

RESPONSE TO THE STUDY 1 ENVIRONMENTAL IMPACTS

CONTENTS

- 1 COMPARATIVE IMPACTS**
- 2 ADVANTAGES OF THE NARROW RUNWAY CONFIGURATION**
- 3 HERITAGE ASSETS**
- 4 TIDAL POOLS FOR FLOOD STORAGE AND TIDAL POWER**
- 5 TE2100 PROPOSALS**
- 6 AIRFIELD TUNDRA AND GREEN ROOFS**
- 7 ST. CEDD RESERVATION**
- 8 SPECIFIC PROPOSALS TO REMOVE UNCERTAINTY**
- 9 COSTS AND PROGRAMME**

To be read with the following graphics:-

- MTTRA two long runway July 2014 East Configuration
- MTTRA two long runway July 2014 elliptical footprint
- MTTRA five runway August 2014 Configuration
- St. Cedd Reservation Phase 1 and 2 Maps.

1 COMPARATIVE IMPACTS

A useful comparison of the various Inner Estuary and other schemes is not the relative size of their impacts but their relative impacts per mppa (million passengers per annum). For two airports schemes that result in the same overall impact it is the one that provides the higher mppa that should proceed as this provides greater capacity for the same impact and the cost per passenger for the remediation is lower. Only when the various tables in the report comparing impacts are adjusted for the impact per mppa would a fair comparison be drawn between the options. So for example the Metrotidal Tunnel and Thames Reach Airport elliptical template accommodates a variety of runway configurations. The one analysed by the report has two long runways with a capacity of between three and four independent runways, which is higher than the capacity of a close-parallel system like the AC Isle of Grain configuration. The elliptical template can accommodate five or six runways along with support services, manufacturing and logistics, without a significant increase in the footprint. The way to compare these and the impacts of other schemes is on the basis of the impact per mppa. The mppa estimated for each proposal also takes account of 24-hour operations.

The comparison of impacts per mppa is relevant when considering the Airports Commission's capacity requirement of one new independent runway, setting an agenda for just one new independent runway at Heathrow and by inference the equivalent of three or four independent runways in the Inner Estuary. If this is to be the limit then the impacts of the alternative Inner Estuary schemes can be scaled back accordingly. So for example the Metrotidal Tunnel and Thames Reach Airport scheme would be for the north long runway to be operated with the equivalent capacity of two conventional runways, and for the south long runway to be reduced to a conventional 4-kilometre runway. A large area of platform within the elliptical template would then be omitted, considerably reducing the overall impact of the proposal. Again comparisons of the various scheme impacts per mppa, including those at Heathrow would eliminate this discrepancy.

Finally it is not the overall impact of an Inner Estuary scheme but the net increase of impact over the Heathrow and other options that is relevant to the decision. The impacts at Heathrow are not nil.

2 ADVANTAGES OF THE NARROW RUNWAY CONFIGURATION

The long and narrow MTTRA runway configuration includes the following advantages, with only the first two recognised, in part:-

1. when the long and narrow footprint is translated north into the Thames estuary it results in the minimum direct impacts on the ecology, environment, habitat, habitation, heritage assets and landscape character of the Hoo Peninsula
2. the long and narrow footprint further north avoids impacts falling on the Medway estuary
3. the long and narrow footprint falls on intertidal and flood risk areas that present relatively uniform ground conditions for the construction, while embracing a sufficient source of sand and gravel from the tip of the Hoo hillside
4. the long and narrow footprint can be translated further east before encountering shipping conflicts with the Thames and Medway shipping channels
5. the noise footprint is long and narrow, reducing the area of impact over the Hoo Peninsula and the population affected
6. the southern runway is considerably further north of the LNG storage facility so that subject to the health and safety review only obstacle marking and lighting of the existing facility is required, thereby avoiding disruptive and expensive relocation
7. the southern runway is considerably further north so that noise contours do not adversely affect the population or conservation area/heritage assets of Sheerness and the Isle of Sheppey.

Further comment on points 4 and 6 are provided in response to Study 2.

3 HERITAGE ASSETS

The MTTRA proposals already result in the lowest impact on heritage assets. The impact would be reduced by the following initiatives:-

- excavation and recording of the WW2 warplane site
- detailed excavation of the tip of the Hoo hillside where excavated for the airport construction
- detailed investigation and assessment of all areas within the elliptical template
- relocation of St. James Church Allhallows close to its present site, if required by the larger capacity configurations
- reconstruction of Slough Fort elsewhere on the Hoo Peninsula
- retention in situ of the dragons-teeth tank traps to the north of Grain Village
- relocation of the London Stone and Obelisk

4 TIDAL POOLS FOR FLOOD STORAGE AND TIDAL POWER

The elliptical template of the MTTRA footprint includes a significant area of tidal pools. The report has assessed these areas as having the equivalent impact of building an airport platform but a fairer assessment is required for the impact of impounding an intertidal area of the estuary for flood storage and the generation of tidal power. It is not 0% or 100%. The mudflats within the pools remain undisturbed, apart from a small area of dredging in the low pool to prevent bird strike, and the mudflats continue to experience the tidal cycles. The range of species with access to these areas is affected by the protection required to prevent fish and large invertebrates from passing through the turbines and sluices (measures could be provided to mitigate this effect such as access during intermediate tide levels) but this can be to the advantage of other species. The pool impoundment in effect adds many kilometres of new coastline where a rich habitat that experiences the full tidal range can develop. The flood

storage and tidal power outputs are significant benefits that help offset the direct environmental impacts, to result in a much lower net impact. This aspect has not been considered by the report.

