culture of openness and accountability

Environment Agency response to point 3.3:

Please see to our answers to 2.1 and 2.3

3.4 Misleading statements

On Page 12 the EA state that they use "Better and more reliable gauging technology which provides more accurate information about actual river levels." Whilst this may be true, it is certainly not true in Penshurst. They have no gauging at all between the Leigh Barrier itself and Colliers Land Bridge for the River Medway and Vexour Bridge for the River Eden, a distance of 8km and 5 km respectively. And there is no gauging at all after the confluence of these two rivers.

Environment Agency response to point 3.4:

Please see to our answer to 2.3

3.5 Flow Rates

The current Scheme allows the FSA to be used when the rate of flow in the River Medway exceeds 35 cubic metres per second. Since 2011 the EA have only used the FSA when the flow exceeds 75 cubic metres per second, as to “go too early” would leave them with no spare capacity. Yet they ask to retain the lower figure. This places a great risk on Penshurst. With an increased capacity they could start impounding of the FSA too early and this would increase flood levels at Bridge House, (and Penshurst generally).

Environment Agency response to point 3.5:

The flow rate at which impounding begins needs to be flexible to enable optimum use of the storage volume in the FSA. This will vary for every flood event. It is important not store flood water too soon to ensure we have capacity to store the peak and the most damaging flood flows for any given event.

For the majority of floods impounding starts around 75 cubic metres per second. However that is not always the case and it may be necessary to impound water at different flows, both higher and lower, to provide the maximum flood risk reduction in Tonbridge.

Altering the Scheme’s minimum operating flow rate in law would fundamentally diminish the ability to operate the FSA, as designed, to reduce flood risk to downstream communities.

3.6 Biased letters of support

In the application the EA has submitted letters of support from many bodies. Not one person or organisation representing upstream communities have been invited to submit letters giving opposing views. For a Public Body this is unacceptable bias.

Environment Agency response to point 3.6:

In May 2019, the Environment Agency's land agent, Dalcour Maclaren, wrote to 36 landowners and tenants within the existing FSA to advise them of the proposed application to increase the maximum stored water level, and to offer a meeting to explain the impact this would have on them and discuss any concerns they had. These letters were followed up with phone calls and 27 parties took up the offer of a meeting. There are no new landowners and/or occupiers that would be brought into the FSA as a result of the proposed expansion.

Alongside this process, the Environment Agency also contacted all of the organisations named within the Act as Specified Interests (plus additional organisations as directed by Defra) to make them aware of the application to expand the FSA, offer meetings to discuss the proposal and any concerns they had on behalf of their residents or members, and to understand what process they would need to go through in order to consider the proposal. These parties are listed in

Section 8.1 of the Application. All of these parties, with the exception of Maidstone Borough Council represent members of upstream communities, to a greater or lesser extent.

The organisations have gone through their own processes to ensure that they understand the impact of the proposal on their residents or members.

It was hoped that by carrying out this pre-consultation, the Environment Agency could understand and resolve or mitigate any concerns prior to submitting the Application to the Minister.

The one month long formal consultation for the Application began on submission of the Application to the Minister. Any Specified Interest could make a representation (either of support or objection) during this period, therefore we do not agree that the consultation has been biased.

3.7 Failure to meet statutory obligation 1

The Environment Agency (EA) have not met the requirements of Section 17, Part II (e) of the River Medway (Flood Relief) Act 1976. The Act requires the EA to supply a copy of the revised scheme to “The Specified Interests” BEFORE submitting the scheme to the Minister for approval. The EA failed to do this. The scheme was submitted on the 10th June, but we did not receive the copy until after this, denying us the opportunity to (a) discuss the revised scheme with the EA and (b) to come to an agreement with them.

Environment Agency response to point 3.7:

Section 17(3)(e) of the 1976 Act requires the Environment Agency to submit the Revised Scheme to Specified Interests before submission to the Minister. We posted the Revised Scheme to the Specified Interests on 8 June 2020 and then submitted the Application to the Minister on 10 June 2020. You received your copy on 11 June 2020 which means that your copy of the Scheme reached you after the Minister. We agree that this is a technical breach of Section 17(3)(e), for which we apologise. However, as your representation has been accepted by Defra, the delay in you receiving the notification of our intention to vary the Scheme has not denied you the opportunity to be heard by the Minister. You have not suffered any detriment or prejudice from this delay.

