Gatwick North Runway Project
Response to Technical Document [REP1-047, REP1-052, REP1-053 and REP1-054]

1. York Aviation (YAL) has been appointed by the Host and Neighbouring Authorities, collectively known as the Joint Local Authorities (JLAs), to provide advice in relation to aviation capacity, need and forecasting, and aspects of the socio-economic case for Gatwick Airport Ltd's (GAL) North Runway Project (NRP). This submission is prepared in response to the above listed documents.

2. At the outset, it is important to highlight that there is an interdependence between the physical capacity deliverable with the NRP, in terms of hourly and daily capacity available having regard to acceptable standards of service for the airlines **[**see **RR-1256, RR-1493, REP1-198]**, and its ability to attract a share of the underlying market within which Gatwick competes with other airports to attract airlines to operate services to meet passenger demand.

3. Throughout the process, we endeavoured to address these issues holistically so as to provide a consolidated view on the number of passengers and aircraft movements that might reasonably be expected to use Gatwick Airport with and without the NRP development in future years so as to inform consideration of the impacts.

4. The piecemeal nature of the material submitted by GAL has made this challenging. In this submission, we summarise our current understanding on the likely throughput attainable with the NRP and without in the Baseline Case drawing on the material submitted by the Applicant. Although we have attempted to deal with each document individually, there is inevitable cross over in the material. However, there are areas where there remains lack of clarity and these are highlighted where relevant. Discussions remain ongoing with the Applicant.

Note: paragraph references throughout refer to GAL's submitted documents unless otherwise stated.

NEEDS CASE TECHNICAL APPENDIX [REP1-052]

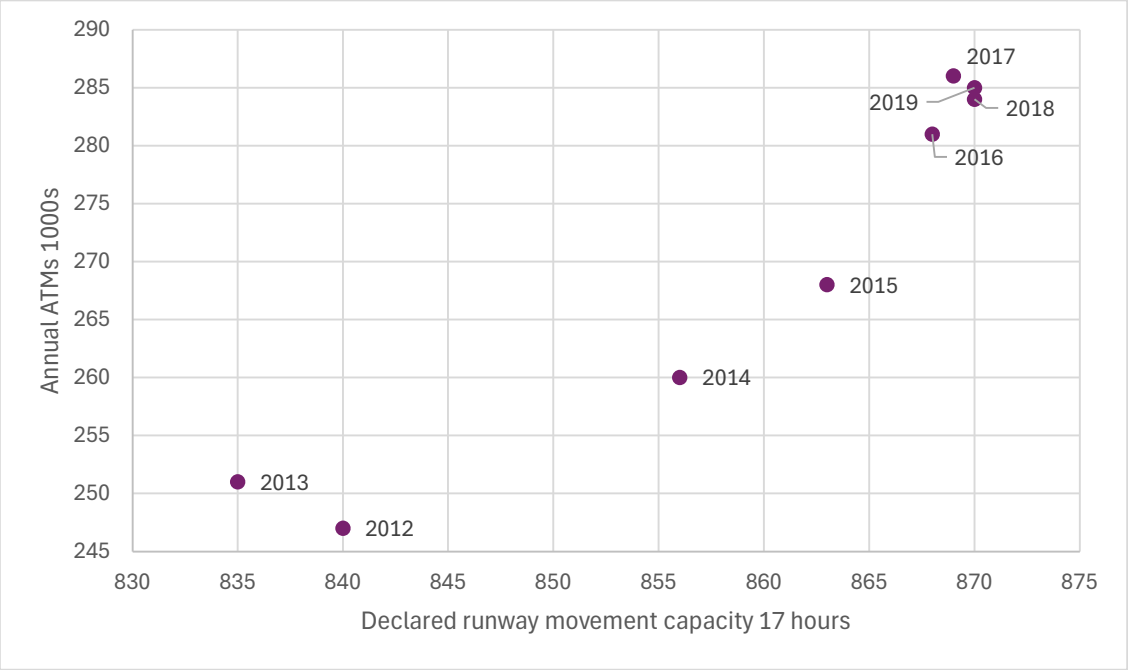
Section 1 – Gatwick Airport Today

5. We note, that at paragraph 1.2.1, GAL acknowledges that growth has slowed since 2016 because of the Airport's inability to meet demand in peak periods. We consider this to be material to establishing the reasonable baseline case for assessment as no clear evidence has been provided as to why such constraints would not continue to slow growth, making the attainment of 67.2 mppa in the baseline case highly unlikely. As set out at paragraph 12 of Appendix F to the Joint West Sussex LIR **[REP1-069]**, recovery at Gatwick has lagged other major airports in the UK, particularly Heathrow and Stansted and we believe that this is not unconnected with the airlines' ongoing concerns about the level of service and delays at the Airport and is also reflective of the lack of peak period capacity meaning that airlines cannot obtain slots at the times they require . Despite GAL's claims of excess demand (paragraphs 1.3.2, 2.7.4), the number of seats being offered by the airlines in Summer 2024 remains 1.5% less than

in 2019 whilst the airlines at Heathrow are offering 3.1% more seats and those at Stansted 7.7% more seats[1].

6. Although there is some evidence of growth through peak spreading in terms of an increase in activity in the winter months (Figure 3), growth appears to have been more closely related to increases in declared runway movement capacity. These increases appear to have largely stalled since 2016, potentially reflecting the risk of increased delays from any further intensification in the number of movements on any given day. This is illustrated in **Figure 1** below.

Figure 1: Relationship between Annual ATMs and declared 17 hour runway movement capacity[2] at Gatwick

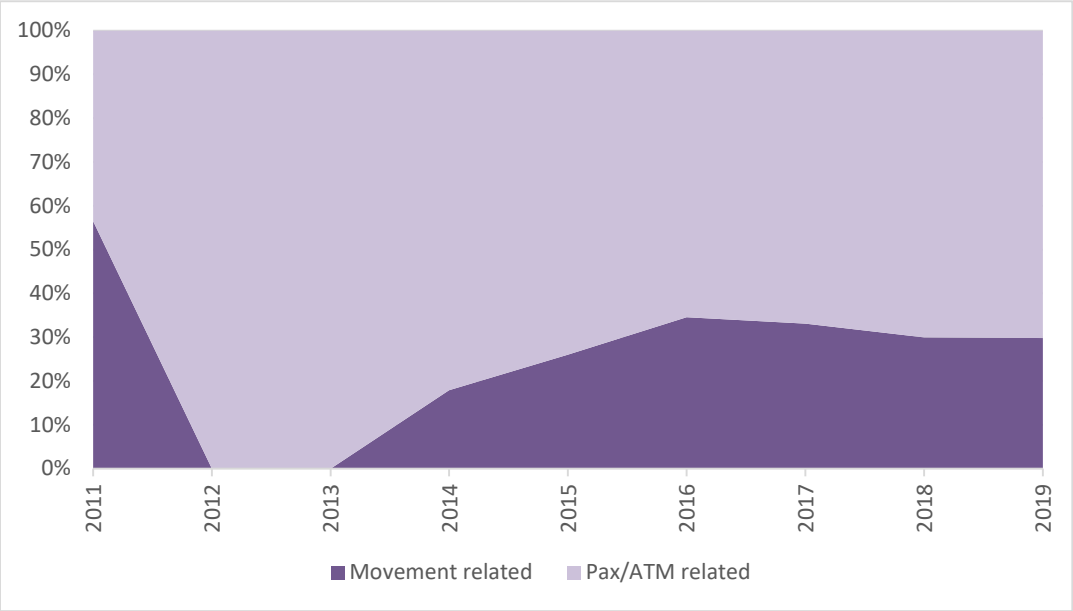


7. In terms of overall passenger growth, we assess that, prior to the pandemic, 70% of passenger growth was accounted for by growth in the number of passengers per aircraft and only 30% due to intensification of the use of the runway as shown in **Figure 2**. This is relevant to considering the extent to which further growth is attainable with only a single runway in use in the baseline given the absence of the scope for material growth in available slots.

[1] Online Airline Guide as at 14.4.24.

