



Gatwick Airport Northern Runway Project

Response to the Examining Authority's Written Questions (ExQ1) – Water Environment

Book 10

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Table of Contents

1	Response to the Examining Authority's Written Questions – Water	2
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1 Response to the Examining Authority’s Written Questions – Water Environment

1.1.1 The below table sets out the Applicant’s response to the Examining Authority’s Written Questions relating to the water environment.

ExQ1	Question to:	Question:
WE.1.1	The Applicant	<p>ES Chapter 4 Existing Site and Operation</p> <p>Paragraph 4.2.31 of ES Chapter 4 [APP-029] references Ponds A, D to H, Pond M and Dog Kennel Pond. No reference is made to Ponds B or C in the text or on Figures 4.2.1c or 11.6.1.</p> <p>Clarify the location of Ponds B and C.</p> <p>Ponds B and C were located to the east of Pond A but have not existed for some time and so are not existing environmental features and therefore are not referenced in the referenced figure or in ES Chapter 4: Existing Site and Operations.</p>
WE.1.2	The Applicant	<p>Impermeable Areas.</p> <p>Within the OL [APP-013] what is the current total impermeable area associated with:</p> <ul style="list-style-type: none"> • The current site layout; • The future baseline site layout; and • The Proposed Development site layout. <p>Airfield</p> <p>The current total airfield impermeable is 3.94km², this would increase to 4.07km² with the Project. There is a very minor increase in the future baseline of 0.523ha against the current position.</p> <p>Surface Access</p>

		<p>The current total impermeable area associated with the surface access highways works is 10.74 ha, which would not change in the future baseline scenario. As stated in ES Appendix 11.9.6: Flood Risk Assessment – Annex 2: Surface Access Highways Surface Water Drainage Strategy, the total net increase due to the Project in impermeable area as a result of the proposed surface access highway works is 2.91 ha.</p>
WE.1.3	The Applicant	<p>River Arun – Possible Flooding</p> <p>A number of RRs referred to a concern that the Proposed Development will exacerbate flooding in the River Arun catchment. Does the Proposed Development have any potential to impact the Arun catchment?</p> <p>No, the development will not affect the River Arun. Gatwick Airport lies wholly within the catchment of the River Mole (including the Mole’s tributaries in proximity to the airport such as the Gatwick Stream and Crawler’s Brook), that drains northwards to the River Thames.</p>
WE.1.4	EA Lead Local Flood Authorities	<p>Flood Risk Assessment</p> <p>Do you agree that the correct climate change allowances have been used in the Flood Risk Assessment (FRA) [AS-078]?</p>
	n/a	
WE.1.5	The Applicant	<p>Flood Risk Assessment</p> <p>Section 5.10 of the FRA [AS-078] addresses the flood risk compatibility of the Project. Explain how consideration has been given to areas outside of Flood Zone 2 and 3 and why these were discounted for the following: The revised northern runway; and The taxiways and associated infrastructure.</p> <p>The Airport is at risk of flooding from the River Mole, Gatwick Stream, Crawler’s Brook and</p>

		<p>Man’s Brook in the existing/baseline scenario, which would be expected to increase with the predicted impacts of climate change as reported in the Flood Risk Assessment [AS-078].</p> <p>As stated in Paragraph 5.10.5 of the FRA the intention of the Project is to make best use of existing infrastructure. Consequently, the new elements of the Project would be located within or connected to existing infrastructure that is within Flood Zones 2 and 3 (see ES Figure 11.6.4 [APP-057]) as there is limited space to provide a revised northern runway, taxiways and associated infrastructure and not encroach into floodplain. The spacings of runways and taxiways is in accordance with specific criterion approved by the UK CAA. A wider separation of runways and taxiways, or changed relative positions, would involve greater disruption to the interior airport layout and increase the likelihood of requiring to take land outside of the existing airport boundary. In any event, the course of the River Mole and its tributaries at Gatwick means that any movement of infrastructure would still be likely to intersect with areas of floodplain. Paragraphs 5.10.6 and 5.10.7 of the FRA demonstrate that alternative options for the Project elements have been considered but as no options are available, the Sequential Test for the Project is considered to be satisfied.</p> <p>These features have been assessed and classified as Essential Infrastructure (see Table 5.10.1 of the FRA), and consequently the Exception Test applied as they are wholly or partially located within Flood Zone 3, which is reported in Paragraphs 5.10.8 – 5.10.13 of the FRA demonstrating compliance with national planning policy as they are shown to provide wider sustainability benefits and would be safe for users for their lifetime.</p>
WE.1.6	The Applicant EA	<p>Flood Risk Assessment</p> <p>Paragraph 5.10.13 of the FRA [AS-078] states that the Proposed Development “<i>would not increase flood risk elsewhere and that it would be safe for users for its lifetime mean that the</i></p>

