

The Planning Inspectorate
Major Applications and Plans
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Our ref: KT/2024/131819/01-L01
20035862
Your ref: TR020005
Date: 15 July 2024

Dear Planning Inspectorate Team

**Gatwick Airport Northern Runway Development Consent Order Application –
Deadline 7 - Environment Agency comments on further submissions by
Deadline 6**

We have reviewed the submissions and have the following comments to make.

**Environmental Statement: Chapter 5 Project Description Version 5 dated June
2024.**

As part of the fluvial mitigation strategy, syphons to ensure floodplain connectivity and maintain flood flow routes have been proposed. These features are necessary to ensure flood risk elsewhere is not increased due to the proposed works.

Under the heading of Water Management Works starting from section 5.2.161, mention is made of elements such as the Museum Field flood compensation area and Car Park X. These elements are also shown on Figure 5.2.1e Project Description Figures Document Ref 5.2 June 2024.

Section 5.2.93 of the Project Description Version 5 document discusses the Western noise mitigation bund. Starting from section 5.2.27, works to various taxiways are discussed. Section 5.2.153 discusses the Active Travel Improvements associated with the Longbridge Roundabout works (starting from section 5.2.144).

From reviewing the content of both the Flood Risk Assessment (Document Ref 5.2 ES Appendix 11.9.6) and the Flood Compensation Delivery Plan Technical Note (Application ref 10.42, June 2024), syphons to maintain floodplain connectivity and flood flows are referenced. However, the absence of reference to the flood mitigation syphon features in both the project description and supporting figures, especially Figure 5.2.1e, does not make it fully clear whether these features are to be provided. It is clear these features are necessary to ensure flood risk elsewhere is not increased because of the proposed works.

Section 5.2.164 mentions the protection of Substation L from flooding. It is unclear whether this relates to fluvial or surface water flooding, what the works would consist of and when they would be carried out in relation to the overall project. It is also

unclear whether floodplain compensation for these works would be necessary. It would be helpful if the applicant was able to offer more information on this aspect.

Section 5.2.187 discusses the installation of a 200mm high weir and fish pass to improve fish passage through the existing River Mole culvert. However, in section 7.2.12 of the Flood Risk Assessment it is stated this weir is to be 300mm in height.

We will request the applicant confirms the height of the proposed weir at this location.

**Flood Compensation Delivery Plan Technical Note: Document Reference 10.42
Version 1.0 June 2024.**

This document seeks to set the scene for a future, more detailed document to detail the timings of construction of the fluvial floodplain mitigation works and ensure those works elements which impact on the floodplain are fully mitigated, so flood risk is not increased elsewhere throughout any stage of the proposed project, as well as on completion of the overall proposed project. Essentially, this Technical Note aims to set out the context and scope of the Flood Compensation Delivery Plan (FCDP).

We are supportive of the need for the FCDP, and it should be ensured an FCDP that is considered a living document subject to updates as required by the applicant is a requirement of the DCO.

Section 1.2.2 sets out the three specific works proposed to mitigate the impacts on the fluvial floodplain, namely:

- Work No. 31(b) and (c) constructing a flood compensation area at Car Park X
- Work No. 38(a) constructing a flood compensation area at the Museum Field Environmental Mitigation Area; and
- Work No. 39(a) - (c) and (e) works to divert and extend the course of the River Mole.

The Work Nos correspond to those listed within the draft DCO. As mentioned in our comments on the Project Description Version 5 document and supporting figures, syphons at the western noise bund, within taxiways and as part of the active travel route at Longbridge Roundabout are also required to maintain floodplain connectivity and flow routes. Our previous comments on the draft DCO also highlighted the syphons appear to be omitted from Work descriptions. Although these syphons are mentioned in section 3.3.7 with the suggestion they will be secured through the Design Principles, for completeness and to ensure delivery, we suggest the syphons should be mentioned within Section 1.2.2.

Section 1.2.6 suggests there may be opportunities to bring forward works prior to all the flood mitigation works being delivered. This is not our favoured approach though it is noted the applicant is committed to demonstrating there will be no negative impact on flood risk should this approach be proposed.

Section 3.3.3. discusses the extension of the South Terminal IDL and that this would be raised on stilts. Although the use of stilts would minimise the impact on storage capacity within the fluvial floodplain, we would ask the applicant to offer further information on the overall footprint of the stilts and the potential for floodplain loss as a result.

Section 3.3.4 discusses ecological planting, landscaping and access works at Museum Field (Work Nos 38b – f), landscaping and surface access improvements at Car Park X (Work Nos 31a, d-f) and ecological measures at the River Mole (Work No 39f). It is noted that these works should not require land raising and due to the sequence of overall Work Nos 31, 38 and 39, the fluvial mitigation measures (Work Nos 31b-c, 38a and 39a-e) would be delivered first. This should be clearly agreed as part of the development of the FCDP and the overall DCO.

