Gatwick Airport Northern Runway Project

Examination Ref: TR020005

Rule 17 response to further information request PD-018 from the Examining Authority dated 9 May 2024

Deadline 4: 15 May 2024

Crawley Borough Council (GATW-AFP107)
Mid Sussex District Council (20044737)
Reigate and Banstead Borough Council (20044474)
East Sussex County Council (20044514)
Mole Valley District Council (20044578)
Horsham District Council (20044739)
West Sussex County Council (20044715)
Surrey County Council (20044665)
Tandridge District Council (GATW-S57419)
Kent County Council (20044780)

Planning Act 2008 (PA2008) - Section 89(3); and the Infrastructure Planning (Examination Procedure) Rules 2010 – Rule 17

Request for further information and written comments

The attached document prepared by York Aviation LLP on behalf of the Joint Local Authorities provides a response in relation to letter PD-018 dated 9th May 2024 in respect of the Future Baseline (question R17b.1a).

Following ongoing engagement, the Applicant has requested York Aviation LLP provides additional figures from the JLAs for 2032 and 2038 which will be provided to them as soon as possible.

Gatwick North Runway Project
Rule 17 Response - the Future Baseline

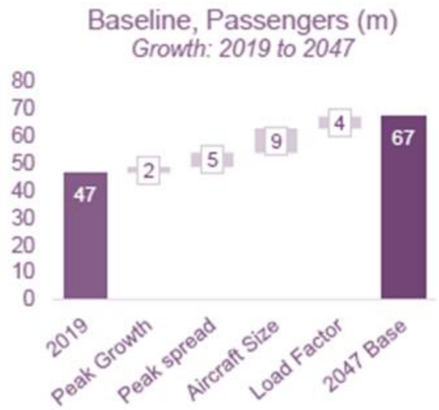
1. The Joint Local Authorities (JLAs) have been asked to substantiate their view as to the appropriate Future Baseline for environmental assessment purposes. The JLAs have also been asked to set out which elements of the Applicant's Baseline Case that they disagree with. This note has been produced by York Aviation LLP (YAL) to address these two points.

2. It should be noted that our analysis is necessarily dependent on the material submitted by the Applicant (GAL) and other information in the public domain, either from Civil Aviation Authority Airport Statistics or other information sources such as the Online Airline Guide (OAG), and this limits the extent to which we can be precise in our estimation of the appropriate Future Baseline as we do not have access to full information regarding the actual pattern of daily operations to refine our view.

The Applicant's Future Baseline

3. The Applicant's position regarding the Future Baseline is summarised at Figure 36 of the Needs Case Technical Appendix [**REP1-052]**, reproduced in **Figure 1** below. As explained in Section 5 of the same document, the ultimate Baseline passenger throughput has been assessed largely by extrapolating past trends in terms of the ability to grow on a peak day, peak spreading through growth in winter periods, aircraft size and load factor growth. Our understanding is that each of these components has been assessed separately such that there is no overlap between them. We note that the ExA has asked the Applicant regarding the potential for double counting and we reserve any further comment until we have seen the Applicant's response.

Figure 1: The Applicant's Components of Growth in the Baseline



Source: GAL

4. Our concerns regarding the realism of this Future Baseline are based on:
   - the extent to which additional growth can be accommodated on a peak day;

- the extent to which it is reasonable to assume growth in off peak periods without additional movements on peak days;
- the impact of fewer new long haul services on aircraft size in the Baseline;
- the extent to which it is reasonable to assume continued growth in load factors above 2019 levels.

Peak Period Growth

5. The Baseline Case as presented by the Applicant relies on an increase of 43,000 annual commercial aircraft movements above 2019 levels by 2047 (Table 10.1-1 of the Forecast Databook (Appendix 4.3.1 to the ES **[APP-075]**), with the increase being phased 30,000 by 2032 and 35,000 by 2038. Each of these would require 118, 82 and 96 additional aircraft movements respectively on average over each day of the year.

6. Annex 6 (the Markets and 'Pipelines' Report) to the Forecast Databook **[APP-075]** provides further information as to how the Applicant believes that the growth would be achieved to 2032 in terms of additional flights per day in the peak, comparing the NRP Case with the Baseline Case in the table reproduced in **Figure 2** below (page 6 of Annex 6 to the Forecast Databook).

