

Broadland Futures Initiative Virtual Village Hall Event 17.02.2021 – Summary of Question and Answer session.

Below is a summary of the questions received from the public for the Broadland Futures Initiative Virtual Village Hall event at 19:30pm on 17th February 2021.

Note: Questions and answers are paraphrased from those given verbally in the live event. For the full quoted responses from the event please view the published recording that will be made available to the public on the BFI webpage once the series of events has completed: <https://www.broads-authority.gov.uk/looking-after/climate-change/broadland-futures-initiative>

Q: There are a number of areas on the broads which are no longer dredged does this compound the flooding issues and has it been solely due to budget availability? Could river dredging be part of flood risk management?

The Broads are dredged in places for navigation purposes. Dredging across the whole of the Broads takes up roughly 60% of the Broads Authority's Construction team's time, so is a significant aspect of the work funded by toll payers.

In general dredging to reduce flood risk isn't the best long-term solution because rivers can quickly silt-up again and other measures such as building walls or storage upstream may be more effective. If undertaken incorrectly dredging can increase flood risk and erosion and alter the ecosystem and wildlife.

On much of the Broads dredging for flood risk purposes is unlikely to be effective as the system is tidally influenced. This means that dredging will not reduce peak flood levels in the event of a tidal surge because any additional channel volume created is insignificant compared to the volume of the North Sea i.e. the tide will still reach the same level. In fact, dredging could increase flood risk by increasing the amount of tidal water able to enter the Broads system and contribute to the erosion of river banks, due to an increase in water flow speeds.

Please watch our video on dredging in our virtual exhibition to find out more:

Q: Is data being collected of vessel movement and size between broadland rivers and the sea to help determine what provisions will be necessary? Will data be available to the public?

To date no data on vessel movements has been collected specifically for the BFI, but this is likely to be required in due course and we would do so in collaboration with the relevant navigation authorities and seek to ensure the information is publicly available.

The potential impact of a Yare flood barrier on navigation was a key consideration when last looked at in the 1990s. This related in particular to commercial navigation and especially for barrier locations either part way down or at the mouth of the Haven. Since then the outer harbour has been

constructed and also the Third River Crossing is due to start construction therefore these and other factors may change present day views about possible impacts.

With respect Broadland navigation the main concern previously was with the proposed Bure flood barrier and the possible impact on access between the northern and southern river systems. Assuming a Bure barrier will be revisited this time we will similarly need to know the number and nature of craft moving between the two systems.

Q: Will the BFI have enough influence to challenge future housing developments in the region to avoid collection of surface water and the subsequent impact to rivers and waterways.

The BFI will take into account existing and new plans that will emerge and impact upon the BFI plan area. This includes the National Planning Policy Framework, Planning Practice Guidance. This guidance states that new developments should not increase flood risk elsewhere and seek to mimic natural drainage as closely as possible. In addition, Norfolk County Council, (the lead local flood authority and BFI partner organisation) must be consulted on all major development planning applications and provides surface water advice to local planning authorities. Therefore, the BFI provides an opportunity to share a strategic approach to all sources of flood risk in the area, where partner organisations, including local planning authorities and the lead local flood authority, share a vision regarding the relationship between future development and flood risk.

The BFI is represented by a number of organisations each with their own plans and directives, therefore, through good communication, partnership working and sharing of knowledge we will ensure that these plans are taken into consideration when decisions are made. Our partner organisations are all keen to ensure their work is informed by the latest findings of the BFI. The BFI is pleased to endorse plans which support the aims of the BFI and help to deliver our objectives and aspirations.

Q: Is carbon reduction/absorption going to play a key role in choices and decisions on flood risk management in the area

Carbon is becoming an increasingly important factor in appraisal and decision making. Flood risk management can potentially affect carbon directly through the emissions arising from construction, operation and maintenance of structures. It can also affect carbon emissions and absorption (also termed sequestration) through influencing land use, and especially wetland habitats where carbon can become locked up and stored in peat or sediment.

The government has the target of the UK achieving net zero carbon emissions by 2050. In order to be in receipt of government funding potential flood risk management measures will need to demonstrate their implications for carbon emissions, on the principle that measures with low emissions or that encourage sequestration will be preferred. This would operate alongside the other long-established appraisal criteria that focus on the economic performance, technical feasibility and environmental impact of measures.