We have not denied you the opportunity to come to an agreement with us as we have been in discussions with you for some months. We do not have to agree compensation nor agree an easement to flood before submitting the Revised Scheme to the Minister.

We understand that you would like compensation to enable you to carry out works that will make Bridge House resilient to future flood events. We have started discussing with you the possibility of a supplemental agreement to fully and finally

discharge the obligation to pay compensation when damage is sustained as a result of operation of the FSA.

These are separate discussions which we do not believe should affect the determination of the Revised Scheme.

3.8 Failure to meet statutory obligation 2

The Environment Agency (EA) have not met the requirements Section 17, Part II (e) of the River Medway (Flood Relief) Act 1976. The Act required the EA to supply a COPY of the revised scheme to “The Specified Interests.” The EA failed to do this. The copy supplied is not the same as that which has been submitted to the Minister. The revised scheme on the reverse of the letter dated 8th June contains 5 paragraphs, whereas the revised scheme submitted contains 4 paragraphs. Again as the scheme had already been submitted, we were denied an opportunity to (a) discuss the revised scheme with the EA and (b) to come to an agreement with them.

Environment Agency response to point 3.8:

The Environment Agency sent you the Revised Scheme on 8 June 2020. With the covering letter we also sent you a full copy of the Environment Agency’s Application dated June 2020. This Application included a copy of the Revised Scheme in Appendix B. The copy set out in Appendix B of the Application differed from that in the covering letter since it did not include paragraph 2 as it appears in the covering letter. We apologise for this error and any confusion caused. However, we believe no prejudice has been suffered. Paragraph 2 of the covering letter is merely informative in that it states we will apply for planning permission and that we shall operate the FSA according to the Revised Scheme after planning permission is granted in accordance with the succeeding paragraphs of the Scheme.

This version of the Scheme does not differ substantively from the version in the application. There is no difference between the two versions on how the Scheme will be operated. For the sake of certainty, we confirm the Scheme as enclosed in the Application is the version of the Scheme which the Environment Agency intends to operate. Apart from some confusion, which we have now clarified, you have not suffered any prejudice.

For the reasons set out in our response to 3.7, we do not agree that this has denied you an opportunity to come to an agreement with us and our discussions are ongoing.

3.9 Communication Failure 1

The EA have consistently failed to listen to us, even when we have provided actual evidence of the flood levels at Bridge House when they have impounded the FSA. We eventually persuaded the EA to erect a Gauge Board on the river

bank next to Bridge House. When they erected it we told them it was too short and would not be visible during a flood, they did nothing. In both the 2019 and 2020 floods the Gauge Board was under water. It is now July 2020 and the EA have still done nothing.

Environment Agency response to point 3.9:

Staff and representatives of the Environment Agency have met with you and spoken to you on the phone on numerous occasions. They listened to what you have said but, as is clear from your representations, there is a disagreement between us over the impact that the proposed change to the operation of the FSA has on Bridge House.

We acknowledge that the gauge board can be improved for higher flows and we are investigating replacing this.

3.10 Communication Failure 2

There has been no meaningful discussion with residents nor the Parish Council. What communication there has been, has simply been the EA telling us that their Theoretical Model shows that they are not responsible.

The EA have failed to monitor, assess safety and accessibility within the Village and to identify solutions.

Environment Agency response to point 3.10:

The primary objective of the proposed expansion of the Leigh FSA is to provide improved flood protection to properties in Tonbridge and Hildenborough.

The proposed expansion will not reduce the flood risk to Penshurst, however (for the reasons set out in 2.2 above) our modelling shows that the expansion will not increase flood risk in Penshurst either.

Our engagement with the community through this scheme has raised awareness of the FSA and opened a conversation about the wider flooding experienced in Penshurst and the problems this causes. We now recognise the depth of concern in the community about local flooding.

As a result, we are offering to fund the National Flood Forum to help the local community to set up a flood action group where the concerns of the community can be raised with all of the organisations involved in managing flood risk so that ways to mitigate the impact and improve the resilience of the community to flooding can be explored together.

The Environment Agency is always here to discuss any aspect of our work, including flood risk, and we have had numerous discussions with you about the impact of the existing FSA and the possibility of extending your existing flood deed to compensate you for future flooding compensation claims.

3.11 Disregard for local MP

Tom Tugendhat MP has been supportive of our vulnerable position within this proposal. He has raised our position with the EA but has always been told that they were discussing it with us, whilst this was not untrue, it implied that a solution was being agreed, when it was not.