Figure 2: The Applicant's Summary of Daily Movement Growth

Long & Short Haul summary: ATM Growth Forecast (Peak), vs 2019

	NR Growth 19-32	Baseline Growth 19-32
Asia	~20	~10
Beach inc. Florida	<5	<5
China	~10	~6
N. America	~25	~12
C. & S. America	<10	<5
Africa	~5	<5
Middle East	~10	~5
Long Haul	+75	+37

	NR Growth 19-32	Baseline Growth 19-32
Domestic	~5	0
Europe - EU	~90	<5
Europe – Non EU	~20	<5
Africa (Northern)	~5	<5
Short Haul	115	<10

Source: GAL

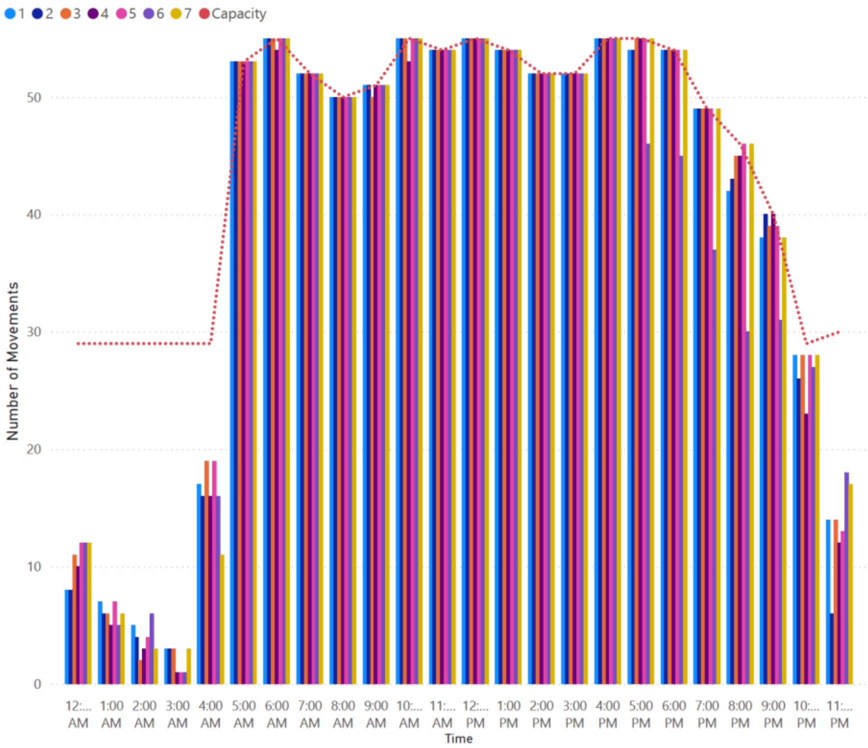
7. This shows that, in the Baseline Case, the Applicant assumes an increase of 47 daily aircraft movements in the peak by 2032. On a year round basis, this this uplift in the peak would account for just over 17,000 of the required uplift in aircraft movement assuming these additional 47 movements were operated on a fully year round basis.

8. Annex 6 to the Forecast Databook **[APP-075]** goes on to suggest on page 6 that, over the year as a whole, the increase in short haul flights would be an average of 48 although only 10 of these would be operated in peak periods, meaning that substantially more of the additional daily flights are assumed to operate only outside of the peak as we discuss further below. No explanation is provided as to what these flights would be and why it can reasonably be assumed that such additional operations would not also require peak slots. Adding 48 daily short haul flights and 37 daily long haul flights would broadly equate to the increase in movements required to achieve a 30,000 annual movement uplift in 2032. There would need to be further growth thereafter to attain the full 43,000 increase in annual aircraft movements to deliver the Baseline Case in full.

9. In 2019, the total number of daily slots made available to airlines for the main 17 hour day (06:00 to 23:00 local time) was 870 and we understand that the average number of actual movements each day in the peak month was 845 from information provided the Applicant.

10. In 2024, the Applicant has increased the declared capacity for the same 17 hour period to 882 slots, which we assume relates to the increased capacity available through the provision of an additional fast turn off to the main runway. Our examination of the Start of Season scheduling report produced by the slot coordinator, Airport Coordination Ltd, is that most of these slots have already been allocated on busy days in 2024, as illustrated in **Figure 3** below, although we accept that there will be some attrition in terms of the actual number of achieved movements as the season progresses due to airline cancellations of reserved slots, leaving some headroom for further growth beyond 2024 within the capacity already declared.