In addition to such government expectations, through the current stakeholder survey the public also have the opportunity to say whether they think minimising carbon emissions should be a key consideration within the BFI.

Q: Will LIDAR be used for data acquisition? If so will it involve any ground penetrating radar? Will the LIDAR/model information be made available for council/public use?

LiDAR (Light Detection and Ranging) is a useful remote sensing technique, carried out aerially, for measuring land levels. In flat areas such as Broadland LiDAR can achieve a good level of accuracy and represents excellent value for money. The aerial surveys are carried out in autumn and winter, gaining a more true representation of the land levels due to reduced vegetation cover. In East Anglia we have invested significantly in LiDAR data for a long time, therefore, we are experienced in utilising the outputs and have good confidence in this technique. Where LiDAR is not sufficient for any specific areas, we can hone our resources and potentially send out ground teams to complete a topographical survey, using traditional methods or drones.

All Environment Agency LiDAR data is free to use and download, although specialist software may be required. <https://data.gov.uk/dataset/f0db0249-f17b-4036-9e65-309148c97ce4/national-lidar-programme>

Q: Surlingham is subject to all the different types of flooding so our issues are complex, how will this be accounted for?

The BFI must consider all sources of flood risk, therefore, areas subject to complex flooding issues are particularly important to understand. On site investigations and flood modelling can help us understand complex flooding issues but one of the best forms of data capture is local knowledge and observations from our stakeholders. We ran a flood modelling survey recently and were pleased to receive lots of useful information. However, if you missed this survey or would like to send us additional information regarding flooding in your local area please do get in touch. Our flood models require calibration and verification using real life observations to improve their accuracy, so this information is always useful.

Q: What will be the difference between your new model and the BESL model used for the Broads Flood Alleviation Project, and will the model cover the whole of the BFI area?

The existing BESL model originates from the early 2000s and was constructed and has been maintained primarily to support the on-going maintenance of the Broadland flood embankments. Some of the data used to represent the river cross sections and the floodplain topography within the model is similarly nearly 20 years old. There have been some updates and revisions over the years but following a review of the different options for modelling for the BFI a more thorough rebuild is now planned.

To construct the new model the latest data for channel cross sections and floodplain topography will be used (new surveys may also be required following a more in-depth review). The geographical extent of the model will be expanded into a number of the tributaries to the main river system. Particular locations for improvement in how they are represented within the model are the upper Thurne and the Trinity Broads. The hydrological boundaries of the model will be updated to reflect current best practice and any change in the pumping regime.

The opportunity is also being taken to develop a Broadland model that can be used for wider purposes than just the BFI, in particular by the Environment Agency in its flood risk management regulatory role. This should ensure there is a consistent approach taken at both strategic and scheme specific levels.

Q: What were the objections to a tidal barrier when it was last proposed?

The first flood barrier locations considered previously in the 1990s was on the Yare just upstream of the Haven Bridge which would protect all of Broadland. The alternative second location was on the Bure just before it joins the Yare. Such a Bure barrier would only safeguard the Bure river system and so was proposed to be implemented together with a washland (a large flood water storage area) to protect the Yare and Waveney systems. Both barriers were expected to operate approximately 6 time per year. In both cases in order to provide flood protection against river levels that would not trigger barrier closure, the existing network of riverside flood embankment were required to be raised and strengthened.

Barriers generally have a potential range of positive and negative impacts depending upon their location, mode and frequency of operation. For the proposed Yare barrier, despite its location in the upper Haven there was concern from the port about the effect on navigation when closed, and on the hydraulic and sediment regime in the Haven. For the Bure barrier a key concern was that the potential interference to navigation would deter boats moving between the northern and southern river systems and so affect hire boat trade.

However, the principle challenge for both barriers was their high construction cost and the fact that the majority of flood reduction benefits come from the raising and strengthening of the river embankments that prevent much of Broadland being permanently inundated. The flood protection benefit provided by a barrier over and above the embankments was relatively small compared with the cost and ultimately could not be justified.