[2] Airport Coordination Ltd, Gatwick Summer Season Capacity Declarations.

Figure 2: Gatwick Airport Drivers of Passenger Growth.



8. We address this further in relation to the Technical Note on Future Baseline **[REP1-047]** later in this submission.

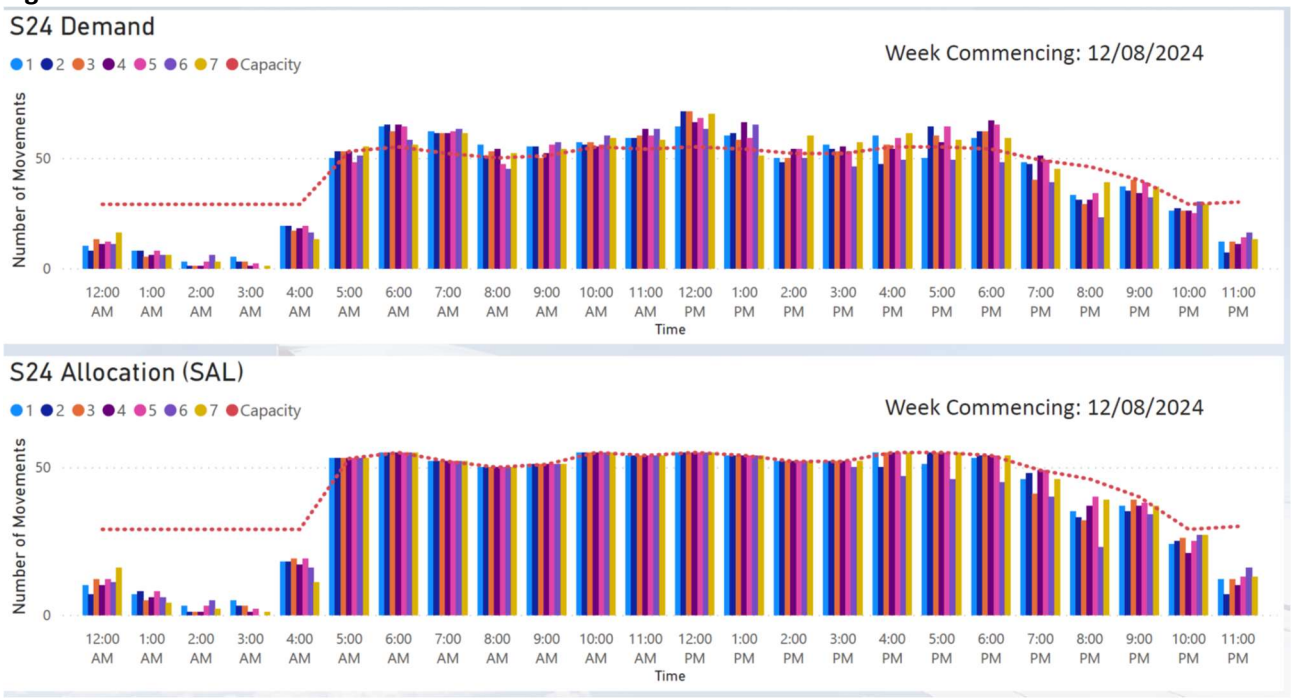
Section 2 – The London Aviation Market

9. Generally, we concur with the scale of the London aviation market as set out by the Applicant in this section but, in relation to the existence of constraints, these are specific to individual airports and less relevant at the overall market level except in so far as they inform consideration of what traffic is likely to 'spill' from one airport to another when constraint bites. In this regard, understanding Heathrow's unique role in relation to transfer traffic is important to understanding the extent of spill that Gatwick might attract if Heathrow remains constrained. In that regard, we believe that the scale of point to point demand claimed by GAL (paragraph 2.3.2) may be too high, see paragraph 26 below. This is material to considering forecasts of future demand and throughput.

10. Whilst noting the historic levels of excess demand for Gatwick claimed at paragraph 2.7.4, it is unclear how this excess demand could be accommodated in the baseline case. In **Figure 3**, we illustrate the demand for slots and the allocation of slots for summer 2024 at Gatwick[3]. This demonstrates that, despite excess demand for slots on most days of the week through the main part of the day, there has still been limited willingness of the airlines to use spare capacity available in the evening period. We consider the implications for demand forecasts further later in this note.

[3] Airport Coordination Ltd, Gatwick Airport Start of Season Report Summer 2024.

Figure 3: Slot Demand and Allocation Summer 2024



Section 3 – Gatwick's Position

11. This section provides secondary contextual material as to the case for growth at Gatwick.

12. In relation to capacity required at other airports to accommodate growth (paragraph 3.5.2) over the next decade and more, with the exception of Heathrow, the other airports have planning applications already in the decision- making process to provide adequate terminal capacity to meet their assessed demand and, in the case of Stansted, approval has already been granted[4]. Additional terminal capacity will also be required as part of the DCO works at Gatwick.

Section 4 – Gatwick's DCO Forecasts, Principles and Approach

13. Whilst a bottom up forecast, such as presented by GAL in its application documents, is a useful approach over the short term – typically 5 to 10 years maximum – as it can better reflect short term airline decisions as to deploying capacity at an airport, we do not accept that it is a uniquely preferred approach in the case of a constrained airport or airport system. A bottom approach is necessarily subjective and relies almost entirely on the judgement of the forecaster as to the capacity that the airlines will be willing to offer. We also note that, in so far as GAL sets out the basis of its bottom up forecasts in Annex 6 to the Forecast Data Book **[APP-075]**, this addresses only the period to 2032 and there is no underpinning detailed analysis to support the growth over the longer term. We do not agree with GAL's position that it is not possible to model the effect of constraint through the use of shadow costs, as applied in the Department for Transport's (DfT's) passenger allocation model[5]. As discussed in Section 6, GAL has gone on to build a pseudo-allocation model but adopted a more basic deterministic approach to 'spill' than the calibration of a dynamic model including the use of shadow costs to drive re-allocation.

14. For the reasons set out later in this submission, we do not accept that the bottom up forecasts are superior to reasoned analysis through a properly calibrated allocation model. Although some doubts remain about the robustness of GAL's allocation model, due it being overly deterministic, we believe

[4] The Planning Inspectorate, Decision Notice and Statement of Reasons, Application Reference: s62A/2023/0022, 31st October 2023.

[5] Department for Transport, UK Aviation Forecasts 2017, paragraph 2.38.

that the results of the additional top down modelling carried out by GAL are to be preferred to the original DCO forecasts as presented and that the updated modelling should be used to inform the assessment of impacts, subject to the caveat that the results are ultimately based on the attainability of the assumed uplift in capacity, which we address later in this submission.

Section 5 – Gatwick's DCO Forecasts, Detailed Build-up

15. This section discusses the assumptions used in each step of building up the demand forecast in the baseline and the NRP case.

Peak Period Capacity

16. As is clear from paragraph 5.2.8, the fundamental approach to the demand forecasts is based on developing 'busy day timetables' that appear to assume that, at any given point in time, all available runway capacity is taken up. Given the methodology adopted by the Applicant, the outcome of the forecasting exercise is entirely dependent on the robustness of the assessment of capacity available over a busy day, including in critical busy periods of the day, as, in essence, the forecast simply fills available capacity based on GAL's assertion that demand, both now and in the future, will always exceed available capacity. In relation to the first principle of GAL's approach - capacity available, this is addressed further later in this note in relation to the Capacity and Operations Paper **[REP1-053]**. We comment here on the approach taken to how capacity would be used without prejudice to whether the quantum of capacity to be delivered by the NRP has been validated.

17. Given that no further increase in runway movements is proposed in the baseline case over the main 13 hour period (05:00-18:00 UTC) on a busy day, as considered in Table 12, with 693 movements already declared for this period in summer 2024[6] compared to an assumed 683 such movements assumed in future on page 3 to Annex 7 to the Forecast Data Book **[APP-075]**, it is difficult to see how a higher proportion of the unmet demand could be met in future in the baseline as the only additional slots would be in the evening and, to the extent that some of these additional movements were departures to short haul points, are likely to generate a demand for increased arrivals in the night period and these do not appear to have been allowed for by GAL. This means that all growth will need to come through growth in the off-peak seasons and through growth in the average numbers of passengers per aircraft movement, including to the extent that long haul operations displace short haul within the constrained number of slots available.