		<p><i>requirements of the Exception Test have been met</i>". Some elements of the Proposed Development (Table 3.3.10) are stated to have differential lifetimes. Explain:</p> <ul style="list-style-type: none"> • How long is the "lifetime" of all elements of the Proposed Development? • Has the EA accepted this duration for all elements? and • Does the mitigation secured within the dDCO cover this whole period? <p>The design life adopted for the Project varies as stated in Section 6 of the ES Appendix 11.9.6 Flood Risk Assessment [AS-078]. The adopted lifetime for the surface access works is 100 years (up to 2132) and 40 years (up to 2069) for the airfield and associated works. The incorporation of the predicted impacts of climate change on flood risk has been discussed and agreed by the Environment Agency and the Applicant through the SoCG process (see item 2.22.2.2 of the Statement of Common Ground between both parties that was submitted at Deadline 1 [REP1-034]).</p> <p>Through SoCG discussions the Environment Agency has requested sensitivity testing of a longer assumed design-life for the airfield works. However, it should be noted that as the Project has developed a combined fluvial flood mitigation strategy for both airfield and surface access elements, mitigation is provided to ensure no increase to other parties up to the 1 per cent (1 in 100) AEP event, plus the Central allowance of +20 for climate change event. This is equivalent to assuming a 100-year design life for the airfield elements. This approach has been agreed with the Environment Agency, see item 2.22.2.2 of the Statement of Common Ground between both parties that was submitted at Deadline 1 [REP1-034].</p> <p>The modelling reported in the FRA [APP-147] demonstrates that through provision of the mitigation measures listed in Table 11.8.1 of ES Chapter 11: Water Environment [APP-036] the Project will not increase existing levels of fluvial (river) or surface water drainage flood risk for these lifetimes including the predicted impact of climate change.</p> <p>It should be noted that the fluvial flood risk mitigation strategy does not in effect differentiate</p>
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		<p>between the two design lives. The mitigation strategy as reported in the FRA [APP-147] has been developed holistically and mitigates fluvial impacts for all Project elements up to the Central allowance of 1% (1 in 100) + 20% climate change event (the 2080s epoch). In effect therefore the Project provides additional mitigation beyond that required for the airfield and associated elements given their shorter assumed design life of 40 years.</p>
WE.1.7	The Applicant	<p>Flood Risk Assessment</p> <p>Paragraph 7.2.9 of the FRA [APP-078] states that further details of the outline drainage design are included in Figures 4.1 and 4.2 of ES Appendix 11.9.6: Annex 3 [APP-149]. These Figures do not appear to exist. Should the reference be to Figures 4.2.1 and 4.2.2 of that document?</p>
		<p>Yes, paragraph 7.2.9 of the FRA [APP-078] should reference Figures 4.2.1 and 4.2.2 in Annex 3 [APP-149].</p>
WE.1.8	The Applicant Thames Water	<p>ES Chapter 11 – Water Environment</p> <p>Table 11.3.4 of ES Chapter 11 [APP-036] states that Thames Water will be undertaking its own assessment of the impact on its network. It is assumed that this will include the capacity of nearby Wastewater Treatment Works to accommodate any increase in wastewater arising from the Proposed Development.</p> <p>Has this been completed? Will the findings be submitted into the Examination and if so, when? Also explain how any necessary infrastructure improvements would be secured.</p>
		<p>The Applicant and Thames Water (TW) have been in discussion about the Project since 2019. Initial survey work on the Gatwick estate was carried out by TW in early 2021. TW and the Applicant have agreed the scope of two studies to understand any project implications for both the network (pipes) and processing facilities (the treatment plants at both Horley and Crawley). These studies will be conducted by TW in two stages – the first stage using existing</p>

survey data (from both TW and the Applicant (supplied in 2021)) and the Applicant's water model outputs (supplied in 2021), the second stage being a verification exercise after a further round of surveys are undertaken during the first half of 2024.

The Applicant's foul water strategy has been designed to minimise any impact on TW assets by:

- Diverting a part of the airport catchment which currently drains to the Horley works to now drain to the Crawley works (on the understanding that there is greater capacity available at the Crawley works); and
- Designing on-airport surface water treatment facilities which remove the need for the large trade effluent flows currently being sent from the airports drainage lagoons to the Crawley works thus reducing the load on this facility.

It is hoped that the first phase of the studies will be complete by the end of May 2024 and will enable both parties to understand whether any upgrades are likely to be necessary to the TW network or processing facilities to accommodate future forecasted flows from the airport as a result of the Project. It is unlikely that the second phase of verification using further surveys will be complete before the end of the examination period.