Figure 3: Allocation of Slots for Summer 2024



Source: Airport Coordination Ltd

11. Although 882 daily movements have been declared in 2024, we would highlight that the simulation modelling of the Baseline capacity, as described in **REP1-054,** was based on the profile of slots set out on pages 3 and 4 of Annex 7 to the Forecast Databook **[APP-075]**, which is less than currently declared. For 2038 and 2047, the total number of movements assumed in testing the capacity of the single runway in the Baseline Case was 869 for the 17 hour day.

12. Having examined the simulation modelling of this Baseline throughput, we note, from Table 9 of **REP1-054**, that runway holding delays remain high at this number of movements based on current performance, which does allow for the new rapid exit taxiway but not, other, more speculative potential improvements to procedures. Our examination of the simulation video[1], suggests that the airfield is close to gridlock in the peak at this level of movements such that we do not have confidence that additional movements could be scheduled during the day sufficient to accommodate an additional 47 daily flights, over and above those operated in 2019, noting that 47 additional daily flights would not themselves be sufficient to deliver 67 mppa in 2047 from a single runway in any event.

13. Hence, it is not clear that the practically achievable capacity of the single runway will accommodate more movements than are already scheduled in the peak for 2024, i.e. an effective

[1] Provided to us on a confidential basis by the Applicant.

increase of 12 flights per day in the number of flights actually operated, i.e. assuming a broadly constant relationship in terms of the average number of actual movements per day over the peak month out of the total pool of declared slots as reported by GAL for 2019. As set out above, to achieve 67 mppa with 43,000 additional annual aircraft movements, an average of 118 flights a day would need to be added year round.

14. The Applicant's own case is that the number of additional movements on a busy day (as simulated) would only be 24 (869 minus 845), which is still significantly less than the number of additional flights that need to be added 365 days a year to achieve the increase in 43,000 annual aircraft movements and less than the 47 indicated as required to deliver the claimed growth in Annex 6 to the Forecast Databook **[APP-075]**. Hence, it is clear that the Applicant assumes that most of the growth in annual aircraft movements will be achieved without such additional services requiring to operate in the peak.

Peak Spreading

15. As noted above, attaining the overall movement uplift in the Applicant's original Baseline Case requires the 118 additional flights stated to be operated year round, both in the peak and in the off-peak months. If fewer flights can realistically be added in the peak, then this would place an even greater emphasis on adding services in the shoulder and winter months only.

16. However, adding new services that operate consistently on a year round basis does, of itself, have the effect of reducing the proportional difference between peak month throughput and off-peak month throughput. So, for example, adding 12 daily flights year round would reduce the ratio of movements in the peak month (August) to the average month[2] from 1.164 in 2019[3] to 1.161. 24 additional daily flights would reduce the ratio to 1.159, 47 additional daily flights would further reduce it to 1.154 and 118 additional daily flights to 1.142. Hence, peak growth of itself delivers an element of peak spreading and, to a large extent, our analysis set out in **REP3-123** (Figure 1) would suggest that this is what has driven growth and a spreading of the peak at Gatwick over the 2013-2019 period. We cannot identify substantive evidence that Gatwick has actually seen daily movement growth in winter higher than in summer on a consistent basis, albeit some years have shown growth in winter relative to summer and others the converse.

17. In practice, the Applicant's Baseline Case shows only 2 mppa being added through additional peak growth. At the average passengers per aircraft movement assumed by the Applicant at 2047 of 206 (224 seats at 92% load factor - Table 10.2-1 of the Forecast Databook **[APP-075]**), this would account for an additional 9,700 out of the 43,000 movement uplift shown as required to achieve 67.2 mppa in the Applicant's Baseline Case. Achieving this growth would require an additional 27 daily flights to be added year round, which is more than the increase in peak daily movements allowed for in the simulation modelling as noted in paragraph 14 above. However, the difference could potentially be accommodated outside of the 17 hour peak period to which the Applicant refers in relation to declared slots and throughput.

18. With this as a starting point, the calculation below illustrates the difficulty in assuming that an additional 5 million passengers, as in the Applicant's Baseline Case could realistically be attained through spreading the peak:

- Assuming that a maximum of 27 movements a day could be added over three peak summer months (92 days), this would require the remaining projected growth of 33,300 movements to be achieved over the rest of the year;

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[2] Calculated as 31 times the average day over the year

[3] Using CAA Monthly Airport Statistics.

