Appendix 5-1: Application of Assessment Framework and Use of Environmental Baseline Information

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This appendix illustrates how the assessment framework has been applied across the environmental topics, including how environmental information collected in different years has been used. It identifies the data used to establish the Current Receiving Environment and explains how the 2029 Principal Assessment has been constructed for each topic.

In particular, the appendix demonstrates why using environmental information collected after 2023, when airport operations had increased above the permitted level of 32 mppa, does not result in an underestimation of the effects attributable to the Proposed Order. It distinguishes between environmental information used to characterise the receiving environment and the operational assumptions used to assess the 2029 Permitted Operation (32 mppa) and 2029 Proposed Operation (40 mppa), identifying the topic-specific reasons why the full effects of the proposed increase in passenger capacity are captured.

	How is the Current Receiving Environment established, and how is information from different years used?	How is the 2029 Principal Assessment constructed and what is compared?	Why does post-2023 information not understate the effect of increasing from 32 to 40 mppa?
6 Traffic & Transport	The Current Receiving Environment is established using October 2025 traffic surveys, airport passenger and employee travel information, road traffic flows, mode shares and network performance data. 2023 surface-access conditions are reconstructed from historical operational and transport evidence to represent the 32 mppa Baseline Operation in Supporting Assessment 1; 2025 conditions inform Supporting Assessments 2 and 3.	Separate 2029 road, junction and public-transport forecasts are tested at 32 mppa and 40 mppa, using common future background growth and network assumptions.	The October 2025 surveys establish current network conditions and inform model calibration, but do not define the 2029 permitted airport demand. The 2029 Permitted case uses separately forecast airport-generated trips for 32 mppa, compared with 40 mppa for the Proposed case, under common background traffic assumptions. This avoids carrying travel demand associated with operations above 32 mppa into the permitted comparator. Junction and public-transport assessments identify the resulting effects and any necessary mitigation.
7 Air Quality	Current air quality is characterised using daa, EPA and project-specific monitoring (including 2025 NO_2 monitoring), together with dispersion modelling of the 2025 Current Operation. The 2023 Baseline Operation provides the historic 32 mppa operational reference for Supporting Assessment 1; 2025 Current Operation data inform Supporting Assessments 2 and 3.	The 2029 total pollutant concentrations for separately defined 32 mppa and 40 mppa airport operations are modelled at the same receptors using common projected 2029 background concentrations. These are derived from 2025 EPA background monitoring data, projected to 2029 using the methodology and projection factors set out in Appendix C of TII air quality guidance.	The 2025 measurements characterise current pollution and inform model evaluation; they do not define the permitted airport emissions in 2029. Airport-related emissions sources are modelled separately for the 32 and 40 mppa cases against the same 2029 background concentrations. The full additional airport-related contribution is therefore compared at the same receptors, with conservative source and receptor assumptions providing further precaution. Supporting Assessment 1 provides an additional 2023-based comparison.
8 Non-Aircraft Noise	The existing noise environment is established from baseline noise measurements (including 2024 surveys) and road traffic information. 2023 is used as the 32 mppa Baseline Operation for Supporting Assessment 1, while the 2025 Current Operation is used in Supporting Assessments 2 and 3.	2029 road-traffic noise is calculated from the separately forecast surface-access flows at 32 and 40 mppa. Aircraft and ground noise are addressed in Chapter 9.	Noise measurements describe existing conditions, including any effects of post-2023 activity, but are not used as a substitute for the permitted traffic case. Road-traffic noise is calculated from separate 2029 traffic forecasts for 32 and 40 mppa. Accordingly, the additional airport-generated road traffic is included in the noise comparison rather than being absorbed into a 2025 baseline. The 2023 supporting comparison provides context for the predicted change.