Annual Throughput – Seasonality

18. In relation to seasonality, Figure 25 shows the assumptions made by GAL as to how the ratio of the peak to average month would continue to fall at Gatwick. However, little explanation is provided as to what drove the reduction in seasonality over the period 2014-2019 and what is expected to drive ongoing change. Notably, Table 13 omits Gatwick's largest operator easyJet. We believe that much of the change over the 2014-2019 period derives from the decline in seasonal charter operations, as shown in Figure 33 with the loss of Thomas Cook, Monarch and XL as well as the decline in operations by TUI, and that this change may not be replicated in the future. Hence, we do not believe that the current assumptions as the extent of change in the seasonal profile of aircraft movement operations at Gatwick can be considered robust and are likely to overstate the growth attainable in both the baseline and NRP cases. This topic is addressed further below in relation to the separate paper on baseline capacity **[REP1-047]**.

[6] Airport Coordination Ltd, Gatwick Summer 2024 Season Capacity Declaration.

Aircraft Sizes and Load Factors

19. We note that GAL has updated its fleet transition assumptions for the purpose of considering seat capacity available (paragraph 5.2.28). Whilst this information is used to present a more 'bullish' estimate of seats and passengers per aircraft, it also means that the original assumptions as the modernisation of the aircraft fleet for noise assessment purposes are also out of date and need to be updated to reflect the new aircraft orders. This has implications for the assessment of aircraft noise and, in particular, for the setting of the Noise Envelope.

Airline Mix

20. In terms of the future airline mix and the realism of the assumptions, it is unhelpful that Tables 16 and 18 are heavily redacted, but we note that cross reference is made to Annex 6 of the Forecast Data Book **[APP-075]**. Although this report provides illustrative examples of market growth anticipated to different world markets, e.g. China, India, North and South America, as well as the short haul and domestic markets overall, it covers only the period to 2032 and simply asserts how many additional flights there would be required to meet demand growth and appears to assume that Gatwick would capture all or most of the increase (10 out of 14 additional flights to China for example) with the NRP. The baseline is consistently assumed to be able to capture half of the increase. We do not consider this a robust basis for developing a long term forecast.

21. The premise for GAL's analysis at the individual market level appears to have been simply to grow the assumed London area frequencies in line with the expected growth in the passenger market divided by the assumed average aircraft size (see India example on page 15 of Annex 6). However, in claiming that Gatwick could realistically capture the majority of the estimated increase in flights if it had capacity with the NRP, no account was taken of the fact that some 49.9% of passengers on current flights to and from India were connecting at Heathrow[7] and a further 11.6% were originating in or destined for regions beyond the South East or East of England and might not choose Gatwick as a realistic alternative. For China, the pattern is somewhat different with 12.2% of all passengers transferring at Heathrow but 25% of passengers originating in or destined for regions beyond the South East and East of England. There is no evidence that GAL has considered such factors in developing its bottom up forecasts highlighting why little reliance can be placed on that approach and the demand forecasts submitted with the application as a consequence. We note that, in terms of long haul[8] growth, the number of seats and flight frequencies at Gatwick in Summer 2024 remain below 2017 levels in aggregate terms.

22. A further consideration with these 'bottom up' projections is that they only address the period to 2032 and there is no information provided as to how the growth beyond 2032, at 72.3 mppa, to achieve the 80.2 mppa forecast for 2047 would arise.

Section 6 – Top Down Forecasts

Unconstrained Demand

23. As has been the difficulty with the material submitted by Gatwick since the original consultation in 2021, it is very difficult to verify the sources of data that have been used in the assessments and to derive the demand sources.

[7] According to CAA passenger survey data for 2019.

[8] Excluding Mediterranean North Africa.

24. At the outset, it is important to note that, when considering the DfT's demand projections underpinning the Jet Zero Analysis, whether the original forecasts[9] or those updated in March 2023[10], account has to be taken of the basis upon which the demand forecast was prepared, as discussed at ISH1. These forecasts assumed growth in capacity across all of the airports consistent with them making best use of their existing capacity, including the NRP Gatwick as well as Luton, London City, Stansted and the full range of regional airports. These forecasts also allowed for a third runway at Heathrow so as to test the climate change implications of all such growth being accommodated. To the extent that some of these capacity increases are not delivered, there would be some demand lost due to a combination of higher prices and loss of convenience, not all of this potentially lost demand at other airports would be available to Gatwick. Most significantly, the potential growth in transfer traffic at Heathrow would be lost, particularly given that GAL does not envisage the growth of Gatwick as a major hub **[REP1-056**, paragraph 4.1.6**]**.

25. When considering different options for airport expansion in the London area, the Department for Transport modelled different scenarios, including with a third runway at Heathrow or with the development of a fully spaced southern parallel runway at Gatwick. This was published by the DfT in *UK Aviation Forecasts 2017*[11]. At the time, the future demand forecasts were somewhat more optimistic than the more recent post-pandemic forecasts, with the expectation that unconstrained demand would reach 420 million passengers in 2040[12] in the central growth case, which is similar to the most recent 2023 unconstrained growth projection of 430 million passengers in 2050. What is notable is that, at an unconstrained demand of 420 million, there was a 17 million passenger difference in the forecast total UK demand that could be met between the scenario with a new northwest runway at Heathrow and a full second runway at Gatwick[13], which would have delivered substantially more capacity than the NRP. This can be accounted for by the specific hub role at Heathrow that would not be replicated elsewhere, as acknowledged in the ANPS[14]. In practice, with constraints still assumed at other airports in the DfT's 2017 forecast, only 370 million[15] out of the 420 million passenger demand was predicted to be met with a full second runway at Gatwick, absent capacity expansion elsewhere. Notably, despite excess demand in the system, not all of that was anticipated to use Gatwick as an alternative to a preferred airport despite Gatwick being projected, in 2040, to be using only 78% of the assumed capacity of the two runways at 560,000 annual aircraft movements for a fully spaced runway pair. Put simply, it cannot be assumed that all demand that cannot be met at one airport will necessarily use Gatwick simply because it has capacity available, yet this appears to be the underpinning assumption in GAL's approach to forecasting.

26. In its latest report, the Applicant has sought to correct for the transfer passenger issue by setting out analysis based on point to point demand using the London airports only, excluding transfer passengers in 2018. However, the source of the starting figure for 2018 of 160 million 'London for LGW, exc. Transfer' (Table 19) is unclear and appears to have been overstated as a start point. We understand from a note provided to us by GAL on 29th February that it has estimated that 69% of total UK point to point demand of 228 million passengers in 2019 uses the London airports. It is still unclear to us how these market estimates have been derived.

[9] Department for Transport, Jet Zero: further technical consultation, March 2022.
[10] Department for Transport, Sustainable aviation fuel mandate dataset, March 2023.
[11] Department for Transport, UK Aviation Forecasts 2017, October 2017.
[12] Ibid, Figure 6.1.
[13] There was additional unmet demand in these projections as, at the time, the Government had not modelled other airports than Heathrow or Gatwick expanding to make best use of their runways and some demand that would have chosen to use those airports if capacity was available was assumed lost to the system, all traffic does not necessarily spill the next alternative airport and, when any airport becomes constraint, some element of the demand that would have chosen to use it decides not to fly.
[14] Department for Transport, Airports National Policy Statement, June 2018, paragraphs 3.20 and 3.21.
[15] Department for Transport, UK Aviation Forecasts 2017, Table 34.

27. Using CAA Survey Reports for 2018[16], the number of point to point passengers starting or ending their air journeys using the 5 main London airports (Heathrow, Gatwick, Stansted, Luton and London City) was 140.7 million. Southend was not surveyed in that year but even if it was assumed that all passengers using Southend were travelling point to point, the total point to point demand would not exceed 142.2 million passengers. Hence, it would appear that ICF for the Applicant has overstated the base level of point to point demand for the London airports (155 mppa in 2018 in Table 20) from which it prepares its top down forecasts by some 13 mppa.

