

The Mayor of London's response to the Airports Commission consultation on shortlisted options

## Water and flood risk

### Supplementary Note 09

February 2015

---

#### Key findings

- All three of the Commission's shortlisted options will have adverse impacts on the water environment (flood risk, quantity and quality).
- The Commission's assessment has adopted an appropriate approach, but there are some significant limitations in the data and methods used to define the future baseline and impacts of the options. The issues are not deemed to undermine the overall pre-mitigation conclusions but nonetheless require addressing.
- Issues with the assessment include: lack of consistent information across options, uncertainties in defining the future baseline, missing impact assessments and lack of supporting calculations to justify the positions stated.
- The level of detail available for the future impacts and mitigation measures is such that any aim/intent of reducing the impact to neutral is an 'aspiration' only.

#### Key recommendations for further work

- The Commission should ensure that the future baseline and overall assessment is developed consistently across all options such that a full comparison of options can take place prior to recommendation to Government.
- The Commission should fully support any positions stated with appropriate calculations, data and transparent assumptions.
- A full understanding of post-mitigation impacts should be presented at the appropriate point in the design process.

## **A: Key observations**

### **1. The Commission's assessment of the shortlisted options appears to be inconsistent between each of the three options**

- 1.1. Certain aspects of the analysis lack clarity and supporting data as justification for the assumptions and conclusions made. For all three options there will be significant impacts on the water environment (flood risk, quantity and quality). Mitigation measures are proposed to ameliorate the impacts, however the level of design is not sufficiently progressed to conclude whether it will be possible to reduce the residual impact to neutral.
- 1.2. The level of detail presented in support of each option is significantly different, which means that direct comparison between the options is difficult. The approach generally used follows - to greater or lesser extent - the Appraisal Framework and should provide a comparable assessment of the relative impacts, however, the issues identified mean that there is not a clear comparison of the detailed impacts of each option available.
- 1.3. Despite the potential shortcomings of the analysis, the conclusions drawn from the Water and Flood Risk assessment are likely to be sound. Without mitigation there will be an adverse impact on the water environment as a result of the options. The level of detail available for the future impacts and mitigation measures currently presented is such that the aim of reducing the impact to neutral is an aspiration only and as a result significant further assessment will need to be carried out to confirm the residual impact.

### **2. Elements of the assessment are not consistent with the Commission's Appraisal Framework**

- 2.1. The water quality analysis appears to not have considered some of the overall objectives that were highlighted in the appraisal framework, for example, not sufficiently assessing/mentioning protected areas. The assessment presented only considers hydromorphology and water quality. There are no clear overall statements on whether the proposal information was sufficient, required further input or whether the mitigations adequately met the needs of the Water Framework Directive (WFD).
- 2.2. There are uncertainties relating to the approach adopted to define the water quantity baseline and assess the impact of the options. Hence, comments on the conclusions drawn from the available assessment are limited in scope.
- 2.3. The approach to flood risk is consistent with the Appraisal Framework, however for the Gatwick option the promoters submission includes data and analysis which is more detailed and site specific than that required by the framework. This leads to

possible misinterpretation of conclusions when comparing the high level output from the review against the original submission data. The approach used is consistent with a 'scoping level' flood risk assessment used to assess other large scale infrastructure projects.

### **3. The Commission's water and flood risk assessment has several other weaknesses**

- 3.1. The findings of the report and gaps remaining suggest that the risks entailed in delivery any of these three options are broadly comparable to the risks associated with delivery of other capacity options, including an expanded Stansted.
- 3.2. Some material used to assess the water and flood risk impacts is without substantiation (e.g. calculations used to define current and future flow runoff rates are quoted as using standard approaches, but the analysis has not been presented).
- 3.3. There are uncertainties relating to the definition of the future baseline in each aspect of the water topic. A more detailed review of the information presented with additional supporting data may highlight that the assumptions are well founded, however, this has not been possible with current information or as part of this high level review.
- 3.4. Data from the external agencies appears to be current and robust however there are issues with the conclusions drawn from the data (e.g. use of only 5 years' worth of data for defining water efficiency targets).
- 3.5. Groundwater flood risk has been assumed to not increase at Gatwick on an annual basis, but from the available information the variability of Gatwick flooding is uncertain, and this conclusion is questionable. In addition, expanding Heathrow airport to the west will include areas of land substantially prone to flooding, as witnessed in 2014. Full consideration of all flood risks must be assessed.

## B: Does the Commission’s assessment constitute a robust approach?

To be robust, the option appraisal must entail a complete assessment. It must also be consistent across all the options, with the Commission’s previous analysis, with best practice in the appraisal of large infrastructure projects – including principles of HM Treasury Green Book – as well being aligned with the Commission’s own Appraisal Framework. The table below sets out a summary of the extent to which the Commission’s assessment meets these requirements.

Table 1: Does the Airports Commission’s assessment constitute a robust approach

Criteria	Met?	Comments/examples
<b>Approach to Assessment</b>		
Aligned with Airports Commission Appraisal Framework?	Partial	Broadly followed the appropriate approach, but with some significant limitations in the data and methods used to define the future baseline and impacts.
Consistent approach to assessment: <ul style="list-style-type: none"> <li>Between options?</li> <li>With previously considered options?</li> <li>With best practice/Green Book?</li> </ul>	Partial	The level of detail presented in support of each option is significantly different, which means that direct comparison between the options is difficult.
Assessment complete (evidence gaps addressed, suitable geographic/temporal scope)?	No	Excludes commentaries on: Protected Areas, likelihood of deterioration of water bodies; likelihood of preventing achievement of Good Status.  There is not a clear comparison of the detailed impacts of each option.
<b>Assumptions</b>		
When multiple scenario or assumption sets used, has the most appropriate been identified – or worst case scenario tested?	n/a	
<b>Analysis: impacts and conclusions</b>		
Risks fully stated and impact reflected in conclusions?	No	The unmitigated impacts on water are significant. Post-mitigation impacts could only be certain further into the design process.
Understanding of net/cumulative impacts?	No	Impacts are unmitigated.