9 Aircraft Noise & Vibration	The existing aircraft-noise environment is described using airport movement, aircraft-fleet, operating and noise information, including the 2023 operational reference. The 2023 schedule informs the representative permitted level of activity carried forward into 2029. No separate Supporting Assessments are undertaken for this topic.	2029 aircraft air-noise, ground-noise and vibration outcomes for 32 and 40 mppa are compared using the applicable future movement schedules and operating constraints.	The 2029 Permitted aircraft schedule is based on the 32 mppa operational reference, not the higher activity experienced in 2025. The Proposed case is assessed using its own 40 mppa movement assumptions under the applicable operating constraints. The resulting comparison therefore captures the additional aircraft activity attributable to the Proposed Order. For ground noise, assuming replacement aircraft are no quieter provides an additional precaution.
10 Land & Soils	Current land, soils and geology are characterised using geological and soils mapping, historic imagery, site investigations and environmental monitoring from multiple years, including investigations undertaken between 2018 and 2025 and earlier records where relevant. 2023 is one evidence year where applicable, not a fixed environmental baseline. No Supporting Assessments are undertaken. Supporting Assessments have not been undertaken for land and soils because the Principal Assessment provides a sufficient basis for identifying and determining the likely significant effects of the Proposed Order on land and soil receptors. The Proposed Order does not involve the	The assessment compares the potential for spills and leaks associated with airport operations at 32 and 40 mppa. No material changes to land use, soils or geology are anticipated by 2029, so both scenarios are assessed against the same physical environment. No construction or land take is proposed.	The physical characteristics of land and soils are not materially influenced by passenger throughput, so post-2023 investigation data do not conceal an additional effect of higher airport activity. Both operational scenarios are assessed against the same 2029 Future Receiving Environment, which takes account of relevant changes anticipated by that year independently of the Proposed Order, including drainage improvements where applicable. The additional risks of spills and leaks associated with 40 rather than 32 mppa are considered explicitly. Existing hardstanding, drainage infrastructure and interceptors, together with relevant drainage improvements incorporated within the Future Receiving Environment, are taken into account.

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	construction of new physical infrastructure or changes to the footprint of the airport and therefore would not result in direct disturbance, excavation, land take or the loss of soil resources. The assessment is limited to consideration of the potential effects arising from changes in airport operations, principally through the potential for accidental spillages or contamination events. Additional comparisons against interim operational scenarios would not materially assist the interpretation of the assessment or alter the conclusions on likely significant effects.		
11 Water	The Current Receiving Environment is established from catchment and groundwater mapping, drainage information and surface-water/groundwater monitoring, including monitoring from 2020–2021, 2022–2024 and other historical records. Data from 2023 form part of this environmental evidence; 2023 is not treated as the sole water baseline. Supporting Assessments have not been undertaken in this water chapter because the Principal Assessment provides sufficient basis for identifying and determining the likely significant effects of the Proposed Order on the water receptors. The Proposed Order does not involve the construction of new physical infrastructure or changes to the footprint of the airport. The assessment is limited to the consideration of the potential effects arising from changes in airport operations, principally through the potential for accidental spillages or contamination events.	Changes in operational water-quality, de-icing, drainage and related pathways are assessed at 32 and 40 mppa against a common 2029 water environment.	Water quality monitoring undertaken after 2023 may already reflect the effects of airport operations above 32 mppa. However, the assessment does not rely solely on changes in monitored water quality to identify the effects of the Proposed Order. Instead, it separately considers the potential additional pollution risks associated with increasing airport operations from 32 to 40 mppa, including increased de-icing activity and accidental spills or leaks. As these additional risks are assessed directly, rather than inferred from differences in historical monitoring results, the use of more recent monitoring data is unlikely to conceal the effects of increased airport activity. Existing drainage infrastructure and pollution prevention measures, together with relevant operational drainage improvements incorporated within the 2029 Future Receiving Environment, are taken into account when determining the significance of those effects.
