

EPR Flood Risk Meanings

(e) any activity which is likely to divert the direction of the flow of water into or out of a main river or alter the level of water in a main river;

All three fish exclusion barriers fall under flood risk meaning (e) detailed above. Please see points below, which confirm that flood risk meaning (e) applies to these proposals:

1. From simple Logic on rivers and drainage channels it is clear that if you have a channel that water flows through and you block that channel either fully or partially it will change (divert) how water flows through that channel. This will lead to water finding other flow routes, either over land or through other river and drainage channels.
2. Section 6.2.1 of the flood modelling report referenced “Hoveton_Restoration_Modelling_Investigations_JACOBS_April2019”, states the following for Tidal Flooding: *“The model results show that peak tidal levels are unaffected by blockage of the channels as there is negligible flow through the channels. Prior to the main tidal event, **blockage of the channel results in increased flows (positive and reverse) over the banktops**”.*
3. Section 6.3.1 of the flood modelling report referenced “Hoveton_Restoration_Modelling_Investigations_JACOBS_April2019”, states the following for Fluvial Flooding: *“The model results show that peak tidal levels are unaffected by blockage of the channels as there is negligible flow through the channels. Prior to the main tidal event, **blockage of the channel results in increased flows (positive and reverse) over the banktops**”.*

These statements confirm that the barriers divert the direction of flow of water into or out of a main river, resulting in flows diverting over the banktops instead of through the channel. We note the statement on Section 6.3.1 references “tidal” and should instead state fluvial.

(f) any activity within 8 metres of a non-tidal main river (or within 8 metres of any flood defence structure or culvert on that river) or any activity within 16 metres of a tidal main river (or within 16 metres of any flood defence structure or culvert on that river) which is likely to—

- (i) cause damage to or endanger the stability of the banks of that river or of any culvert,***
- (ii) cause damage to any river control works,***
- (iii) alter, reconstruct, discontinue or remove any river control works,***
- (iv) divert or obstruct flood waters or affect the drainage of that river, or***
- (v) interfere with the regulator’s access to or along that river;***

Two of the proposed fish exclusion barriers located at The Dam & Foxborrow Dyke fall under flood risk meaning (f) detailed above, as they are within 16 metres of the Tidal Main River Bure and fall within point (iv) as the structures are likely to divert or obstruct flood waters or affect the drainage of that river.

Flood Risk Impacts

The applicant has undertaken hydraulic modelling to assess the flood risk posed by the scheme. The Flood risk modelling and report submitted with this permit application are the same as those E&R have reviewed previously on 17/02/2020 and in follow on review dated the 17/04/2020.

As the modelling submitted with this permit application are the same the E&R review comments from the follow on review dated the 17/04/2020 are still applicable. This modelling has been reviewed by our Evidence and Risk teams (E&R) and assessed as suitable for use in planning and permitting purposes.

The E&R review resulted in a few comments for the PSO team to determine. PSO agreed Hydraulic model flood events that were to be modelled in scoping document. We are satisfied that the modelling undertaken on flood events allows us to assess flood risk adequately. We are satisfied to approve the modelling as suitable and that no further work on Action B-32 is required.

There are two communities (Horning and Wroxham) that are at risk of flooding close to these proposed works. It shows no significant change in flood risk in either Horning or Wroxham.

The model shows that at the peak of the modelled flood events there is negligible change in flood level. This is a result of the barriers being designed to tie in with the top of the bank. As such when the flood events modelled overtop the top of the river bank, floodwater can access Hoveton Great Broad in a similar way to how it currently does.

As highlighted in the applicant's model report (Sections 6.2.1 and 6.3.1) there are changes in the flow of water as a result of these barriers, in both the fluvial and tidal flood events. These changes in flow happen prior to the peak of the flood event. These changes indicate that blocking the channels that water can currently flow through, results in it being diverted either over land or through other river and drainage channels.

It is my expert opinion that these changes in flow are likely to have an impact on flows of drainage, as well as where floodwater flows during a flood event. This is based on the modelling report finding these changes in flow, prior to the peak of the flood events. Whilst there are changes to flow prior to the peak of the flood event, as floodwater can still access HGB by overland flows, the flood level is not significantly impacted.