Oxford Flood Alliance

Planning Application 15/03703/FUL

Comments on the revised FRA (revision AO1, February 2016)

We have read the revised FRA carefully but find it does not answer any of the questions raised in our email of 26 February 2016. These issues need to be clarified and until they are we cannot support the planning application.

While the points raised previously remain unanswered, here we highlight particularly some points arising from the revised FRA. Time has been short for us to prepare this response in time for your internal meeting on 10 March; when we have had time to consider further we may write again.

All references below are to the revised FRA (AO1) unless stated otherwise.

Key points

1) Table 4 - as we've pointed out previously if there is 0.38m of flooding on the track at baseline, and 0.11m after raising the track by 0.40m*, the new flood depth being shown is 0.51m. This is a difference in flood level of 0.13m compared to baseline. The current 'differences' shown in the table compare data sets which start from a different base point. It's not clear what these 'differences' are supposed to represent, and no explanation is given in the report.

* This is taken from para 5.2.2. We appreciate that the amount by which the track would be raised is not the same all along, but this information is not supplied.

2) The increased flood depth of 0.13m deriving from Table 4 appears to be inconsistent with data in Table 5. How can an increase in flood depth west of the railway of 0.02m result in flood depths on the raised track of 0.11m? An explanation may lie in the fact that the flood depths east and west of the railway are taken at locations away from the track and cannot therefore be compared directly with levels on the track. Because the levels are not provided in AOD direct comparison cannot be made. The difference in flood depth west of

the railway and on the track seems very large given the short distance between the locations for which readings are given. The report provides insufficient information for the reader to be able to understand these differences and satisfy themselves that the data is consistent.

3) As previously mentioned, the flood maps provided do not help as the deepest level shown is >1m, and the levels we are concerned with here are all over 1m.

4) Para 6.1 says there is no appreciable difference east and west of the railway for a 1 in 5 event after the track is raised. This is surprising as water previously flowed across the track [see Appendix B, Figure 1 on p. 1] but is now dammed up on the west. We would expect flood depths to the west to increase and to the east to decrease for a 1 in 5 event. This result of the modelling is not explained. If water is not building up to the west of the raised track where is it going?

5) If the raised track only just starts to flood in a 1 in 20 event [see Appendix D, Figure 2 on p. 2] the building of a new culvert will mean the track will only be overtopped during a larger flood event. If this is the scenario it is critical that we understand what the consequences for properties west of the railways would be, including for houses in Kennington. We need to understand at what level the track is flooded: flood return periods between 1 in 20 and 1 in 75 (say 1 in 30 and 1 in 50) should be modelled and the results included in the FRA.

6) The modelling was done for a culvert 1.5m deep and an invert level of AOD 54.125m. In 5.6 para 4 it says this invert level is 'beneath the existing ground water level'. Section 9 describes a sensitivity analysis to compare the effect of larger culverts (3.6m x 1.8m) against the modelled design. This assumes having the two larger culverts in place but using orifice plates to restrict flow. The first of the scenarios modelled is with the invert at AOD 53.740. This is below the level used earlier in the modelling which the report says is already beneath the existing ground water level. The larger culvert is 0.3m deeper than the culvert modelled. Is the invert level for the larger culvert AOD 53.740? No technical drawings are provided giving AOD values for culvert invert, soffit and track level. It is therefore not possible for the reader to satisfy themselves that the proposed culverts can be accommodated.

7) It is unclear how groundwater levels affect the conveyance capacity of the culvert. The correspondence between the planning officer and NR is relevant here - see points 3 & 12 in *Responses to the Flood Risk and Drainage items raised by Local Planning Authority (LPA),* recent but not dated.
NR seem to argue that though the culvert will have water in it in normal conditions this doesn't affect its carrying capacity and the groundwater levels are built into the modelling. But the sensitivity modelling in section 9 suggests that the option with the lower invert level gave a result which was less consistent with the earlier modelled results than the second option. This may indicate that the invert level and therefore the level of groundwater in the culvert does have some effect. It is not clear from the FRA or NR's responses to the planning officer what assumptions have been made about groundwater levels in the modelling or how these were derived.

8) In point 10 in the same document, *Responses to the Flood Risk and Drainage items raised by Local Planning Authority (LPA),* Network Rail says 'The industry standard procedure is to assess watercourses on the basis that they are clear of vegetation, debris and are free flowing'. As we said previously this was not stated in the first version of the FRA, nor is it now stated in the revised version, so is not in the public domain - we believe it should be - not least for the very good reason that while it may be 'industry standard', it does not reflect the reality on the ground - some of the watercourses and culverts in the immediate area are far from clear of vegetation, debris and free flowing (we can provide you with photographic evidence if you would like). This calls into serious question the validity of the model.

9) The FRA refers the reader to the GRIP3 report in several places. As far as we know this has not been updated. Our previous queries on GRIP3 stand.
On the conflict between AOD levels provided in Appendix 3 for the raised track level and the dimensions of the larger culvert we now wonder (looking at Section 9 of the new FRA) whether the larger culvert has an upstream invert level of 53.740m AOD rather than 54.125m AOD. Is that the case?

10) Photographic evidence of the July 2007 flood suggests that the Hinksey sidings were not flooded on 25 July, the peak day. Yet the model suggests that they are flooded at a 1 in 20 event. In Responses to the Flood Risk and Drainage items raised by Local Planning

Authority (LPA), page 4, point 8, it is said that the July 2007 flood was 'between a 1 in 50 and 1 in 100 year event'. The model, then, does not appear to match reality.

11) Because of the above discrepancies and uncertainties it is not possible in our view to have confidence that risk to property is mitigated.

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9 March 2016, revised - point 10 was initially omitted in error and added at 14:53 the same day.