12 Biodiversity	The ecological baseline draws on desk-study records and field surveys, including 2024 habitat/species surveys and records covering 2018–2025 for relevant birds and other species. 2023 records are used where relevant to describe ecological receptors, rather than to define a fixed environmental baseline. No Supporting Assessments are undertaken. An assessment of effects following the Principal Assessment alone is considered sufficient for this environmental topic, because the Proposed Order does not involve physical development or habitat loss and the anticipated operational changes (including increases in passenger numbers, aircraft movements, and associated traffic) are addressed through the relevant ecological impact pathways assessed within the Principal Assessment.	Potential indirect effects at 32 and 40 mppa are compared in relation to common 2029 habitats and species, principally via noise, air emissions/deposition and water pathways; no direct habitat loss is proposed.	Ecological surveys spanning 2018–2025 include periods when the airport operated at both 32 mppa and above that level. The survey evidence indicates no material changes in habitats or important ecological features attributable to the increase in airport activity between 2023 and 2025. Consequently, the use of more recent ecological information does not result in an underestimation of the effects of the Proposed Order, as the assessment separately considers the additional effects of increasing airport operations from 32 to 40 mppa, including changes in noise, air quality, water quality and bird-strike risk. Together, these ensure that the effects of the Proposed Order are appropriately assessed and are not underestimated.
13 Climate	The Current Receiving Environment is described using historical and current greenhouse-gas emissions and	2029 emissions at 32 and 40 mppa are compared under common future assumptions; additionally,	Historical and 2025 emissions information informs current conditions and relevant calculation assumptions, but the two future cases are

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	airport operational data. Reported 2023 activity and the 2023 aviation schedule quantify the 32 mppa Baseline Operation used in Supporting Assessment 1; 2025 operational/emissions information informs the 2025 Current Operation and Supporting Assessments 2 and 3.	project greenhouse-gas emissions to 2050 for lifetime/policy assessment.	based on separately specified 32 and 40 mppa activity. The same future decarbonisation assumptions are applied, so the difference identifies emissions attributable to the Proposed Order rather than treating post-2023 growth as permitted. Conservative activity assumptions and the extension of the assessment to 2050 provide additional coverage of future effects.
14 Cultural Heritage	Current heritage receptors and their settings are identified from archaeological and architectural heritage inventories, published mapping, documentary records and relevant site-based evidence. Information is drawn from appropriate years rather than one survey year. 2023 has no separate fixed heritage-baseline function and no Supporting Assessments are undertaken because the Principal Assessment provides a sufficient basis for identifying and determining the likely significant effects of the Proposed Order on Heritage Assets. Additional comparisons would not materially assist interpretation of the assessment due to the operational nature of the Proposed Order and the absence of physical changes to the receiving environment.	Indirect operational effects on the same heritage assets and settings in 2029 are compared at 32 and 40 mppa; no ground disturbance or new infrastructure is proposed.	The heritage assets and their significance are not expected to have changed materially between 2023 and 2025 as a result of increased airport operations. Consequently, using more recent heritage information does not conceal effects associated with operating above 32 mppa. The assessment separately considers any additional indirect effects on heritage assets arising from increasing airport operations from 32 to 40 mppa. The absence of physical development also means that no direct disturbance or loss of heritage assets would occur.
15 Landscape & Visual	The existing landscape and visual environment is described using landscape character/designation mapping, site observations, viewpoint photographs and verified views. Photographic and other evidence is used according to its date and representativeness; 2023 is not treated as a fixed landscape baseline or separate operational comparison. No Supporting Assessments are undertaken as the Principal Assessment provides a sufficient basis for identifying and determining the likely significant effects of the Proposed Order on landscape character and visual amenity. Additional comparisons would not materially assist the interpretation of the assessment due to the operational nature of the Proposed Order and the absence of physical changes to the receiving environment.	Perceived aircraft activity and associated visual/landscape effects are compared at 32 and 40 mppa against the same 2029 physical setting; no new built form is proposed.	The physical landscape and visual environment are not materially affected by changes in passenger throughput, and no new infrastructure is proposed. Consequently, using more recent landscape and visual information does not conceal effects associated with operations above 32 mppa. The assessment separately considers any additional visual effects arising from increased aircraft activity between 32 and 40 mppa.