28. Applying the latest DfT overall market growth rate of 1.3% CAGR[17] to the true estimate of point to point demand using the London airports in 2018 would yield an estimated passenger demand of 215 million in 2050 compared to 277 million indicated as Table 19 as the original GAL forecast, or 235 million using the same 1.3% CAGR as shown in Table 20. On this basis, the Applicant appears to have started from an overstatement of the scale of the point to point London market from which it will draw passengers by of the order of 20 million passengers by 2050.

Airport Allocation

29. In Forecast Data Book **[APP-075**, Annex 5.3**]** and previous consultation materials, a 'top down' assessment was simply used a cross check for the reasonableness of the specific 'bottom up' demand forecasts by reference to the estimated scale of total demand for the London airports compared to existing consented capacity, albeit with some sensitivity testing. In **REP1-052**, the Applicant has now produced some further allocation type modelling to provide further validation of its forecasts using a quality of service index (QSI) derived from surface access time and the scale of the network. It is not entirely clear how this QSI metric has been calibrated and the extent to which it is used dynamically within the model to reflect network changes over time, which would be particularly relevant in scenarios where other airports are assumed to increase capacity.

30. Fundamentally though, as we understand the methodology, it simply cascades passengers from an airport that is deemed full to the next best alternative until all capacity is filled up within the London system (paragraph 6.3.48). For the reasons set out in paragraph 25, this is not realistic as it is reasonable to assume that some passengers would decide not to travel at each iteration not only those assumed to be spilled from the London system overall. This is demonstrated by the outcomes of the DfT's modelling. If GAL's approach had been considered valid by DfT in its 2017 forecasts, it would simply have filled up Gatwick's capacity when other airports became full. When rigorously modelled, this is not the expected outcome.

31. Also to the extent that a part of the demand currently using the London airports originates in or is destined for regions outside of the South East or East of England, regional airports are also developing their services over time and are generally less constrained in terms of capacity and so would be expected to re-capture at least some of their local traffic that currently uses the London airports.

32. Hence, notwithstanding that the Applicant has apparently done some more detailed modelling of the demand that would choose to use Gatwick if it had capacity available, some concern remains that the model is deterministic in simply assuming that passengers will always spill to the next best alternative within the London area, so this 'top down' approach remains highly theoretical and may tend to overstate the level of demand that would in fact remain in a constrained system and, hence, how many passengers would actually use Gatwick with or without the NRP. This is not least because, as pointed out at paragraph 64 of Appendix F to the Joint West Sussex LIR **[REP1-069]**, the Applicant's economic case **[APP-251]** postulates materially higher air fares in a constrained system than an unconstrained system, which would lead to some suppression of demand at each individual airport. There is some

[16] Available on the Civil Aviation Authority website.

[17] Compound Annual Growth Rate.

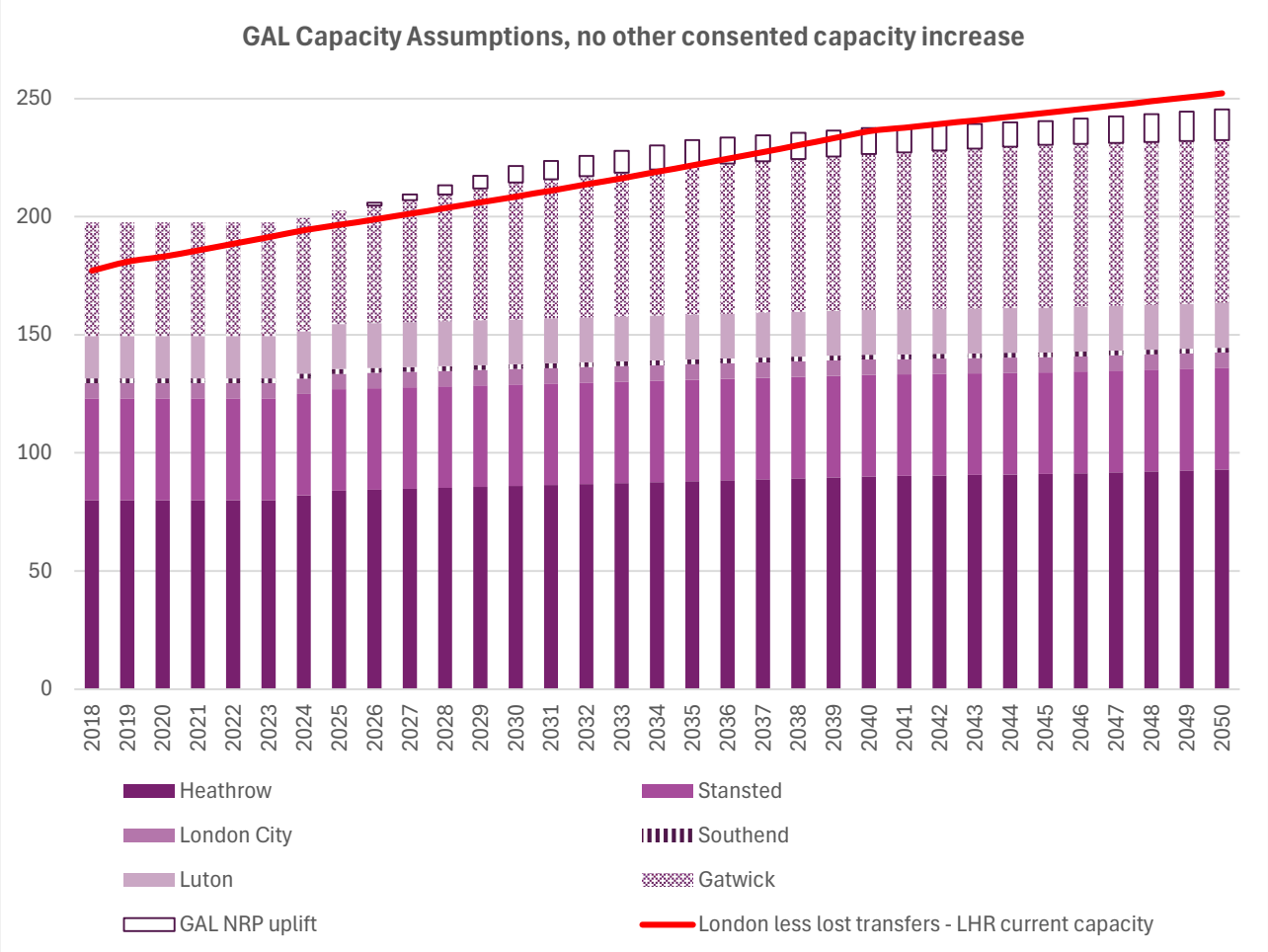
inconsistency, therefore, between the demand case being made by the Applicant and the economic benefits case.

33. We note that, even so, the comparison in Table 29 does show substantially slower growth in the early years, with passengers using the Airport with the NRP some 95% lower than the original 'bottom up' forecasts. This is material as the original 2032 forecast of 72.3 mppa in that year has been used to set the proposed Noise Envelope for the 1st Noise Envelope period, which means it has been set too large, leaving aside noted concerns about the fleet mix of aircraft assumed (see para 19). This will provide no incentive to deliver even the cautious fleet transition put forward by GAL over the early years of the project.

Outputs

34. Having noted the apparent discrepancies in the data used and, whilst it is not apparent how the estimate of the net scale of the London unconstrained demand has been estimated by GAL from the explanation provided in the paper, our estimate of the scale of the market after having allowed for the loss of some transfer passengers from Heathrow that would not be replicated elsewhere is similar to that shown in Figures 43 and 47 – see **Figure 4** below. For the purpose of this chart, we have assumed that the capacity deliverable in the Baseline and NRP cases is as stated by GAL, notwithstanding our reservations as to the achievability of the full levels of throughput claimed.