- Assuming these movements could not be accommodated during the peak 3 months, this would require an average of 122 additional daily flights (over and above the 27 assumed to be added year round) to be added over the remaining 9 months of the year;

- To the extent that the achievable year round growth in daily movements, including in the peak period, is less than 27, this would require even greater growth in services that are only operated outside of the summer peak.

19. Given that peak operations are the most profitable for the airlines, as explained by the Applicant at paragraph 6.1.32 of **REP3-079**, we do not consider it plausible that so many additional flights would be operated only outside of the peak period. Rather, our overall analysis set out here and in **REP3-123** would suggest that overall growth is more likely to be pro-rata to the ability to accommodate more movements in the peak period.

20. We do accept that, on the margin, price incentivisation may allow for some extension of the operating season for services that currently only operate at peak periods but we have not separately calculated this as it is likely to have a relatively marginal impact within the range of outcomes set out below.

Aircraft Size

21. The Applicant shows 9 mppa of the Baseline growth as coming directly from aircraft size growth, i.e. the increase in the number of seats on each aircraft. The 9 mppa is calculated by applying an uplift from 192 seats per aircraft in 2019 to 224 seats per aircraft in 2047 applied to the 2019 movement total of 283,000 movements to give an uplift in passengers of 9.1 mppa, i.e. which appears not to, of itself, double count the growth assumed from accommodating additional movements also at this larger aircraft size on average, with the load factor also adjusted upwards.

22. However, given the extent to which we assess that there would not be the runway capacity available to accommodate the full range of additional long haul movements assumed by the Applicant, as shown in **Figure 2** above, there may be some downward pressure on the attainable average number of seats on each aircraft. Looking at the scope for growth in the average size of aircraft operating in the short haul market, we estimate that the number of seats per aircraft movement in 2024 to be some 2.5% higher than in 2019 as the airlines are already transitioning their fleets to newer generation higher capacity aircraft. Allowing for the ongoing transition in the short haul fleet and the more limited scope to accommodate new long haul services than the Applicant has assumed, we consider that 218 seats per aircraft would be a more reasonable assumption in the Baseline Case at 2047.

Load Factor

23. As well as assuming a 17% increase in seats per aircraft, the Applicant assumes an uplift in load factor (the proportion of seats occupied on each flight) of 6% from 86% to 92%. This increase accounts for, some 3.5 mppa of the growth assumed by the Applicant in the Baseline Case, when applied to the number of aircraft movements operated in 2019.

24. Although some airlines do operate regularly with load factors in excess of 90% over the year as a whole, many airlines operate at below these levels. There is also a natural ceiling on the load factor as markets are not exactly balanced, for example more people leave the UK at the start of a holiday period meaning that inbound flights will necessarily be more lightly loaded whilst the converse is true at the end of a holiday period. There are also seasonal differences in load factor and these will vary by market.

25. On balance, we consider that a more reasonable assumption for a long run year round load factor would be 90%, accepting that it is likely to be higher in peak periods.

