#	Submission Document Name, Page/Para	Question/Issue	Tech/ Conslt/ Env/Econ/ ATM/IFP/ General	Date of response	Response – State if and where a submitted document will be changed.
40	(Via email)	The KMZ noise contours show differences in contour shapes between the do-nothing and do-something scenarios, including at levels of noise where aircraft would be expected to be at an altitude unaffected by this change (i.e. below 5,000ft). Please check and confirm that the contours and outputs (including TAG assessments) are correct and representative of the airspace scenario.	Env	20/10/2021	We have reviewed the noise contours and WebTAG for the scenarios and can confirm that the modelling outputs are correct re: contours and WebTAG, as described in the consultation document and ACP, based on the assumptions used for the modelling. The minor differences noted here are due to the limitations of the modelling and the dispersion technical assumptions, which were set to be consistent between overflight models. These technical assumptions are summarised in Annex A below and were discussed on **Friday 15th October 2021** during a meeting that was held between the Sponsor's technical experts in noise modelling and the CAA technical expert assessing the model and its output. **Note that, in Annex A below, it is necessary to use technical terms due to the complex nature of noise modelling, and the considerable expertise required to interpret the modelling inputs & outputs.** The information provided is consistent between the consulted-upon Option 1 and the final Option 1A, and also consistent with the statements made in the consultation material and the ACP. However, as per the limitations of the noise modelling dispersion assumptions in Annex A below, the outputs (including WebTAG) could also be considered as a range from 'no change' to 'as output by the model'. We contend that these modelling outputs were sufficient to enable reasonable interpretation of potential impacts by those reading the submitted documentation, and changes are not considered necessary.
41	(Via email)	For the CAA to complete our assessments we require the sponsor to determine if there any confirmed large-scale housing developments that would be impacted by this ACP and therefore change any conclusions that have been informed by overflight population counts.	Env	20/10/2021	We are not aware of any confirmed large-scale housing developments that would have changed any of our conclusions, given its constraints and parameters. The consultation and ACP described two Options: Option 1 Vectoring and Option 2 PBN Routes with Vectoring. Part of the consultation documentation, the Virtual Exhibition [link], and an infographic provided, illustrated the general constraints of where the major airspace infrastructure element – the hold – would need to be located [link]. The content of the public webinars also explained the airspace constraints. The Consultation Response Document 4A(i) [link] provides more evidence of how consultation feedback was considered against the constraints. These constraints defined the parameters of this proposal's airspace design: the higher-altitude arrival routes and hold must be to the north of LLA, and they must turn and head south to the runways within the westerly and easterly constraints until about 5,000ft (above and outside the primary metric for LOAEL) where the traffic flows would become comparable with the pre-pandemic traffic flows. The population counts do not specifically have regard for local plans or local development frameworks. We have interpreted this requirement of CAP1616 with reference to the primary decision-making noise metrics. For all options, the LOAEL contours were found to be consistent with each other and do-nothing/baseline conditions, subject to the technical assumptions described above, and in Annex A. The impact of local development plans would therefore be inconsequential to impacts of the airspace change options against the primary decision-making metric (WebTAG), bearing in mind the limitations and technical assumptions used in the modelling described above, and in Annex A. Changes to submitted documentation not considered necessary.

Annex A

It is necessary to use technical terms and language due to the complex nature of noise modelling, and the considerable expertise required to interpret the modelling inputs & outputs.

Modelling assumptions and their limitations

To facilitate modelling of the new vectoring areas within the options it has been necessary for the noise modelling to make assumptions with respect to the dispersion of aircraft within the vectoring area itself. This is necessary to ensure that changes in the location and pattern of aircraft movements are accounted for when modelling overflight.

The modelled dispersion is based on a measurement of the dispersion which occurs in the existing vectoring area for Runway 07 approaches. The width of the vectoring areas of the options is different to what occurs today and so are the locations expected to be overflown.
Figure 1 below illustrates the differences in the modelled dispersed approach tracks within the model where those shown in blue are for the options assessed in the ACP, with those shown in red based on the existing approaches as have been modelled using the benefit of radar tracks.