It is noted that Work Nos 38e-f are for the construction of a footbridge and two farm access bridges as part of the Museum Field works. These bridges should be designed not to restrict flood flows, so careful consideration would need to be given to the soffit heights of these structures for example to clearly demonstrate they will not restrict flood flows.

Section 3.3.5 mentions the provisions of a weir and fish pass (Work No 42). Although these works would not require land raising or increase impermeable area, the placement of structures within a watercourse has the potential to increase flood risk. Is the applicant able to confirm these structures have been considered within the Flood Risk Assessment (FRA) where it is demonstrated their presence does not lead to an increase in flood risk, and whether it is possible for the weir and fish pass to be put in place prior to fluvial mitigation being fully delivered.

Is the applicant able to offer a figure for what the increase in impermeable area associated with the footbridge footings northeast of Longbridge Roundabout would be?

Section 3.3.7 discusses the syphons or flood relief culverts required to maintain floodplain connectivity and flow routes. Although these features are to be secured through Design Principles, as mentioned above, we would suggest they are also listed in Section 1.2.2. of this report and it feels prudent for them to be specifically listed under the relevant Works No within the Draft DCO. It is suggested in the FCDP that Requirement 10 of the draft DCO (surface and foul water drainage) should

secure the delivery of the syphons, however as Requirement 10 is around surface and foul drainage, it should be made clear the syphons relate to fluvial flood risk and therefore specific mention of the syphons should be made elsewhere in the Draft DCO, as mentioned above.

Section 3.3.10 list works which are suggested can take place prior to the fluvial mitigation works being delivered without increasing flood risk to other parties during the construction phase. Flood risk on-site will be increased in place because of these works. The applicant should ensure there are measures in place to suitably manage this risk.

Section 3.4 sets out the works that require the fluvial mitigation to be in place prior to their construction. We welcome DCO Requirement 23 which ensures a FCDP must be submitted to and approved prior to any of the Work Nos set out in Section 3.4.1 commencing, as well as setting out the sequencing of the fluvial mitigation works in relation to the overall project. Our comments above around further information on other Work Nos should be fully considered as additional Work Nos may need to be added to Section 3.4.1.

Section 4.1.3 notes the FCDP relates to fluvial risk only, with the mitigation of surface water flood risk being secured through Parameter Plans and Design Principles. Although fluvial and surface water flood risk do have differences, the two sources of risk are also related and can influence the other source of flood risk, especially on and adjacent to the development site. Setting out how the surface water risk may be better summarised within a similar document to the FCDP for fluvial risk, with the FCDP recognising the linkages between fluvial and surface water risk. An Integrated Catchment Model (ICM) has also been prepared for this project and the outputs from that modelling could be considered as part of the FCDP as this would help demonstrate linkages between the two forms of flooding.

Sections 4.2, 4.3 and 4.4 contain information available at this stage of the project for the Flood Compensation Areas (FCAs), with reference made to additional details added at detailed design. This information will need to be updated to ensure the latest and most detailed information is contained within the FCDP, this requirement for the FCDP to be a living document should be secured through the DCO, for example being included as suggested within Requirement 23. The sequencing of the works would also need to be added which would clearly set out which elements are linked to the delivery of others. For example, the details around Car Park X in Section 4.3 highlight that peak flows would increase downstream of this structure and therefore the Museum Field FCA would need to be in situ and functional prior to Car Park X being used for fluvial mitigation, otherwise flood risk downstream would be increased.

Table 5.1 is helpful in setting out the Work Nos, whether they are in the floodplain and whether it is considered mitigation needs to be provided prior to their construction. Two Figures are also included, 1.1 and 1.2, which are also helpful in depicting the extent of the 1 in 100-year + 16% modelled floodplain extent and the location of various works. If Table 5.1 could be colour coded depending on the category of the works (in/out of floodplain, mitigation measure, mitigation required or not) it would help to make this Table easier to understand. In addition, if this colour coding could also be used on an additional map that showed the various works with their associated Work Nos as set out in the draft DCO and used within the FCDP Technical Note, it would again make the FCDP easier to understand.

The Technical Note for the FCDP sets out the principle of what this document contains and what it will be used to demonstrate. It is clear the FCDP is a necessary document for this project and should be secured as a living document as part of the DCO process.

Environmental Statement Appendix 11.9.6: Flood Risk Assessment – Annex 7 – Culvert Assessment – Version 1.0 June 2024

Although this Technical Note has been created to address concerns raised by National Highways, three structures related to main rivers are named in this assessment and will be impacted by the proposed works, namely:

- A23 Airport Way Crossing Gatwick Stream (Culvert [EX-CU3])
- A23 London Road Bridge crossing River Mole [(LDN-BR)]
- Brighton Road Bridge crossing River Mole [(BTN-BR)]

Section 3.1.2 states that the three above structures were not included within the hydraulic assessment for culvert sizing as this was not specially stated as an action by National Highways, the applicant also suggests these structures have been considered within the hydraulic model for the Upper Mole catchment. All three of the structure on main river are significant structures and any amendments to their current design should fully take the risk to flooding into account to ensure that flood risk is not increased as a result.

