Response to Questions Raised – Severn Stoke Flood Alleviation Scheme

Virtual Meeting Held 18/06/2020

Attendees: John Shaughnessy, Mike Adams, Andy Barlow - Environment Agency, Stephen Watkins, Pip Webster - Savills, Robert Parry - G Herbert Banks

1. Why no outlet for water from the middle of the village?

Whilst this is admittedly not clear on the general arrangement drawing, provision for drainage through the embankment will be made where required. Currently it is proposed that this will include an outlet for water in the middle of the village and from the field to the south of the church. Should there be other drainage points that have not been picked up, we would be happy to work with you to establish the best way of managing these through the detailed design process.

2. Where have you got your height data from?

With regards to ground levels across the site, these are based on topographic survey undertaken across the footprint of the proposed works. This data is supplemented with Light Detection and Ranging (LiDAR) data, collected for the wider flood plain. Flood levels have been determined utilizing a mixture of hydraulic computer modelling and actual gauge records from previous flood events.

3. What height do you have for the 2007, 2020 floods in Severn Stoke?

The recorded level, taken from the Severn Stoke gauge during the 2007 flood event was 13.96 mAOD. Unfortunately, the Severn Stoke gauge is no longer operational, but analysis of the 2020 gauge records from upstream and downstream of Severn Stoke demonstrate very similar levels to those recorded in 2007. At the Kempsey gauge (upstream) the recorded flood level was within 1mm of the 2007 event, with the Saxons Lode gauge (downstream) showing levels 400mm lower than those recorded during the 2007 flood event.

4. Who chose the 14.2m AOD and why?

The 14.2 mAOD level has been determined based on the above gauge records and the hydraulic computer model, calibrated and verified against historic recorded levels. The scheme has been designed to reduce flood risk up to and including a flood event with a

1% chance of occurring in any given year (I.e. a 1 in 100-year return period event). It is acknowledged that in flood events larger than this, there is a risk that the structure could be overtopped. Whilst there may be an opportunity to make modest changes to the embankment elevation during the detailed design works, we will be limited in the extent of raising that will be permitted in planning terms when considering the wider setting. Based on the information received to date, the level chosen would have been enough to prevent significant flooding during each of the flood events that Severn Stoke has experienced to date.

5. Who chose the 1:5 slope and why?

The 1 in 5 slopes chosen on the "wet side" of the embankment are reflective of the current Environment Agency requirements for flood defence embankment design. This slope ensures that standard maintenance requirements can be met without the need for bespoke machinery. Throughout the detailed design process, the detail regarding slope profiles and how these are landscaped into the existing topography will be determined. In addition, an assessment will be undertaken with regards to any additional protective measures that may be required to manage excessive velocities during flood conditions.

6. What is the EA's understanding of the stand off from the oil pipeline?

We are in close communication with the oil pipeline company to refine our understanding of the location of the pipe, ensuring that minimum set backs are adhered to during the detailed design process. This will likely require some initial trial trenching to locate the exact alignment of the pipe and, if required, a potential alteration to the detail of the alignment should conflicts be identified.

7. What is the rational for the positioning of the bund south of the church?

The bund has been positioned to ensure that the risk of surface water flooding to the A38 and adjacent properties can be appropriately managed, that the impact on the setting of the church is reduced and that existing services are considered.

8. Where is the emergency pump going to go there is no point indicating a sump?

During the detailed design phase, a mitigation strategy will be developed outlining the requirements associated with exceedance events (I.e. where the system and scheme becomes overwhelmed). As part of this work, potential mitigation measures (and their associated locations) will be determined. This will include provision for the placement of a temporary pump.

9. Where is the location for the mitigation measures?

See above. With regards to environmental mitigation measures, we would welcome local input to help determine where these might be most appropriate. We are not constrained to the red line boundary and, as such, have some flexibility in the way that these measures are implemented.

10. Who is choosing the seed mixtures?

Landscaping and seed mixtures will be determined during the detailed design, with it being an absolute requirement that the mixture is robust enough to withstand future flood events. As with other elements of the detail, we will work closely with landowners, tenants and the community to ensure that considerations such as this are appropriately dealt with.

11. Who is paying the tenants compensation?

All parties will be entitled to claim compensation for any loss or injury sustained as a result of our works. These are set under the provisions in Schedules 20 and 21 of the Water Resources Act 1991.

12. What happens to the ownership and maintenance of the structure when SSCIC is wound up? They will get fed up with fundraising to cover the cost as it seems there is no covenants on the properties that are being protected.

A maintenance plan will be developed by the detailed designers outlining future requirements. This will then form the basis of a memorandum of understanding between the EA and the SSCIC. Whilst maintenance budgets are determined annually, it is very likely that the EA would take on maintenance for the flood defence scheme if the SSCIC were unable to. The EAs Estates Lead is liaising with the land agent to ensure that no liabilities are transferred to either the landowner or tenant.

13. Computer modeling has not worked for the raising of the A4104 now a couple of properties that have never flooded do now.

Whilst we can't comment on the specifics of the example raised, the outline design produced to date for this scheme has been based on a whole variety of information, including local anecdotal reports and actual gauged records of previous events. We will develop the detail for the scheme during the detailed design phase and would appreciate any constructive input to ensure that that process is as informed as possible.