Alternative Baseline Case

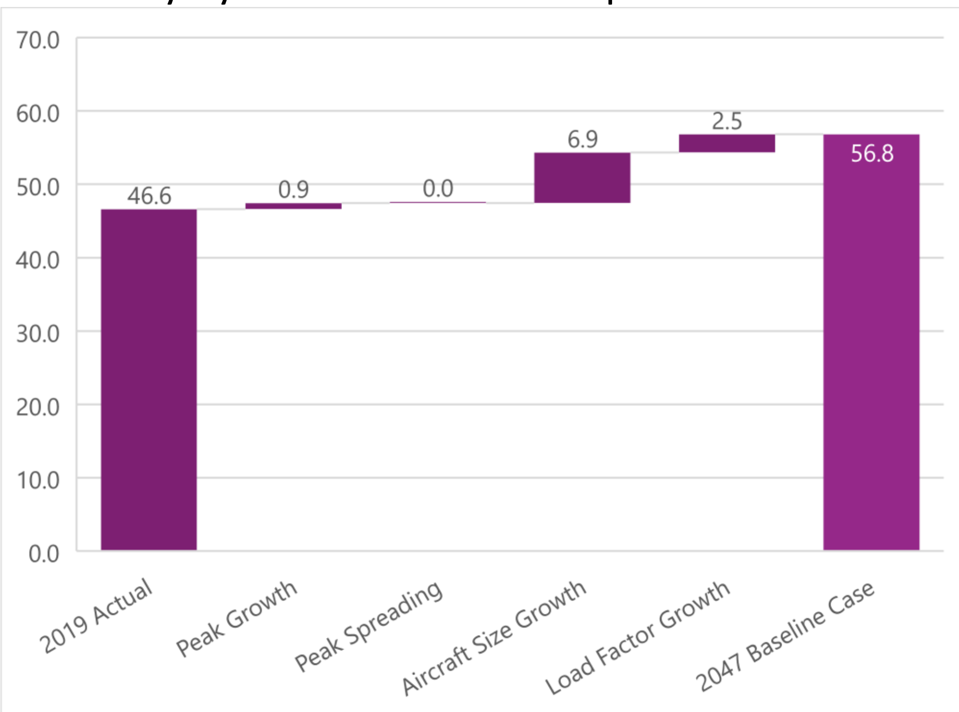
26. Based on our analysis above of the plausibility of the Applicant's Baseline Case, we have identified a range of reasonable assumptions to underpin the Baseline Case as set out in **Table 1**.

Table 1: Range of Baseline Case Assumptions

	Core Assumption	Optimistic Assumption	Commentary
Peak Growth	12 additional daily movements 287,000 annual commercial aircraft movements	24 additional daily Movements 291,000 annual commercial aircraft movements	12 daily movements reflects a pro-rata take up of the increased runway capacity already declared. 24 daily movements reflects the Applicant's assumed increase from 845 in 2019 to 869 movements on a busy day in 2047.
Peak Spreading	Negligible above that delivered through year round growth	Negligible above that delivered through year round growth	We cannot identify specific evidence that validates a substantial increase in services in winter that do not require additional peak slots.
Aircraft Size	218 seats per movement	224 seats per aircraft movement	The core assumption reflects some caution in aircraft size growth allowing for fewer new long haul services to be introduced. The optimistic case adopts the Applicant's assumption.
Load Factor	90%	92%	The core assumption reflects some caution in load factor growth taking into account the natural asymmetries in demand and seasonality. The optimistic case adopts the Applicant's assumption.

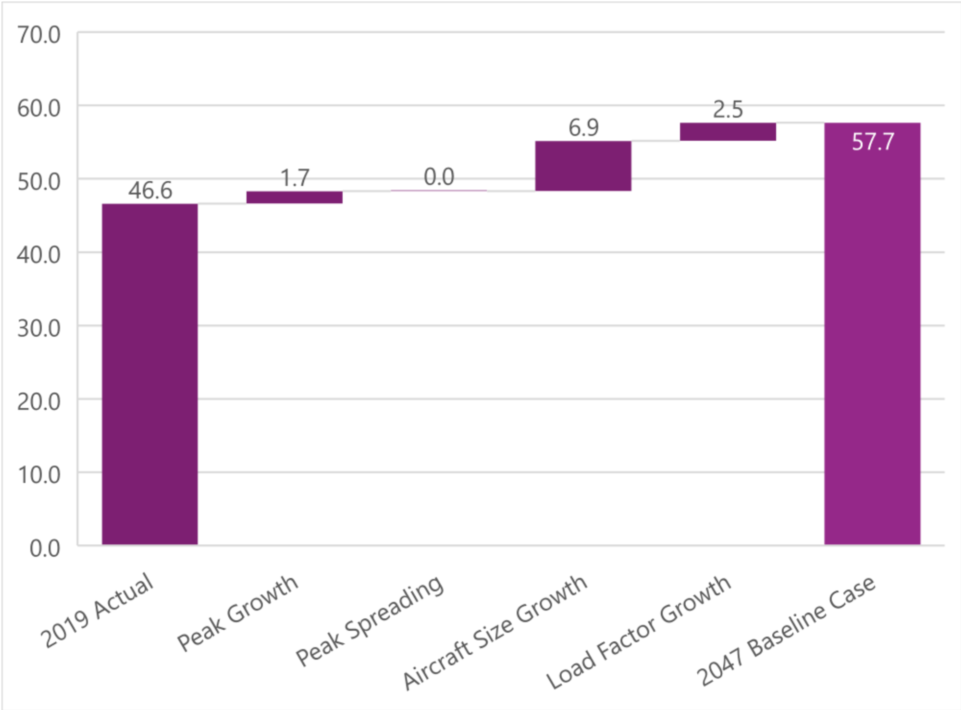
27. On this basis the range of outcomes for the Baseline Case is illustrated in **Figures 4** to **7** below.