Figure 4: Demand and Capacity in the London Airport System with Gatwick NRP only



35. The principal concern remains that GAL has put forward a case that simply assumes no additional capacity is provided in the London system over the period to 2050, other than that already consented at Stansted and the 1 mppa increment at Luton. It is unclear to us why GAL considers that its scheme is uniquely consentable when other development proposals are not, including those already in the

consenting process for Luton and London City Airports leaving aside any future proposal in respect of Heathrow or, indeed, the other airports. It is also not possible to test the sensitivity of its case to changes in the underlying economic or cost assumptions.

36. For the reasons set out earlier in this note, we cannot agree that the 'bottom up' approach upon which Gatwick relies is robust and is to be preferred, as the Applicant asserts at paragraph 6.6.5, to a robustly modelled assessment of the demand that could realistically use Gatwick. To that end, GAL's modelled results would be preferred over the bottom up analysis but only subject to appropriate allowance being made for the probability of at least some additional capacity being consented at other airports over the period to 2050 and subject to the caveat above regarding the realisable capacity in the Baseline and with the NRP.

37. It should also be noted that, to the extent that GAL's updated modelling of the rate at which capacity provided by the NRP would be taken up, this has implications for the economic case as a slower take up of capacity would result in lower benefits in the earlier years, disproportionately impacting on the net present value (NPV) calculated. This concern is over and above more general concerns about how the benefits in terms of air fare savings have been calculated.

Section 7 - Sensitivities

38. In the first instance, GAL has considered the potential impact of a third runway at Heathrow on its forecasts and then considered separately, but not in combination with Heathrow, the impact of current applications for growth at Luton and London City Airports being approved. The outcomes from the updated modelling[18] compared to the original bottom up forecasts without capacity growth elsewhere are set out in **Table 1**.

Table 1: GAL's Forecasts and Sensitivity Tests

	2029	2030	2032	2035	2038	2044	2047
GAL Original	61.3	65.3	72.3	73.8	75.6	78.7	80.2
GAL Top Down Modelled	57.1	61.1	65.7	70.8	75.6	78.7	80.2
GAL Top Down Modelled with Heathrow R3	57	61	66	64	65	68	70
GAL Top Down Modelled with London City and Luton	67	60	65	70	74	78	80

39. We illustrate in **Figures 5**, **6** and **7** the demand capacity balance if other potential increases in airport capacity are approved, including at Luton, London City and Heathrow Airports. We have illustrated both an increase with mixed mode at Heathrow, assumed to add 15% to capacity, and a full third runway.

[18] As set out in Table29, Figure 52 and Figure 55.

Figure 5: Demand and Capacity in the London Airport System with Gatwick NRP and Growth at Luton and London City

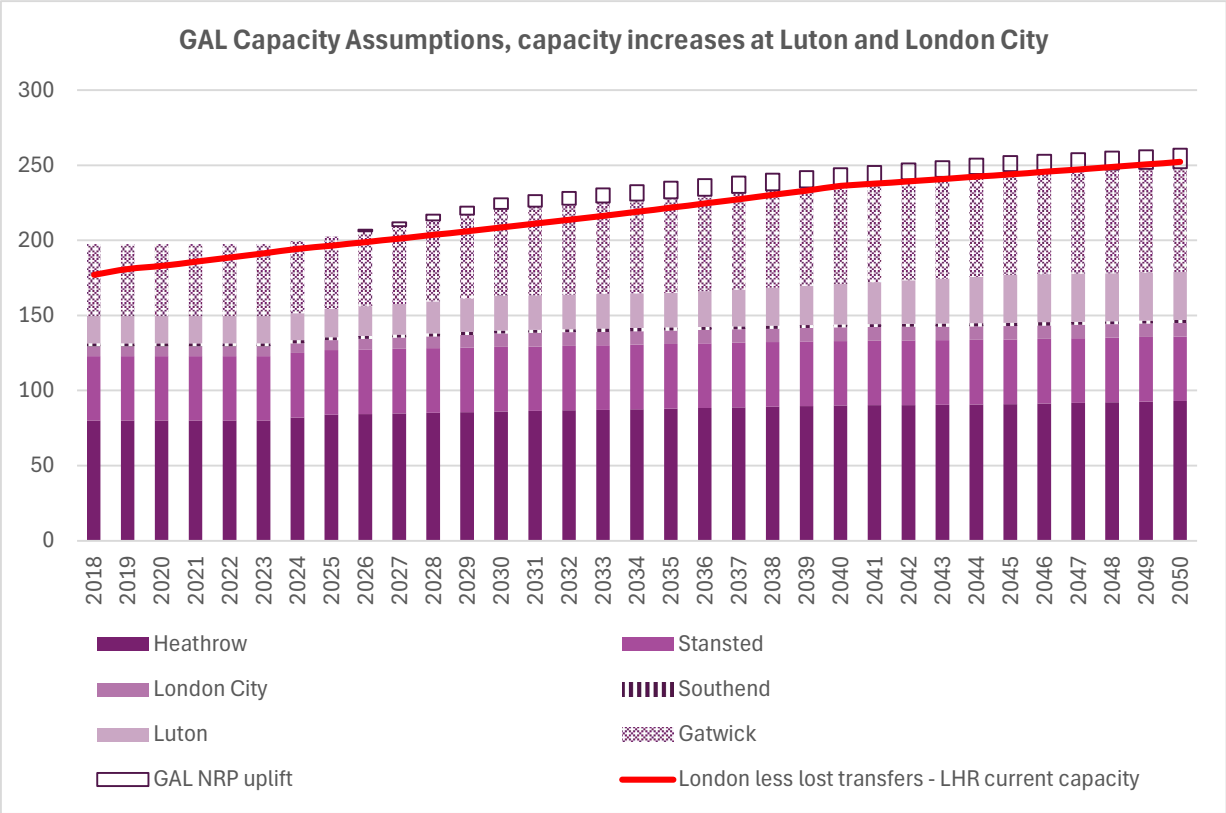


Figure 6: Demand and Capacity in the London Airport System with Gatwick NRP and Growth at Luton and London City plus Mixed Mode at Heathrow