Environment Agency response to point 3.11:

We have kept Tom Tugendhat MP updated on the progress of the project in general.

All landowners within the FSA are protected from loss by the River Medway (Flood Relief) Act 1976.

The proposed change will not increase the impact of the FSA on Bridge House. However, we have been discussing the potential for an agreement to pay a sum in lieu of compensation for future losses as a result of the operation of the existing FSA and this discussion is ongoing.

3.12 Risk of Judicial Review

All of the above flaws in the process mean that any decision made on the EA's Application could be challenged by means of a Judicial Review. The residents of Penshurst have twice raised funds to pay a QC to challenge two national decisions via Judicial Review, one planning decision and one aviation decision. Both decisions were quashed due to failure in process.

Environment Agency response to point 3.11:

Noted.

4. Bridge House

4.1 Right to flood

There is a legal agreement (1985 Deed) that allows the EA to flood part of our property but not all of it, effectively they can flood the garden but not the house.

We raised the validity of the 1985 Deed with the EA, and in 2018 they confirmed in writing that there was a discrepancy within it but that they still considered it to be valid. In 2019 we asked the EA to raise this discrepancy with their legal counsel. In May 2020 we received a summary of that legal opinion but were told that it was privileged information and they would not allow us to see it. The EA is a public sector organisation and the project is a public one, we are taxpayers and it is wrong for the EA to withhold this legal opinion. They should operate with transparency.

Environment Agency response to point 4.1:

The Environment Agency has taken the unusual step of summarising Counsel's advice which we took at your request, questioning the validity of the easement relating to your land. Usually, such advice is privileged and, as such, the Environment Agency will not release the document. We have summarised the advice accurately. If you do not accept our position and believe the 1985 Deed is not enforceable then you should seek your own legal advice on the action you may take.

4.2 Liability accepted and partial compensation paid

In 2013 the EA flooded Bridge House by 0.5 metre when they impounded the FSA. When we contacted them to receive compensation, we were told that they did not have a procedure to pay compensation, despite it being a legal requirement of The River Medway (Flood Relief) Act 1976 for them to do so. We continued to press our case over a period of years, they were then told by their own advisors that they had to pay compensation, and finally in November 2019 the EA accepted liability and paid us compensation. The amount claimed was the sum of individual elements, for two elements the EA only paid us 50%. This was unlawful as The River Medway (Flood Relief) Act 1976 specifically states that full compensation shall be paid.

Environment Agency response to point 4.2:

As noted in 2.6, the Environment Agency recognise that they have an obligation to compensate for damage caused by the operation of the Leigh FSA in accordance with section 17(4) of the 1976 Act.

The photographic evidence you provided showing the peak of the flood at Bridge House in December 2013, and the detailed topographic survey of Bridge House that was carried out by J C White, show that the living room of Bridge House was flooded to a depth of approximately 0.1m during that event.

The 2015 Medway flood model shows that operation of the existing FSA can increase flood levels by up to 0.1m at Bridge House.

Therefore the Environment Agency agreed to pay compensation for the damage caused by the operation of the Leigh FSA because the flooding extended beyond that agreed in the 1985 easement.

As explained in 2.2 above, the 2015 Medway Flood model shows that Bridge House will not be affected by the expansion.

For the two elements where the Environment Agency paid 50% of the sum claimed, you agreed that this was a fair sum for the losses you incurred. You were therefore paid full compensation on the merits of your claim.

Had you not agreed, there is a mechanism within the River Medway (Flood Relief) Act 1976 for the compensation claim to be determined by a court.

4.3 EA to purchase Bridge House

The EA produced a Technical Note that showed the forecast flood levels at Bridge House. This was so serious that we offered to sell Bridge House to the EA. The EA commissioned two Estate Agents/Surveyors to provide full Red Book Valuations of the Open Market Value (OMV) of Bridge House. After we were given copies of the valuations the EA ceased communicating with us. After a year and a formal complaint we were told that they would not be proceeding with the purchase of Bridge House. The Technical Note is at Appendix E

Environment Agency response to point 4.3:

You bought Bridge House in 2004. The conveyancing process should have made you aware of the FSA and the fact that the property (including the house) had previously flooded.

The Environment Agency carried out valuations of the property in order to properly consider your offer to sell the house. As the modelling shows that the increase in storage level does not increase the flood risk at Bridge House, the Environment Agency is unable to economically justify the purchase of the property.