Figure 4: 12 Additional Busy Day Movements - YAL Fleet Assumptions



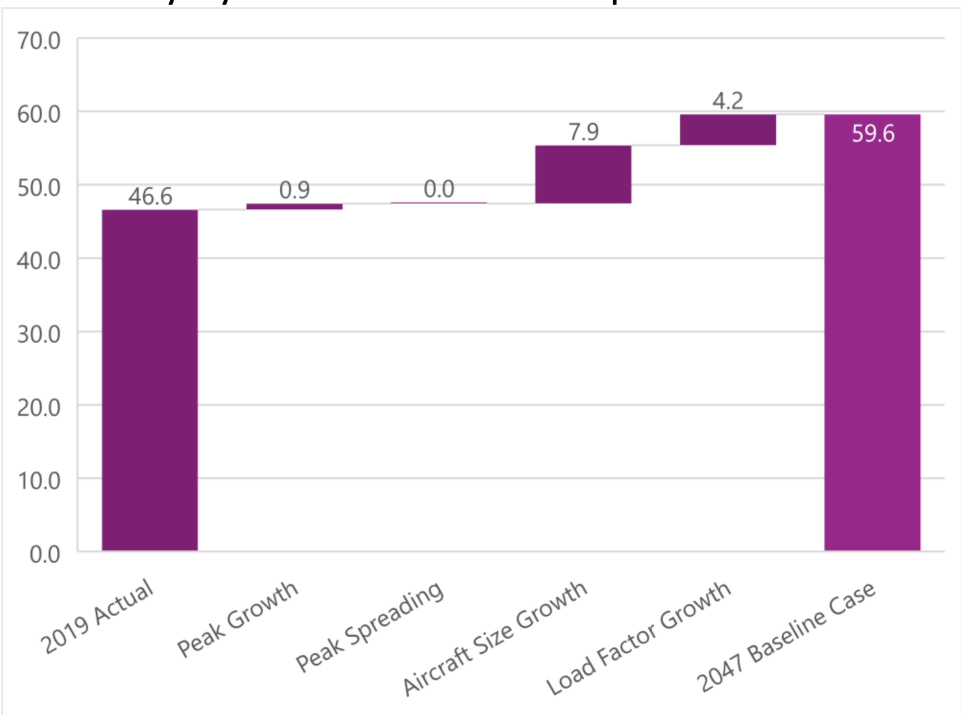
Figures may not sum due to rounding

Figure 5: 24 Additional Busy Day Movements - YAL Fleet Assumptions



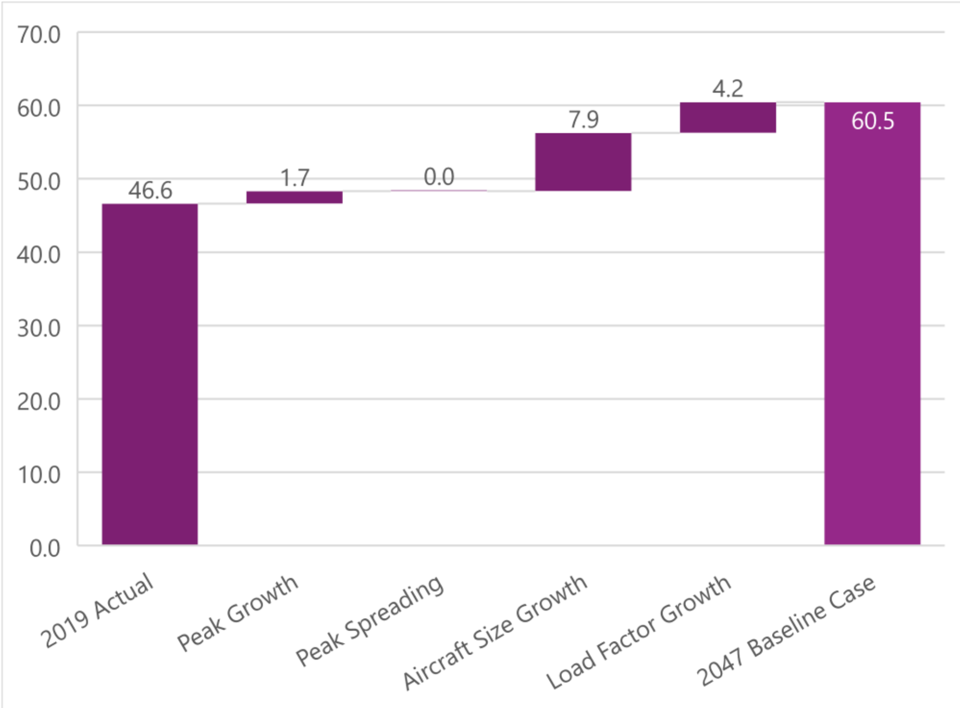
Figures may not sum due to rounding

Figure 6: 12 Additional Busy Day Movements - GAL Fleet Assumptions



Figures may not sum due to rounding

Figure 7: 24 Additional Busy Day Movements - GAL Fleet Assumptions



Figures may not sum due to rounding

28. On this basis, a reasonable range for the Baseline Case would be between 56.4 mppa and 60.1 mppa.

Consequences for the With Development Case

29. We have considered the extent to which our alternative view of the key factors driving growth in the Baseline Case would impact on the NRP Case. We note that, according to Annex 6 of the Forecast Databook **[APP-075]**, as reproduced in **Figure 2** above, the NRP growth assumes an increase of 190 daily flights in peak periods 2032, which would deliver c.70,000 growth in annual aircraft movements in 2032, less than the uplift of 95,000 movements shown in Table 10.1-2 of the Forecast Databook as required to deliver the Baseline passenger forecast at that date.

30. In terms of the position at 2047, comparing the assumed increase in hourly movements with the NRP compared to the Baseline Case on pages 4 and 6 from Annex 7 of the Forecast Databook **[APP-075]** shows that the increase in movements over