16 Material Assets – Waste	The Current Receiving Environment uses the latest available EPA information on national waste arisings and management capacity, together with daa airport waste records, including 2025 operational waste (5,601 tonnes at 36.4 mppa). The 2023 Baseline Operation is used for Supporting Assessment 1; 2025 Current Operation is used for Supporting Assessments 2 and 3.	2029 operational waste for 32 and 40 mppa are forecast using comparable generation assumptions and test the incremental demand against waste-management capacity.	Recorded 2025 waste quantities inform waste-generation assumptions but are not carried forward unchanged as the 32 mppa case. Forecasts are prepared separately for 32 and 40 mppa on a consistent basis, allowing the additional waste generation attributable to the Proposed Order to be assessed against management capacity. Waste generated through activity above 32 mppa in 2025 is therefore not simply treated as part of the permitted forecast.

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17 Material Assets – Built Services	The receiving environment is characterised using utility-network and capacity information, together with daa consumption and wastewater-discharge records, including 2023 and 2025. Historic records show that consumption has not risen proportionately with passenger throughput and has sometimes fallen while passengers increased. The 2023 and 2025 operational conditions also inform Supporting Assessments 1 and 2–3 respectively.	The 2029 Permitted (32 mppa) case uses recorded 2025 resource consumption and discharge as its demand assumption. The 2029 Proposed (40 mppa) case applies an approximately 10% uplift to these quantities; the resulting demand is considered against relevant network and treatment capacities.	Historical records show that resource consumption has not increased proportionately with passenger throughput and has sometimes declined while passenger numbers rose. This suggests that consumption is substantially influenced by other factors, potentially including fixed airport operating demand and efficiency measures. Using 2025 consumption for the 2029 Permitted case is therefore unlikely to embed a material passenger-driven increase associated with operations above 32 mppa. The further uplift applied to the 40 mppa case allows for additional resource demand, reducing the likelihood of underestimating effects.
18 Major Accidents & Disasters	The current risk environment is established from airport and off-site hazard information, relevant accident /emergency records, regulatory controls and published risk evidence, including recent national risk and weather information. 2023 is one historical reference where relevant, not a separate fixed risk baseline. No Supporting Assessments are undertaken. The effects of changes in passenger throughput and associated airport activity are assessed directly through the comparison of the two 2029 operational conditions, while hazards that are not materially influenced by those changes are treated consistently across both scenarios. Additional comparisons with historic or current operational conditions would therefore not materially assist interpretation of the assessment findings.	The likelihood and environmental consequences of relevant major accident/disaster scenarios in 2029 are compared for 32 and 40 mppa, with no physical change to airport infrastructure.	Recent accident and hazard evidence identifies relevant risks and safeguards; it does not establish the permitted activity level. The same major-accident and disaster scenarios are considered for the 2029 32 and 40 mppa cases, including any change in likelihood or exposure due to additional movements and activity. Accordingly, increased operational risks are considered directly rather than treated as already forming part of the permitted case.
19 Population & Human Health	Current population and human-health conditions are established using demographic, socio-economic and health datasets, including Census 2022 population data, 2022 deprivation information and earlier series where these remain relevant, alongside current exposure information from other EIAR topics. 2023 does not define a separate population baseline. No Supporting Assessments are undertaken for Population and Human Health.	Differences in 2029 amenity, health and economic pathways are evaluated between 32 and 40 mppa, drawing on traffic, air quality, noise and other topic assessments.	Recent population and health information describes receptors, not the permitted airport throughput. Changes in noise, air pollution and transport exposure are drawn from the specialist comparisons of 2029 operations at 32 and 40 mppa, rather than from a comparison with 2025 conditions alone. This allows the associated population and health effects of the full increase from the permitted case to be considered.
20 In-Combination & Cumulative	Chapter 20 does not establish an independent Current Receiving Environment. It uses the current/future evidence and residual effects reported in Chapters 6–19, alongside information on other developments. Any role of 2023 is inherited from those technical assessments; Chapter 20 does not undertake separate Supporting Assessments as these are not relevant within the assessment of cumulative effects.	The incremental effects established by the technical chapters are combined and interactions between them, and with relevant other developments, are tested.	Chapter 20 uses the effects attributable to the 2029 comparison of 32 and 40 mppa reported in Chapters 6–19, rather than adopting the 2025 Current Operation as a new comparator. It considers whether those effects interact with each other or with other developments to produce additional significant effects at shared receptors. It does not replace or redefine the topic-level Principal Assessments.