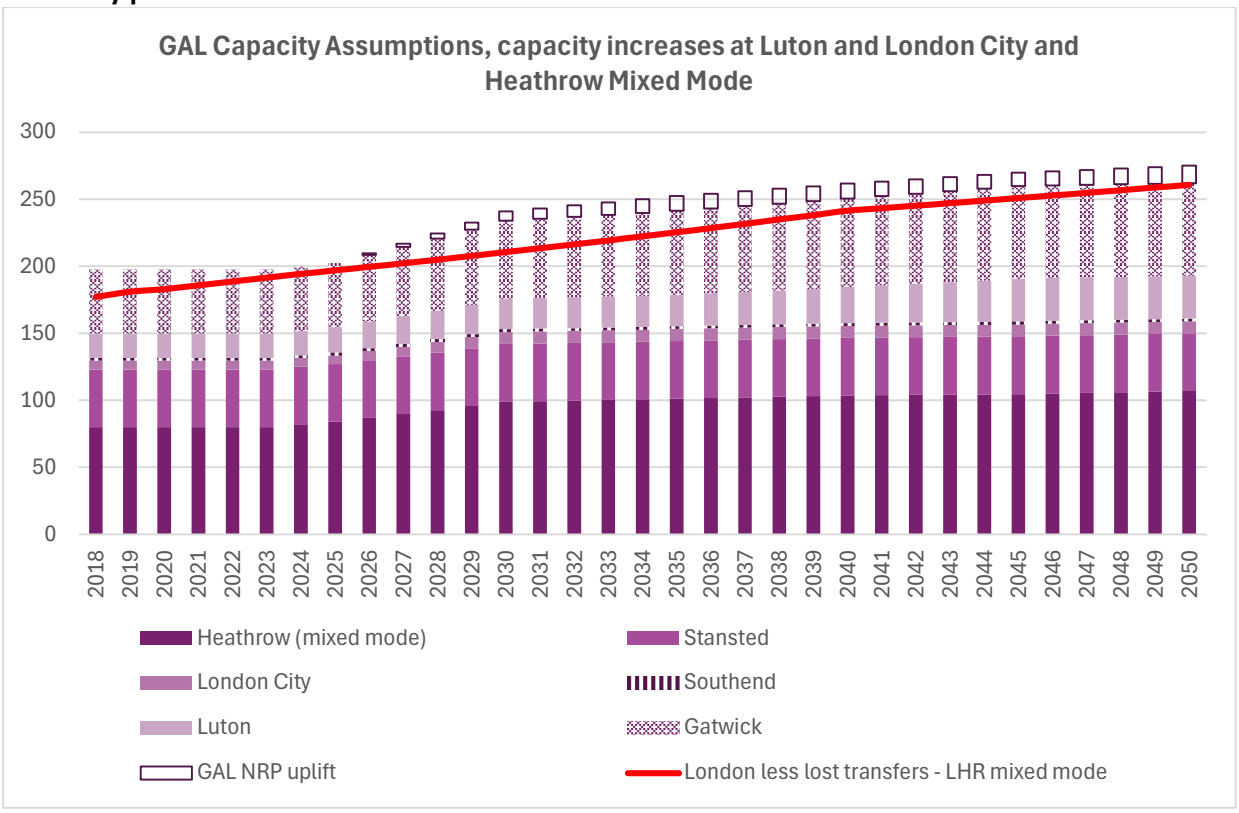
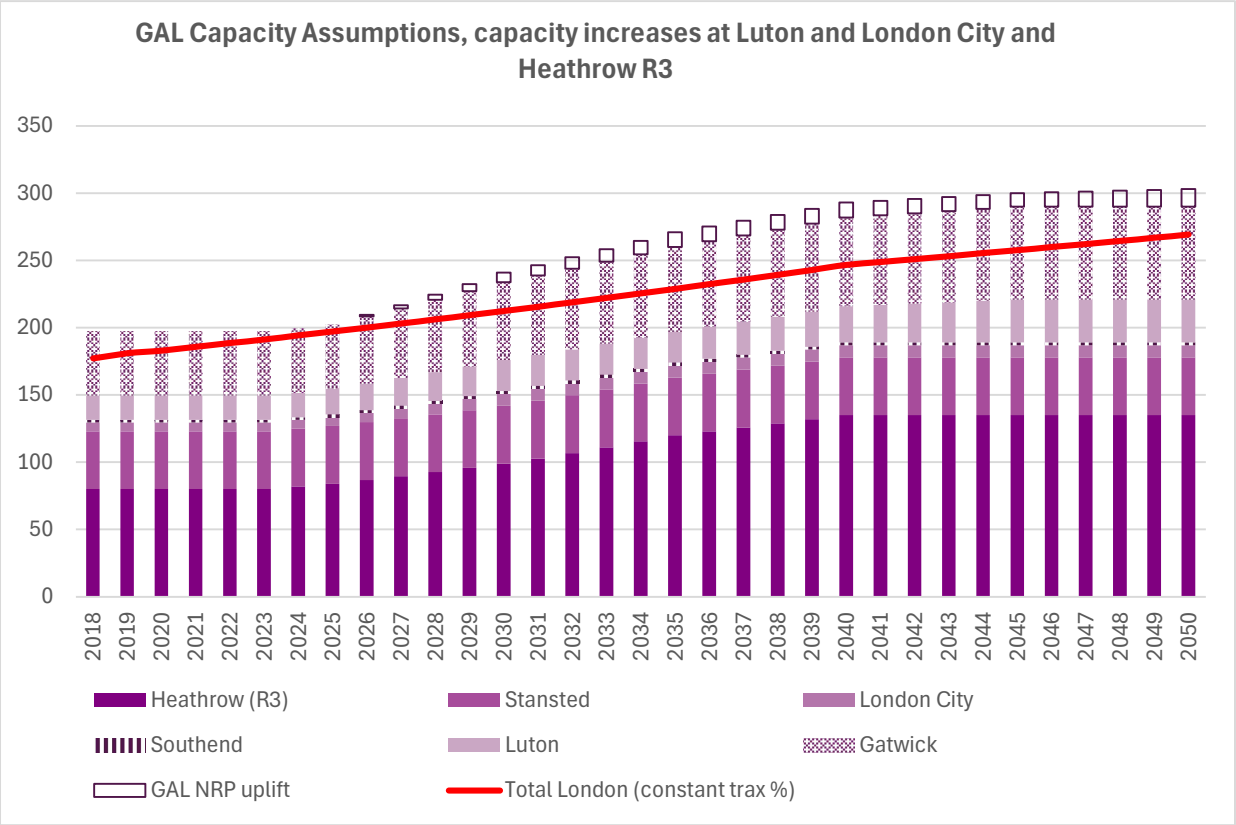


Figure 7: Demand and Capacity in the London Airport System with Gatwick NRP and Growth at Luton and London City plus a Third Runway at Heathrow



40. The above charts illustrate how sensitive the level of demand for Gatwick is likely to be, dependent on the capacity provided elsewhere. At the very least, these considerations highlight a real risk that Gatwick will not achieve the rate and, potentially, level of overall growth in demand projected to use the Airport over the period to 2047 with the NRP in place. This has implications for the assessment of impacts and the controls that would need to be put in place at different points in time, including but not solely the Noise Envelope.

TECHNICAL NOTE ON FUTURE BASELINE [REP1-047]

41. This note repeats much of the analysis in relation to the factors driving baseline growth and the market contained in the Needs Case Technical Appendix **[REP1-052]**. As we have already explained, there appears to be some inconsistency between the assertion that there is going to be an increase the number of runway movements during the main part of the day **[**at paragraph 1.4.2 of **REP1-047]** and the information provided as to the hourly movement rate scheduled today and planned for the future.

Peak Growth

42. Based on our understanding of current and future anticipated hourly capacity, it would appear that the increase in busy day operations is all expected to be after 18:00 (19:00 local time in summer). It is not clear to use that there is sufficient airline demand to operate solely in the evening to deliver an uplift on a diurnal basis. Furthermore, it is not clear the extent to which this assumption would place pressure on any limits on night time operations of new departures added after 19:00 and needing to return to the Gatwick base so as to be ready for the next day. Similar considerations could apply to new long haul arrivals in this period as allowance would need to be made for realistic aircraft turnaround times. We note that GAL states at paragraph 3.5.1 of **REP1-054**, that no increase in

movement levels in the night period has been assumed but we are not yet convinced that this would be the commercial reality flowing from increased operations in both the baseline and NRP cases.

Peak Spreading

43. For the reasons explained earlier in this submission, it is not clear that continued flattening of the seasonal profile of short haul operations is likely and to the extent to which there are realistic doubts about the scale of long haul growth claimed, especially for the baseline case, a reduction in seasonality seems less likely for this reason.

44. Figure 1.7 appears to suggest that airlines will be willing to grow simply outside of the peak period, i.e. they will add flights in shoulder periods even though they cannot add capacity in the peak. Whilst this may be true on the margin for airlines with large based fleets at the Airport that make less use of their aircraft in winter currently, such constraints are likely to present a substantial deterrent to airlines introducing new routes, including to long haul destinations that would need to be able to offer year round operations. We believe that this is one reason why excess demand from airlines for peak period slots in recent and pre-pandemic years has not converted to overall growth in aircraft movements at Gatwick as the ability to grow in terms of the overall number of aircraft movements relies on peak capacity being available.

45. For the above reasons, we do not consider it reasonable to assume a further 7 mppa growth in the baseline (Figure 1.2) coming from increases in aircraft movements over the day or over the year.

Aircraft Size and Load Factor

46. The major part of the claimed growth in baseline airport throughput derives from aircraft size increases and increases in load factor. Whilst the assumptions as set out in Table 1.3 regarding aircraft size appear more realistic in the light of recent aircraft orders by the principal carriers using the Airport, this does have implications for the fleet mix assessed in terms of environmental impact and ensuring that controls are set at the appropriate level. The changes in fleet mix are assumed to deliver around 9 mppa growth over 2019 passenger levels.