the 17 hour day in 2047 is expected to be 207 above 2019 levels by 2047, which would deliver c.75,500 additional movements over the year, again less than the annual movements in the NRP Case at 2047 of 386,000, an increase of 103,000 annual commercial aircraft movements, i.e. an increase in the number of flights daily on average of 282.

31. Assuming the increase in 207 movements on a busy day, as modelled for capacity purposes and assuming a similar ratio of total daily movements to 17 hour movements as in 2019, this would suggest that the increase in movements on an average day in the peak month would be of the order of 222. Assuming these movements were added over the year as a whole, this would result in annual commercial aircraft movements with the NRP of c.366,000 compared to 386,000 in the NRP Case as presented by the Applicant. At this throughput, the ratio of the busy month to the average month would further have declined to 1.127 indicating further peak spreading driven by peak period growth.

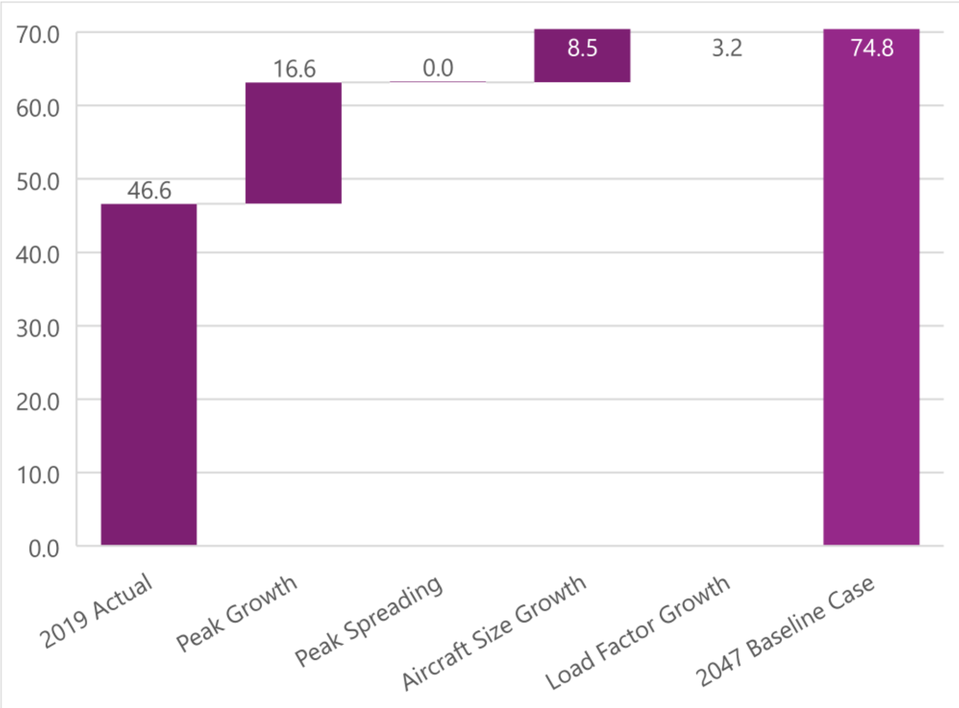
32. We do note, however, that the detailed simulation results for the NRP as presented in **REP1-054** and the accompanying video (provided by the Applicant on a confidential basis), would suggest that there could be some greater headroom over the longer term when all of the infrastructure, including Charlie Box, is in place, even without allowing for future performance enhancements as delays are less than in