The Flood Risk Assessment section 7.3.32 and Table 7.2.2. make general reference to these three structures on main river and suggest no further assessment is required as the risk to flooding is deemed to be small.

In Annex 7, the nature of any works to EX-CU3 should be clarified. In Table 4.1 it is suggested this culvert is 'existing to be extended' but in Table 2.1 the works are that it remains 'unchanged'.

The blockage assessment set out in Table 4.1 does highlight that all three structures on main river are considered to have a medium blockage risk after following Steps 5 and 6 of the Environment Agency (2019) Blockage Management Guide. This would prompt further work to be carried out to further assess and address the potential blockage risk, as at all three locations, blockage would likely result in flooding to a range of assets. It is noted the applicant states further work will be undertaken at the detailed design stage, though as there is a hydraulic model available that includes structures EX-CU3, LDN-BR and BTN-BR it should be possible to add greater detail around the risks, impacts and mitigation of flood risk associated with these works.

Appendix 11.9.6: Flood Risk Assessment Version 3.0 June 2024 Application Ref 5.3

The Flood Risk Assessment (FRA) has been updated with an additional Appendix, No. 7, added and further details added on several areas, especially within the Executive Summary. The additions to the Executive Summary provide information and signposting on major aspects relating to flood risk and the proposed development, the addition of this information at the start of the FRA is welcomed.

For example, paragraphs 0.1.10 to 0.1.14 set out information around the adopted design life of the airfield and surface access elements. It is noted that reference is made to the flood mitigation strategy being developed to incorporate all project elements for a 100-year design life.

Paragraphs 0.1.19 and 0.1.20 discuss the consideration of climate change impacts for the 100-year design life of the project beyond the end of the 2080's epoch. The applicant suggests that using the Credible Maximum Scenario (CMS) to consider the additional 7 years between the end of the 2080's epoch (given as 2125) and the end of the 100-year design life of the project (2132) and comparing this to the design flood event as a way of assessing potential climate change impacts up to 2132. Essentially, this would see the use of the 40% uplift for peak river flows to consider the impact for the additional 7 years against the design event which utilises a 20% uplift when considering climate change.

The approach to use the 40% uplift as a proxy and make an extrapolation using the Upper End climate change allowance for the 7 years beyond 2125 would suggest the risk to fluvial flooding would still be manageable for that timeframe with the proposed fluvial mitigation measures in place and fully functional. This could be seen as a reasonable proxy for longer term impacts of climate change on peak river flows. However, the applicant may wish to assess the potential climate change impacts by extrapolating the higher central allowance, 20% climate change, for those additional 7 years, or further if desired. We would not suggest a specific extrapolation methodology, this would be for the applicant to decide and to share with us for comment.

Section 7 of the FRA contains information around the flood mitigation features to be included, with signposting given to ES Appendix 11.9.6: Annex 5 for some further outline details on the proposed Flood Compensation Areas (FCAs) at Museum Field and Car Park X. It is noted that the presence of the FCA at Car Park X appears to increase peak flows downstream of this FCA. It is suggested the presence of the Museum Field FCA further downstream would capture this increase in flows so overall, the flood risk elsewhere would not be increased. It would be helpful to understand more about why the flows downstream would be subject to increase with the Car Park X FCA in place, and whether any measures can be incorporated into the design of the FCA at Car Park X to negate the suggested increase in flows. This also highlights the need to ensure the correct sequencing of any construction works and the delivery of the flood mitigation measures to demonstrate that the risk to flooding would not be increased at any time during the project.

The FRA should also consider whether the introduction of the FCAs on the River Mole would result in any impact on flood peaks travelling further down the River Mole, especially after the confluence of the River Mole and the Gatwick Stream. As water will be attenuated in both Car Park X and Museum Field, is there likely to be any impact on the coincidence and timing of flood peaks from the Gatwick Stream and River Mole as they travel further along the River Mole downstream of the Airport?

Table 7.2.2 refers to the three structures on main river that are considered under the access elements of the project. Please see our comments on Annex 7, as these are related to this section of the FRA.

Paragraphs 7.2.41 to 7.2.46 discusses the impacts on flood risk due to defence failures. The applicant should confirm if the failure of the proposed FCAs been considered and whether this has been considered in the Flood Resilience Statement in Appendix 11.9.6 Annex 6. It would be helpful to understand which structures have been included in the assessment of defence failure for completeness.

Section 7.5 sets out information on the flood risk during construction. Between 2029 and 2032, all the mitigation measures for fluvial flood risk would be completed though there are works which may result in a more localised risk to flooding, mainly associated with the highways improvements. Temporary compounds for Longbridge Roundabout and at Car Park B would be located within areas at risk to fluvial flooding and the design of these compounds should not lead to any increase in flood risk. The methodology around the use of a floating barge and how the risk to flooding would be managed with that in situ would need to be fully considered. The Flood Compensation Delivery Plan should include information about these elements for completeness.

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If you require any further information, please do not hesitate to contact me.

Yours sincerely

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