47. There is also an assumption that load factors will continue to rise (Figure 1.14). This will be more challenging given that much of the rise in load factor was driven by growth in low fare carrier operations at Gatwick and scope for further load factor growth may be more limited. This is for two reasons:

- To the extent that some of the growth is expected to come in off-peak periods, such services, including those from long haul full services airlines, will tend to have lower load factors than peak period services, for which growth will be constrained; and

- There are always asymmetries in demand that mean that there is an effective ceiling on average load factors that can be attained.

48. Having regard to all considerations, we do not believe that it is realistic to assume that Gatwick will be able to handle 67.2 mppa in the baseline case over the period to 2047. A more reasonable baseline case would be in the range 55-60 mppa. Adopting a lower baseline has implications for the assessment of the effects of the NRP as it would imply a capacity uplift greater then 13 mppa, subject to validation of the capacity attainable with the NRP, as discussed further below.

CAPACITY AND OPERATIONS SUMMARY PAPER AND APPENDIX [REP1-053, REP1-054]

Current Conditions - Baseline

49. At paragraph 1.2.7, it is claimed that the single runway *"reliably"* accommodates 55 aircraft movements an hour. It is clear from representations from some of Gatwick's largest customer airlines

[RR-1256, RR-1493, REP1-196] that accommodating this level of throughput is not being achieved at standards of service that they deem acceptable.

50. In terms of considering the level of capacity available, we have focussed on runway (Rwy) direction 26 as this is used for c.70% of the time. It is clear from Figure 11 of **REP1-054**, that although total departure delays may average 9.7 minutes across the day currently (2018) in the Rwy 26 direction **[REP1-053**, Table 2**]**, they peak at an average of over 15 minutes in key peak periods of the day **[REP1-054**, Figure 11**]**. Delays at this level exceed the normally acceptable level (to the airlines) of 10 minutes average delay in busy periods and goes some way to explaining the concerns expressed by the airlines regarding the resilience of the current operation, notwithstanding that we do understand that GAL has been clear of the delay implications in declaring capacity available at the current levels.

51. We understand that these delays are being mitigated to some degree now that the new rapid exit taxiway is in operation enabling many arriving aircraft to clear the runway more quickly. However, we understand from the documents that it is not GAL's intention to make further increases to peak hour declared capacity and to allow airlines to realise the benefits in terms of reduced delay. At paragraph 3.3.2 of **REP1-053**, GAL suggests that there are further enhancements that could be in prospect to improve the resilience of the operation. However, as we note below, these enhancements have been assumed not just to add resilience in the case of dual runway operations with the NRP but to be factors enabling higher capacity to be delivered and usable by the airlines. We have doubts that this is robust at this stage as GAL, itself, acknowledges that the real impact of these on the operation and how much capacity gain they might deliver is not yet known.

52. At paragraph 1.2.8 of **REP1-053**, GAL presents an entirely theoretical calculation of how 108 movements per hour could be achieved – 60 departures and 48 arrivals - in the airspace around Gatwick assuming there were no practical constraints on how it operates its existing runway or two runways in future and taking no account of the realities of having to interleave arriving and departing aircraft, the mix of destinations and departure routes required and the variations in the fleet mix. This is simply not relevant to establishing the capacity deliverable with or without the NRP save to make the point that airspace of itself is not expected to be a constraint. As is made clear at paragraph 2.10.1, attaining 60 departures an hour requires a theoretical perfect mix of aircraft in terms of all being of a single wake vortex category and a perfectly balanced alternation of flights onto divergent departure routes. To achieve this perfect mix, air traffic control necessarily has to hold and sequence aircraft onto the runway or, indeed, two runways in order to maximise the runway movement rate. This, in essence, requires a permanent queue of aircraft from which controllers can pick to optimise performance, which necessarily gives rise to some aircraft being delayed. Ultimately the number of aircraft that can be scheduled to use an airport each hour has to be moderated between optimising throughput and ensuring that delays are not excessive.

53. Paragraph 2.8.5 sets out the impact of aircraft following the same departure route on the achievable separation between departing aircraft. Although the majority of departure routes from Gatwick on Rwy 26 proceed straight ahead, such that 60 second separations between departing aircraft cannot be attained, as shown on Figure 5 of **REP1-053**, Routes 1, 7 and 8 do diverge further out from the Airport. On this basis, GAL has estimated that the average attainable separation between aircraft departing on these three routes is 106 seconds rather than 120 seconds as would normally be required on aircraft following the same route. Assuming this is correct, the effect is already reflected in the current performance of the single runway but is material to the updated modelling presented in **REP1-054**, which differs from that presented in the Needs Case **[APP-250]**. We note that the effect of this and of the new rapid exit taxiway is included in the modelling of the baseline case, as set out in **REP1-054** and provides some explanation as to why delays in the baseline are expected to fall compared to 2018. This updated modelling of the NRP case is discussed further below.

54. Although GAL asserts, at paragraph 2.10.2 of **REP1-053** that it would be theoretically possible to attain 53 departures an hour, this does not seem feasible with the distribution of aircraft by departure route

shown in Table 5 of **REP1-054**. With 34% of aircraft following the fully divergent Route 4, perfect sequencing would mean that 60 second separations could only be attained for 68% of movements, the remaining 32% would require 106 seconds on average, with some risk that 120 seconds might actually be required. This would imply, at best, an average of 75 seconds between departures, resulting in a ceiling on departure capacity of 48 movements an hour, which is the peak departure capacity assumed with the NRP **[**Forecast Data Book **APP-075**, Annex 7, page 6**]**. At worst, with 120 second separations between aircraft on Routes 1, 7 and 8, the rate would drop to 45 departures an hour. This demonstrates, that based on current rules and procedures, the capacity claimed for the NRP is at the theoretical maximum of what might be attained if air traffic control could sequence aircraft perfectly. As noted above, however, it is the delay consequences of this that will determine whether the capacity is actually capable of being declared and, if declared, taken up by airlines willing to accept the potentially high level of delay implied. Currently, peak scheduled departure rates are 37 and 36 departures an hour[19].

55. Paragraph 3.1.5 of **REP1-053** further explains the mathematics of how 55 movements per hour can only be obtained from the single runway with a perfect balance of arriving and departing aircraft, again requiring precise sequencing by air traffic control. We accept that there will always be circumstances, for example in good weather conditions or with a favourable mix of aircraft movements when the sustainable capacity of a runway can be exceeded, as noted at paragraph 3.1.7 but this does not impact on the sustainable declarable movement capacity.

56. Achieving increases in runway capacity do, of course, depend on the assumption that airspace is modernised such that overall congestion does not become a constraint in the longer term. As is made clear at paragraph 2.3.7 of **REP1-053**, this is simply not relevant to considering the capacity deliverable by the single runway in baseline conditions.

57. We note that paragraph 1.2.12 of **REP1-053** does assume that airspace modernisation across the London area is achieved by Q1 2027. Given the levels of airspace congestion generally, as shown on page 12 of Annex 7 to the Forecast Databook **[APP-075]**, this does highlight some risk to the attainment of the totality of capacity uplift at an early date if airspace modernisation is delayed or not delivered. As highlighted at paragraph 23 of Appendix F to the Joint West Sussex LIR **[REP1-069]**, this does pose some risk that greater use of WIZAD SID may be required in future, accepting that this would require a modification to the Manual of Air Traffic Services.

58. In relation to baseline capacity then, we consider it prudent to assume that there is unlikely to be scope to materially increase the declared capacity of the single runway above summer 2024 levels. For the reasons set out in paragraphs 10 and 17 above, we doubt that GAL will be able to achieve an additional 20 movements on a busy day in baseline conditions as claimed at paragraph 3.4.2 of **REP1-053**.

NRP

59. We accept that the NRP will provide efficiency improvements and enable increased runway movements but the focus of GAL's analysis appears very much on optimising number of movements handled on the runways themselves in terms of the runway service rate (the theoretical maximum hourly capacity that can be handled), regardless of implications on the ground, i.e. delays prior to departure (or arrival). The capacity of the airfield system as a whole requires consideration of both aspects as ultimately capacity has to be delivered at a level of service acceptable to users. This means that commercially acceptable capacity is likely to be below the theoretical maximum.