As the benefits of the pools have not been considered, simply to omit them and their impoundments altogether would provide a crude but fairer way to compare the MTTRA proposals with other schemes, because it would significantly reduce the areas of impact.

There are other benefits provided by the pools that have not been considered by the report:-

- reduction of bird strike risk
- reduction in the area affected by bird strike management
- tidal power operations mitigate changes to the flow from building out into the estuary
- the elliptical impoundment mitigates wave reflection
- the impoundments help to contain and manage construction and operation plumes

We understand it may be difficult for the Airports Commission and their consultants to take account of the pools without detailed analysis of their impacts and benefits. This work can be undertaken by H.R.Wallingford, the recognised experts at assessing impacts on the tideway, to provide comprehensive and robust results within six months. A grant has been approved to enable us to put this work underway now.

5 TE2100 PROPOSALS

The TE2100 proposals are invoked a number of times by the report as already providing the necessary flood defence without net loss of habitat. The proposals envisage a saw-tooth risk-return investment profile advancing through the century. However these are only proposals and little work has been undertaken to date. The MTTRA proposal integrates a multimodal tunnel with flood defence, tidal power and inner estuary airport, providing an increase in

benefits and reduction in costs. One of the costs saved would be the risk-return investment in the TE2100 proposals which would not need to be implemented. A fair comparison of the MTTRA and Inner Estuary proposals should take account of this substantial saving of capital investment through the 21st century.

6 AIRFIELD TUNDRA AND GREEN ROOFS

The MTTRA proposals include a bespoke tundra for the airfield and green roofs for the principal airport buildings. Large areas are available to make useful contributions to local habitat, environment and the airport microclimate, resulting in a reduction of emissions and a lower energy consumption for the building services.

7 ST. CEDD RESERVATION

The MTTRA proposals maintain that in the long term there is considerable scope for the creation of new offshore island habitats in the outer estuary. However, the programme for creating the islands and then forming the mosaic of habitats will take time so that this form of remediation will be better for addressing impacts that arise from the higher aviation capacities required later in the century. For now, a quicker and more economical solution would be to form replacement habitats on the Dengie Peninsula in Essex. Here there is a large area of flood-risk farmland flanked by hills to the west and north that can provide an appropriate mosaic of habitats to replace those lost on the Hoo Peninsula. In effect the late Bronze Age habitats described by the English Heritage “Hoo Peninsula Historic Landscape Project” can be recreated, with mixed-deciduous, wooded hillsides descending to low meadows, marshes, saltmarsh and intertidal areas, to join and support the saltmarshes that already existing along the coast extending north to St. Peter-on-the-Wall at Othona. The St. Cedd Reservation, the area of habitats formed and protected on the Dengie Peninsula, naturally lends itself to development in two phases; the larger area to the south by Burnham and Southminster

developed prior to opening of the airport and a second phase to the north, restoring the former Tillingham and Bradwell Marshes, for remediation of additional capacity in 2050.

8 SPECIFIC PROPOSALS TO REMOVE UNCERTAINTY

The study has usefully confirmed the scope of environmental impacts, the legal processes required to address them and their possible remediation, but leaves the cost and programme uncertain. This uncertainty arises from the range of airport and surface access options being considered and the lack of specific proposals for remediation. Fortunately, from the assessments of the various impacts, the direction in which to adjust and relocate the generic elliptical template proposed for the MTTRA integration is readily apparent and re-assessment of the impacts is straightforward. Accordingly to remove the uncertainty, the following adjustments and options are proposed for reassessment, to achieve the minimum impacts per mppa:-

- Use of the MTTRA July 2014 East Configuration elliptical template accommodating two long runways, the operational equivalent to four runways. As the generic template is translated eastwards between the Thames and Medway shipping channels more of the footprint falls over the open estuary and less on the intertidal areas and the Hoo, thereby reducing the assessed impacts of tables 4.8 and 4.12.
- the slightly broader July 2014 East Configuration elliptical footprint (North-South) can accommodate 5 runways together with associated support services, manufacturing and logistics in due course, representing a higher impact scheme but one with even high-capacity. Again this is located further east into the estuary.
- Study 1 raises a number of doubts and concerns at the extent of analysis required for assessment of the environmental impacts. Application of the generic MTTRA elliptical template enables the hydrographic analysis and optimisation to be resolved within six months.

- Assessment of the spatially specific remediation proposals of the St. Cedd Reservation Phases 1 and 2
- Recalculation of the impacts in terms of comparative impacts per mppa

9 COSTS AND PROGRAMME

Clear and spatially specific proposals for the airport, surface access and environmental remediation enable a detailed and robust assessment of the costs and programme to be concluded much earlier. This in turn confirms how and when the required environmental remediation is provided to allow time for the replacement habitat to be established before the existing habitats are disturbed by the development.