the Baseline Case. Whereas previously, based on the Applicant's original modelling, we had some doubts about the deliverability of the stated hourly capacity of the NRP, the more recent information provided by the Applicant has largely addressed these concerns, pending an outstanding clarification requested from the Applicant regarding the calibration of the model to ensure that it properly reflects historic levels of delay. Our current view is that it may still be possible for the Applicant's target of 386,000 annual aircraft movements to be delivered with the NRP over the longer term.

33. We would accept the Applicant's assumed aircraft size, at 227 seats per movement, to be reasonable for the NRP Case but retain the same caution over long term average load factors.

34. Hence, our reasonable range for the throughput attainable over the longer term with the NRP would lie between 74.8 mppa (366,000 annual movements at 90% load factor) and the Applicant's NRP case. The components of the lower bound case are illustrated in **Figure 8** below.

Figure 8: Low Case with the NRP - 366,000 annual movements, YAL load factor assumption



Figures may not sum due to rounding

35. Although, subject to the caveat above regarding the calibration of the runway simulation model, we now accept that the NRP is likely to deliver the uplift in hourly and daily aircraft movements claimed by the Applicant, and may even deliver slightly greater capacity once all of the infrastructure is delivered, it remains our position that the rate at which demand will be attracted to Gatwick is likely to be slower than anticipated by the Applicant and, ultimately, is likely to depend on the extent to which other airports in the London area expand their capacity over the same time frame. The rationale for this is set out more fully in **REP3-123**.

36. If the ceiling on annual aircraft movements is 366,000, at the Applicant's load factors, the passenger throughput attainable with the NRP over the longer term would be 76.5 mppa, whereas applying YAL's load factor assumption to 386,000 annual movements would imply a passenger throughput of 79.4 mppa attainable over the longer term. These lie within the range 74.8 to 80.2 mppa.

37. We summarise our position in relation to the Baseline compared to the NRP Case in **Table 2** below.

Table 2: Potential Alternative Baseline and NRP Cases

	DAILY MOVEMENTS			AIRCRAFT SEATS AND LOAD FACTOR				ANNUAL COMMERCIAL MOVEMENTS	MPPA
	Average Day Peak Month	Average Day 92 Day Leq period	Annual Average	YAL Aircraft Size	YAL Load Factor	GAL Aircraft Size	GAL Load Factor		
BASELINE									
12 ADDITIONAL DAILY MOVEMENTS	921	905	793	218	90%			290,000	56.8
						224	92%	290,000	59.6
24 ADDITIONAL DAILY MOVEMENTS	933	917	805	218	90%			294,000	57.7
						224	92%	294,000	60.5
NRP CASE									
366,000 ANNUAL MOVEMENTS	1,131	1,115	1,003	227	90%			366,000	74.8
						227	92%	366,000	76.5
386,000 ANNUAL MOVEMENTS	1,189	1,164	1,052	227	90%			384,000	78.4
						227	92%	384,000	80.2

38. There are clearly many permutations that could be tested but we consider that it would be reasonable to test the difference between our most pessimistic cases and also between our most optimistic cases for consistency of assumptions regarding aircraft size and load factor, i.e.:

- between a Baseline Case at 56.8 mppa and an NRP Case at 74.8 mppa;
- between a Baseline Case at 60.5 mppa and an NRP Case at 80.2 mppa.

YAL/15.5.24