60. At the time of the original consultation in 2021, we had some doubt about operational and safety aspects of the proposed dual runway configuration. At paragraph 4.2.3 of REP1-053, it is stated that

[19] Airport Coordination Ltd, Gatwick Summer 2024 Season Capacity Declaration.

there is a Statement of Common Ground in place with the CAA covering Safety and Operations and we await consideration of this before commenting on any residual safety concerns.

61. We note that in section 4.2 of **REP1-053**, GAL cites Dubai as an example of an airport operating a similar runway configuration safely. However, it is not strictly comparable as the use of the runways in segregated mode optimises both arrival and departure sequences. We are also aware that the operation at Dubai can involve long taxi times and high levels of delay. To some degree these are absorbed in the longer turnaround times inherent in the mainly longer haul operations at that airport. This is not feasible for an airport, like Gatwick, with a preponderance of operations by low fare airlines that rely on fast turnaround times and optimising aircraft utilisation over a day, for whom the implications of high levels of airfield congestion and delay can be more commercially damaging.

62. As with the Needs Case, Table 2 of **REP1-053** presents only delay data averaged over the whole day when it is delays in specific busy periods, particularly in the departure heavy hours early in the morning that may be more impactful on the commercial viability of operations at least by airlines seeking to base aircraft at Gatwick.

Appendix [REP1-054]

63. This Appendix sets out in more detail the updated fast time simulation modelling undertaken in relation to the baseline and NRP cases.

64. We are assuming that the schedules modelled are the same as those set out on pages 3 and 6 of Annex 7 to the Forecast Data Book **[APP-075]**. From discussion with GAL, it would appear that the schedules were derived from an initial, off-model, estimate of the capacity that could be made available to which the commercial team at the Airport developed busy day schedules, in line with Annex 6 of the Forecast Data Book, which were then tested for the delay implications through the fast time simulation modelling.

65. Table 7 summarises the assumptions assumed by GAL in its latest capacity modelling. Whilst the new rapid exit taxiway has been allowed for in both the baseline and NRP cases, we understand from elsewhere in the documents that there is no expected capacity gain in the NRP case.

66. However, not only has the capacity modelling been adjusted by reference to the actual achieved separation between departures following the same initial departure route (see paragraph 53) in the cases based on current performance, GAL presents results for future performance on the assumption that technology will allow it to attain 90 second separations between departures following the same route (Reduced Departure Separation) and has made further off model adjustments to reflect enhanced sequencing capability that it claims will further reduce delays.

67. We are currently concerned at the robustness of assuming that these potential technological enhancements will necessarily deliver the capacity uplift/reduction in delay, at the movement rates tested, as assumed by GAL. This is not least because of the caveats stated at paragraph 4.4.9 as to the extent to which they will assist capacity on 'normal' operating days. Our view is that, for the present, the modelled 'future performance' outputs should be given less weight than those based on 'current performance', contrary to the view expressed by GAL at paragraph 5.1.1.

68. We are also seeking clarification as the validity of the reductions in modelled delay more generally compared to previous model results shared with us by GAL as shown at Figure 3 of Appendix F to the JLA's LIR **[REP1-069]**, which we had understood to have been based on the attainment of 60 second separations between all departures. Currently, we cannot account for why the modelled delays are so much lower than previously modelled and we are seeking further clarification and discussion with GAL to understand the reasons for the changes and the implications for the attainable capacity over the longer term from the NRP.

SUMMARY OF KEY POINTS

Baseline:

69. It is noted that GAL is only assuming a very modest increase in the number of aircraft movements on a typical busy day at Gatwick compared to the available capacity declared for summer 2024, with no increase assumed for the main part of the day 05:00 to 18:00 UTC.

70. On that basis, it is difficult to understand, and GAL has not evidenced, how new year round services can be accommodated without displacing other services given that any new slots appear likely to be in the evening where there is already some degree of spare capacity that has not been taken up despite excess demand over capacity for the main part of the operating day. As a consequence, the level of growth through peak spreading in the baseline case seems unlikely to occur, meaning that the scope for volume growth will largely come from increases in the number of seats on each aircraft and the load factor.

71. Of the baseline growth above 47 mppa, GAL ascribes 13 mppa of the increase to growth in average passengers per movement [**REP1-052**, Figure 36]. However, in part this was reliant on some shift from short haul to long haul operations through accommodating new year round services. For the reasons noted above, this seems less likely and so we believe that a more realistic assessment of the passenger throughput deliverable in the baseline case is in the range 55-60 mppa.

NRP Case

72. GAL has updated its modelling of the performance of the NRP in terms of handling the future projected number of aircraft movements to accommodate 75.6 mppa in 2038 (growing to 80.2 mppa in 2047). This updated modelling uses some modified assumptions about the current operational performance of the single runway, including allowing for the new rapid exit taxiway and taking into account actual achieved separations between aircraft when following the same initial departure route (Routes 1, 7 and 8) after take-off. Additional assumptions have been made regarding the scope for further improvements in sequencing of departing aircraft to optimise runway use and the potential use of time based separations to improve capacity for arriving aircraft. This updated modelling indicates better performance in terms of reduced levels of delay compared to the original model results as presented in Working Group meetings prior to the commencement of the Examination and as set out in Section 7 of the Needs Case [APP-250].

73. Ultimately, the hourly capacity deliverable with the NRP will place an upper bound on the passenger throughput attainable at any point in time having regard to the new routes and services that will be able to be accommodated. Discussions are ongoing with GAL to validate what reasonable estimates would be for the ultimate capacity deliverable with the NRP both over the day and in critical busy periods. The outcome of these discussions will be reflected in submissions at future deadlines and in the Statement of Common Ground.

74. Whilst achievable capacity represents one dimension of likely throughput of Gatwick with the NRP, the extent to which demand will be attracted to take up that capacity represents the second important dimension.

75. The principal forecasts relied on by GAL derive from a ‘bottom up' judgemental assessment of how many new services might be attracted that does not appear to be underpinned by any consideration of the characteristics of demand in each market and the likelihood of Gatwick attracting a specific number of new services. In our view, little reliance can be placed on these forecasts without better evidence as to their realism and deliverability having regard to the specific nature of each market, including how much of the demand might prefer Gatwick over other airports around London and

beyond that might have spare capacity and could be attractive to airlines to meet a greater share of their local demand.

76. Although we have some technical concerns regarding the robustness of the top down passenger allocation modelling undertaken for GAL, this modelling better reflects more recent overall forecasts of UK air passenger demand, taken from the Department for Transport's Jet Zero modelling. Some account has now been taken of the element of transfer traffic within those forecasts that could only realistically be expected to use Heathrow. The revised modelling now shows a slower take up of the NRP capacity having regard to the scale of market available to it, see **Table 1** above. Prima facie, this appears more robust than the 'bottom up' analysis relied on by the Applicant to date.

77. A further consideration is the extent to which it is realistic to base the assessment of the impact, positive and negative of the NRP solely on the basis that no additional airport capacity is consented in the London system (or beyond) over the period to 2047. We do not consider this to be a reasonable basis for considering the implications of the NRP and the Applicant's approach poses substantial risks that ultimate controls, such as the Noise Envelope, are set too lax leaving a risk of the detrimental impacts being realised but without the equivalent benefits deriving from growth.

Overall

78. A final consideration is in relation to fleet mix. Although not covered in these new technical papers, as made clear at point 7 of the JLAs post-hearing submission on ISH5-Aviation Noise [**REP1-066**], there are overarching concerns that the fleet mix assumptions have not been updated since 2021 and now appear out of line with assumptions underpinning the fleet forecasts used to project the scope for growth in passengers per aircraft movement. Hence the effect of this understatement of the rate of fleet transition to newer generation quieter aircraft could compound any overstatement of the demand forecasts in terms of setting controls too lax.

YAL/17.4.24