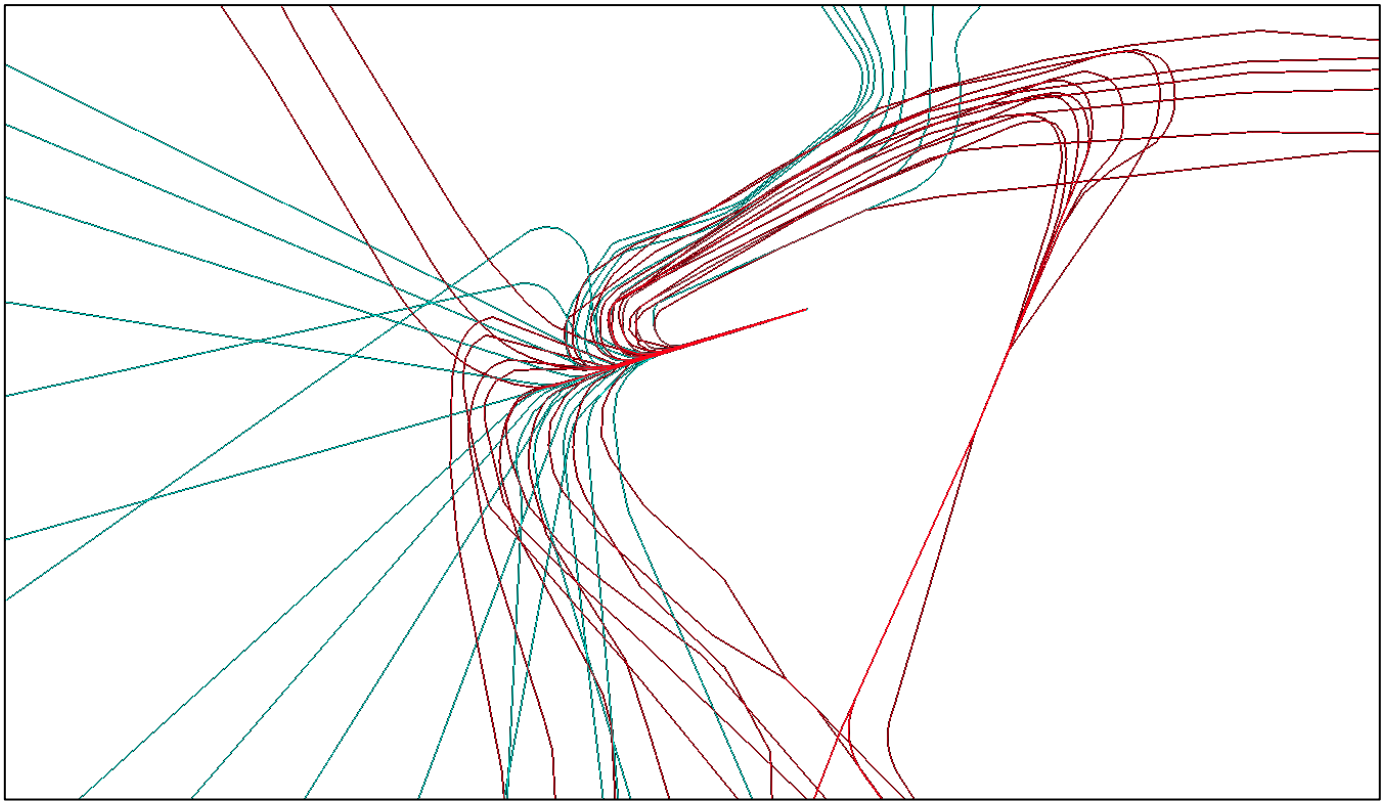

Figure 1 Easterly runway example – dispersion modelling

The differences in the contours noted by the CAA under the Runway 07 final approach, for example, are due to the way in which these different dispersion assumptions combine.

It is also an artefact of the way in which the noise model calculation grid has been configured meaning that the final approach tracks become more concentrated over the grid points in the options than they are in the 'do-nothing' scenario. These two aspects of the modelling have the effect of altering the noise contours, as observed by the CAA.

Should different assumptions, or approaches to modelling the final approach have been taken along with a different definition of the noise level grid then noise contours under the Runway 07 final approach may not change. However, by taking a different approach to modelling the final approach, this may have limited the overflight assessment.

In summary, the differences in the noise contours under the Runway 07 final approach are due to the assumptions made in the noise modelling of the options. Should a different approach have been taken then these contours may not have shown any differences however this may have been at the expense of the overflight assessment.