4.4 Flooding of Household

Page 24 of the application states that there are no households within the additional area to be flooded. This conflicts with the Technical Note that the EA produced and gave to us. It states that their forecast is that Bridge House will flood to a depth of 1.4 metres. The Technical Note is at Appendix E

Environment Agency response to point 4.4:

Please refer to our response to 2.7 which explains our statement that there are no households within the additional area to be flooded as a result of the expansion.

The technical note that you refer to does show that your house may be affected by flooding of up to 1.4m. However, the technical note also shows that this water level is not further increased by the proposal to raise the maximum stored water level in the FSA. Bridge House is constructed in the floodplain of the River Medway and has always been susceptible to flooding. The Leigh FSA was constructed in 1982. The floodplain in this location was flooded on a number of occasions prior to the construction and operation of the Leigh FSA.

4.5 Flood Duration

On page 25 of the application the EA state that the enlarged FSA will only take one day longer to return to normal. This conflicts with the Technical Note the EA produced and sent to us, that states that it would be up to 8 days. The Technical note is at Appendix E

Environment Agency response to point 4.5:

Section 5.1.3 (page 25) of the Flood Risk Assessment submitted with the planning application gives greater detail on the change in duration of impoundment. In summary, out of approximately 3,000 scenarios modelled and analysed, the maximum additional duration of impoundment is predicted to be between 50-60 hours. However, the majority of events are for a shorter duration and the average is 19 additional hours.

Please note that these periods of time are for immediately upstream of the flow control structure. The duration at Penshurst will be less.

4.6 Solution for Bridge House

We decided that we had to find a solution to the future flooding. We employed an architect who submitted a planning application to demolish the lowest part of Bridge House and to abandon the ground floor, re-providing the same space lost with a raised extension to the rear, as well as raising the garage and driveway. This innovative and permanent solution would give Bridge House resilience to the worst case flood level that the EA had calculated. The EA supported this planning application and it was granted in April 2019.

Environment Agency response to point 4.6:

Noted.

4.7 Funding of Bridge House Solution

On 16th June 2020 the EA invited us to submit a proposal for them to make a contribution to the cost of implementing the above solution. The EA should have reached agreement with us before they submitted this application.

Environment Agency response to point 4.7:

You wish the Environment Agency to contribute to the cost of works that will make Bridge House resilient to future flood events.

Section 17(4) of the 1976 Act obliges the Environment Agency to compensate you where damage is sustained as a result of operation of the FSA. If the level of that compensation is not agreed then the matter can be referred to a court for

determination. The Environment Agency does not have to agree compensation before submitting the Revised Scheme to Defra.

Whilst we have started discussing with you the possibility of a supplemental agreement to fully and finally discharge this obligation to pay compensation under Section 17(4), these are separate discussions and will not prevent the Minister from determining the Revised Scheme.

5. Penshurst Village

5.1 Risk of Death

Rogues Hill is a major route into and through the Village. It is the route used by the Fire Brigade, Police and Ambulance Service responding to emergency calls. It is also used by school buses and village traffic. When the EA impound the FSA this road floods to a depth of up to 1 metre, making it impassable, yet vehicles still attempt to pass. Raising the level of the FSA can only increase this flooding. This would create a Moral Hazard, with the potential for death. The water flow is known to be in excess of 70 cubic metres per second and should a school bus attempt to go through the flood, it could easily be carried away downstream. This risk of multiple death is high. The EA have merely said that it is the responsibility of the Highways Agency. The Grenfell disaster has taught us that Moral Hazards can prove fatal years later for many innocent members of the public.

Environment Agency response to point 5.1:

As you state, Rogues Hill is a major route into and through the village. It is built on a causeway across the flat valley 200m downstream of the confluence of the Rivers Eden and Medway. Rogues Hill passes over the River Medway by Bridge House. The lowest part of Rogues Hill is particularly vulnerable to flooding.

The photograph below from a 1937 newspaper article (Figure 6) shows flooding on Rogues Hill. In 1968 the flooding at this location was so severe that the Rogues Hill road bridge over the River Medway was damaged to such an extent a temporary bridge had to be installed. These events show that Rogues Hill has historically experienced flooding and that it is not the operation of the Leigh FSA that causes flooding.

