

RM LR 03 Mr Findlay's representation in response to the Environment Agency's Application to vary the Scheme within the River Medway (Flood Relief) Act 1976

Environment Agency technical response, April 2021

Further to Mr Findlay's representation to Defra, the Environment Agency's response is below.

1. The Leigh FSA was established through the River Medway (Flood Relief) Act 1976. Inter alia, in Chapter xxii, with respect to flood relief, the Act states:

".... and in particular of the land in the parishes of Tonbridge and Hildenborough in the District of Tonbridge and Malling in the County of Kent and further downstream".

In the Act these areas are defined as "such land" and that the planned FSA could "substantially alleviate" flooding of "such land". In other words, the "further downstream" communities should be provided the same flooding protection from the FSA as Tonbridge and Hildenborough.

Environment Agency response:

These quotations from the 1976 Act have been taken from the second and third recitals to the River Medway (Flood Relief) Act 1976 (the 1976 Act). The second recital is part of the context for the 1976 Act setting out that after heavy rainfall there is flooding of land adjacent to the River Medway including Tonbridge and Hildenborough and further downstream. The third then goes on to say that the flooding of "such land" (i.e. Tonbridge, Hildenborough and "further downstream") could be alleviated by controlling the flow and storing flow.

As recitals, they do not place any obligation upon the Environment Agency and the 1976 Act does not place an obligation to protect the further downstream communities.

Section 17(1) of the 1976 Act states that the Environment Agency "may operate the sluice gates to control the flow of the river downstream of the control structure in such manner and for such periods as they think desirable or necessary..." This confirms the Environment Agency has a discretion in how it operates the Leigh FSA.

The Environment Agency is entitled to operate the Leigh FSA in such manner it considers fit to provide the greatest overall benefit in reducing flood risk to downstream communities.

2. The Operating Procedures applied by the EA operators in the December 2013 floods would not appear to have considered these requirements, the result being that the downstream communities suffered many more flooded properties than should have been the case.

The EA commissioned consultants (H.R. Wallingford) to review their actions during the 2013 floods. One of the Consultants conclusions(sections 4.6 and 4.7) was that if more optimal procedures had been followed the water levels in the Yalding area would have been 40 cms lower(see table 4.2) ; clearly this

would have resulted in significantly fewer properties being flooded. To date the EA have rejected the H R Wallingford suggestions on the grounds that to follow them would require perfect foreknowledge. This is not accepted.

Environment Agency response:

After the 2013/14 flooding, the Environment Agency commissioned HR Wallingford to undertake an independent review into the operation of the Leigh FSA over Christmas 2013 (HR Wallingford, 2015). The key conclusions of this report were:

- The Leigh FSA operational procedures were followed for all key decisions during the event.
- Without the Leigh FSA, flooding in the communities adjacent to the River Medway from Tonbridge to Maidstone would have been significantly greater.
- Operation did not cause or worsen flooding downstream.
- The operation of the Leigh FSA reduced the initial rate of rise in Tonbridge from that which would have otherwise have been experienced during the event with unrestricted flows.

This report also undertook post event analysis that identified a hypothetical, optimal operational scenario. With the benefit of hindsight, delaying the onset of impoundment by approximately 95 minutes, could have reduced flood levels in Tonbridge by 20cm.

However this optimal operation requires a perfect forecast; knowing exactly where and how much rain was going to fall over the catchment prior to the event. This information will never be available in reality, so implementing this optimal operating strategy would not have been possible. With that in mind, the report concluded that the operators developed *“an operational plan that achieved a substantial reduction of the peak discharge passed downstream”*.

3. From the EA's current Statement of Case it would appear that they intend to continue to be selective in addressing the objectives of the FSA; in essence they will ignore the needs of many of the downstream communities. They will continue to use the FSA to solely look after the needs of Tonbridge and Hildenborough.

Environment Agency response:

The 1976 Act specifically mentions operating the Leigh FSA to benefit 'in particular of the land in the parishes of Tonbridge and Hildenborough'. It also mentions areas 'further downstream' and this is recognised in Section 6.1 of the Leigh Operating Procedures, where it is stated that the Leigh FSA *“was built in 1982 to reduce the risk of flooding from the River Medway to properties and businesses in Tonbridge and Hildenborough”*. Further, the Operating Procedures note that communities downstream of Tonbridge will benefit from the operation of the Leigh FSA due to a reduction in peak flows in the River Medway.

The Leigh FSA Flood Risk Assessment of August 2020, drafted to accompany the Environment Agency's planning application, includes maps in Appendix E showing reductions in flood depths downstream of Tonbridge for the 1% (Appendix E1), 0.4% (Appendix E2) and 0.4% plus flows of 25% (Appendix E3) flood events, all of which show, as referenced by paragraphs 5.2.2 and 5.2.3, reductions in flood risk downstream, attributable to the FSA, beyond Tonbridge and Hildenborough as far as Yalding.

However, it must be noted that this benefit decreases proportionately the further you go downstream as other factors, such as flows from other tributaries, become more influential in determining local flood risk.

Successive reviews of operating procedures have highlighted that optimising the benefit of the FSA for Tonbridge requires us to impound at higher inflow rates to be able to reduce risk in high order flood events. Operating at lower flow rates where there is uncertainty in forecasts would risk using up capacity in the FSA too early in a flood so that there is less capacity available when higher flows come later on. Those higher flows would put Tonbridge and Hildenborough, and downstream communities at increased risk.

Equally if, following impounding, we were to reduce outflows from the FSA solely to reduce risk to communities downstream of Tonbridge, then it will take longer to restore the full capacity of the FSA. If we were to experience further heavy rainfall before the capacity is restored then the protection which the FSA provides, not only to Tonbridge but also to downstream communities, could be compromised.

Due to the influence of the Rivers Beult and Teise, not just the River Medway, we do not currently have the operational tools nor confidence in the forecast models to make decisions about how to operate the FSA to reduce risk in Yalding.