Whilst TW acknowledge that they have a duty to deal with the 'domestic' foul water flows (i.e. those coming from the terminals etc. which are not subject to trade effluent agreements) from the airport, pending the outcome of their additional modelling/assessment work they are requesting a requirement to be included in the draft DCO to prevent airport growth arising from the Project being implemented until any necessary upgrade works to TW infrastructure have been carried out. Whilst the Applicant does not consider the imposition of such a requirement to be necessary or appropriate in view of the Project's proposals and TW's underlying statutory responsibility/duty to accommodate the additional flows, the Applicant is

		<p>mindful that TW's additional modelling verification is unlikely to conclude prior to the close of the examination and the challenges this poses to the ExA's consideration of the Project and its impacts/mitigation.</p> <p>The Applicant could not accept the potential delivery risk that would be created were the ExA minded to recommend TW's suggested requirement be imposed in the draft DCO (particularly noting recent news regarding the financial conditions within which TW is currently operating, and the uncertainty this may create on their development plans).</p> <p>Accordingly, the Applicant is considering alternative approaches, which may include the submission of a change to the Application to include an on-airport foul water treatment works which would deal on-site with all foul flows arising from the whole airport following the implementation of the Project. Were this change to be proposed, the Applicant will notify the ExA at the earliest opportunity following the next round of hearings. The Applicant remains hopeful that the need for such a bespoke facility will not be necessary and that TW's additional modelling will verify that sufficient capacity is available, or that an alternative agreement can be reached (e.g. to contribute proportionate funding to an expansion to the existing facilities, recognising the wider background growth that will also contribute to any capacity challenges, independent of the Project (or the Airport)). However, the Applicant considers it may be necessary to consider an alternative approach to safeguard the consent and timely delivery of the Project in the counter-factual circumstances where agreement is not reached and constraints on the Project's delivery are otherwise proposed.</p>
WE.1.9	<p>The Applicant</p> <p>Sutton and East Surrey Water</p>	<p>ES Chapter 11 – Water Environment</p> <p>Table 11.3.4 of ES Chapter 11 [APP-036] states that Sutton and East Surrey Water will be undertaking its own assessment of the impact on water supply.</p> <p>Has this been completed? Will the findings be submitted into the Examination and if so,</p>

		<p>when?</p> <p>The ExA will note in the subsequent entry to Table 11.3.4 that SESW confirmed in January 2020 that their network and sources would be able to meet the increase in demand as a result of the Project.</p> <p>This general position notwithstanding, the Applicant confirms it has continued to engage with SESW in the interim and most recently SESW wrote to GAL to confirm on 9 February 2024 that:</p> <p><i>“When preparing our [SESW] water resources management plan, we received details from Gatwick concerning the future demand the airport anticipates so we can ensure we maintain a balance of supply and demand to meet the needs of water users in our area. Our current plan, and proposed revision (due to be published in 2024), accounts for the demand Gatwick anticipates. We therefore do not consider we need to make a representation to the Planning Inspectorate relating to the proposed development as a consequence of ensuring our operation as a water undertaker.</i></p> <p><i>Separate to the requirement to maintain a water resources management plan, the Environmental Improvement Plan has placed stretching targets on each water company in England and Wales to reduce our customers’ and end users’ water consumption over the next 25 years. We would therefore separately encourage the ongoing discussions between our organisations supporting Gatwick’s decade of change, which we appreciate is a wholly separate project to the Northern Runway development but will ultimately enable our two organisations to demonstrate excellent water efficiency and the upstream/downstream benefits to the water system and environment arising from this.”</i></p>
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WE.1.10	The Applicant	<p>ES Chapter 11 – Water Environment</p> <p>Paragraph 11.6.81 of ES Chapter 11 [APP-036] states that part of the Thames Water Network in Horley periodically reaches capacity and causes flows to back up to the airport which has potential to reduce velocities in the pipes and could increase sediment deposition. Paragraph 11.13.40 concludes a negligible to minor adverse impact due to the Proposed Development works to accommodate the forecast increase inflows. It is unclear whether the reduced velocity in the proposed new sewerage system would lead to an increase in flood risk or if this has been considered in the assessment. Can the Applicant confirm whether this has been assessed and if so, where and how this has informed the conclusion of effects?</p> <p>The potential for surcharging in the public wastewater network to cause sediment deposition, reduce capacity and increase flood risk in Gatwick’s infrastructure has been integrated into the assessment of impacts reported in the ES Chapter 11 Water Environment Section 11.9 [APP-036]. As stated in Paragraph 11.6.81 Gatwick’s continued maintenance activities would remove sediment and address the potential increased risk, therefore the effects of the Project on the private airport wastewater system will be negligible to minor adverse.</p>
WE.1.11	The Applicant	<p>ES Chapter 11 – Water Environment</p> <p>Table 11.8.1 of ES Chapter 11 [APP-036] sets out mitigation, monitoring and enhancement measures. This includes ‘new section of River Mole channel at existing runway culvert exit’. Provide a diagram showing the alterations to the River Mole culvert at this point.</p> <p>An indicative design drawing of the extended section of the River Mole culvert is included in ES Appendix 11.9.2 Water Framework Directive Compliance Assessment Annex 1 [APP-143]</p>
WE.1.12	The Applicant	<p>ES Chapter 11 – Water Environment</p> <p>The penultimate sentence of Paragraph 11.9.42 of ES Chapter 11 [APP-036] contains a clear</p>

		typo. Please provide the correct wording.
		The penultimate sentence of Paragraph 11.9.42 should read: <i>“The effect on airport drainage infrastructure therefore has been assessed as minor adverse and negligible to minor adverse for airport infrastructure and airfield grassed areas respectively.”</i>