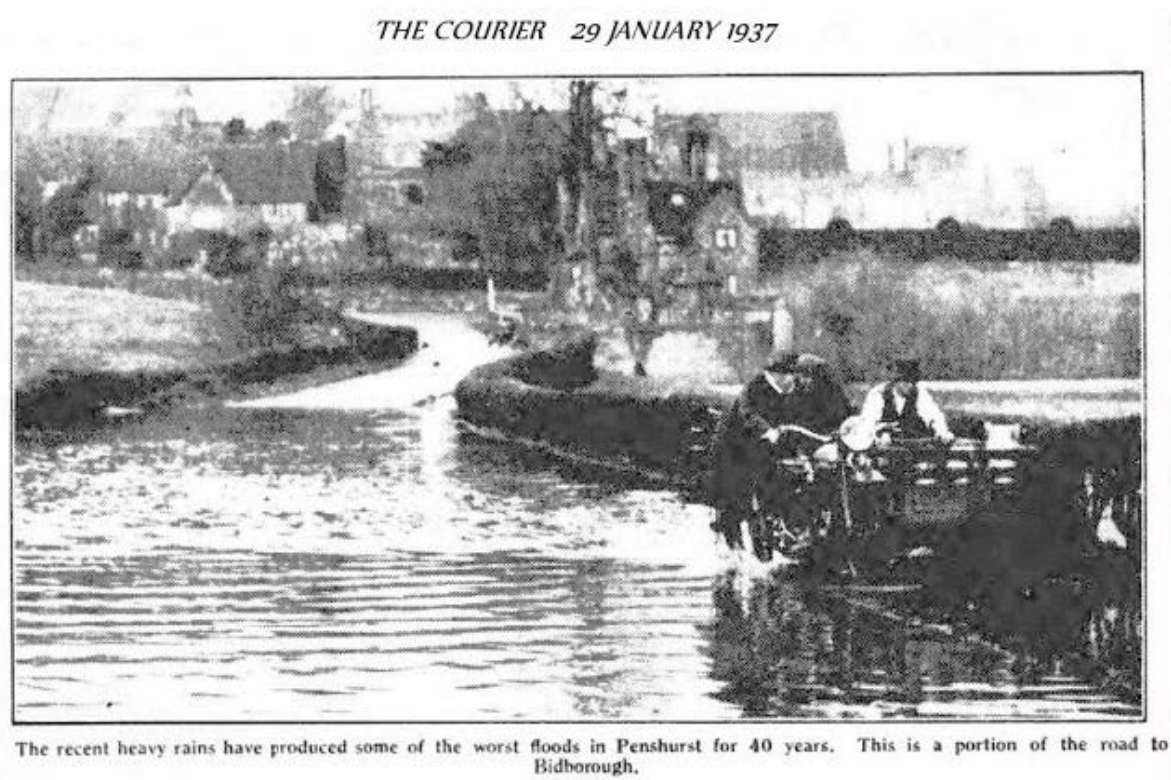


Figure 6: Flooding of Rogues Hill in 1937

In your representation you suggest that Rogues Hill floods to up to 1m deep as a result of the operation of the FSA. Whilst in certain circumstances the FSA can, when operating, add up to 0.1m to the depth of water at Rogues Hill, the depth and timing of the flooding of Rogues Hill is dictated by upstream flows.

This is shown by the photographs provided in response to 3.1. To further illustrate this, the peak of the most recent flood at Penshurst Gauging Station was at 01:30 on 17 February 2020 (see Figure 7 below) and the water level was falling before the water levels at the Leigh FSA were rising as water was stored (see Figure 8). Penshurst Gauging Station is situated on the River Eden about 2.8 km upstream of Rogues Hill, and so the peak of this flood will occur earlier at Penshurst Gauging Station than at Rogues Hill but it clearly demonstrates that the water level in the river is independent of the operation of the FSA.



Figure 7: Water levels at Penshurst gauging station 12 to 18 February 2020. Image from Shoothill Gauge map using data from Environment Agency gauging station

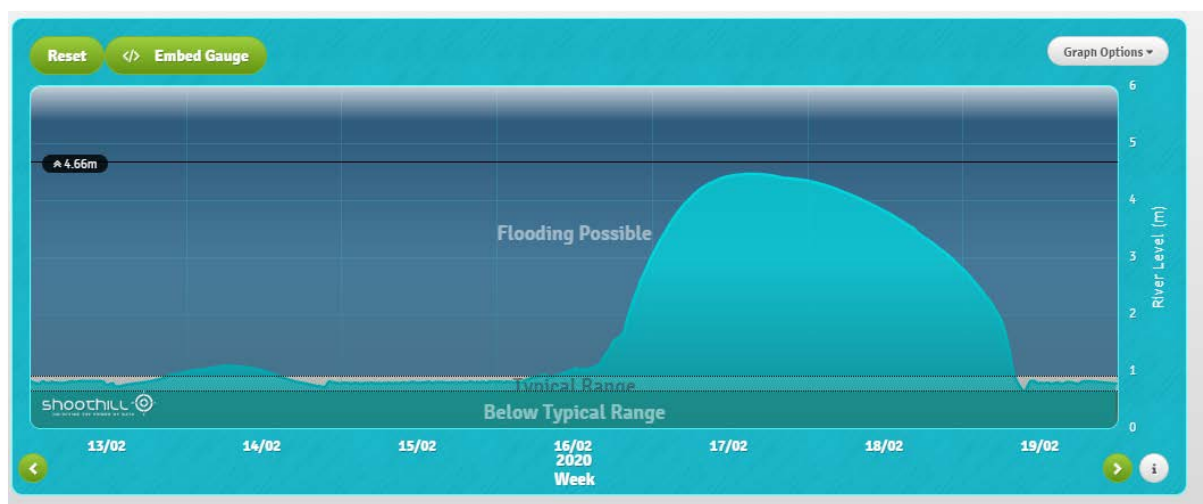


Figure 8: Water levels at Leigh Barrier upstream gauging station 13 to 19 February 2020. Image from Shoothill Gauge map using data from Environment Agency gauging station

For the reasons set out in 2.2 above, the proposed expansion does not increase the flood risk at Rogues Hill. Therefore, the proposed expansion does not exacerbate the present situation.

Whilst the expansion of the Leigh FSA will not increase the level of flooding experienced at Rogues Hill, we recognise the risks that arise through flooding of the roads around Penshurst. We always warn the public against driving through flood water. Flooding of these and other roads makes them dangerous, with the potential for drivers to try to pass through the floodwater at Rogues Hill and for cars to become stuck with the obvious risk to life this presents and the ongoing blockage to passage after the floodwaters have receded.

There are a number of organisations involved in managing and responding to flood risk. The Environment Agency has powers to manage flood risk from main rivers and Kent County Council provide and manage highway drainage and roadside ditches.

Other organisations and risk management authorities also have roles in managing and responding to flooding.

The risk of flooding in the natural floodplain cannot be eliminated. Warning and informing presents the only viable approach to the management of the risk to road users.

As noted in 3.10, we are offering to fund the National Flood Forum to help the local community to set up a flood action group where the concerns of the community can be raised with all of the organisations involved in managing flood risk so that ways to mitigate the impact and improve the resilience of the community to flooding can be explored together.

5.2 Disregard for Penshurst Estate Residents

When the Leigh FSA was built in 1982 the EA's predecessor identified the risk of access to properties on the Penshurst Estate, and paid for the construction of a concrete road to ensure safe access. The EA's proposal to raise the height of the FSA now places access via that same concrete road at risk. On Page 21 the EA deny this problem, but say there may be scope to help. This is typical of the condescending attitude throughout both communications and the application. They have failed to provide a solution to a problem of their creation. A problem that affects not just six residential properties and farm buildings but also a nursery school with many children in its care.

Environment Agency response to point 5.2:

This is a matter that has been raised by the Penshurst Place Estate and we are working to address it with them.

5.3 Disregard for High Street Properties

Flooding will affect properties on High Street. There are buildings used for warehousing, hobbies and garages to the rear of these properties. Increased flooding will cause damage to property and access problems. One of these properties also claimed compensation for flooding caused by the EA's impounding of the FSA in December 2013. Early in 2020 the EA admitted liability and paid compensation to the owner of the property.

Environment Agency response to point 5.3:

Section 4.2 (page 24 and 25) of the Application and our response to 2.2 explains the impact the proposed change to the flood water levels. This is also explained in greater detail in section 5.1 (pages 24 to 26) of the Flood Risk Assessment submitted with the planning application.

You will see that no change is expected to the extent of flooding or depth of water at the properties on the High Street, which like Bridge House are upstream of Rogues Hill, as a result of the proposal to increase the maximum stored water level.