5. Methodology

5.1 Introduction

5.1.1 This chapter describes the overarching methodology applied throughout this Environmental Impact Assessment Report (EIAR) for the identification and assessment of the likely significant effects of the Proposed Order on the environment. It explains how the common operational assumptions described in Chapter 4: Proposed Order have been applied within the environmental assessment, establishes the assessment framework adopted across the technical chapters, and describes the approach used to identify, predict and evaluate the likely significant environmental effects of the Proposed Order.

5.1.2 The methodology has been developed having regard to the requirements of the Environmental Impact Assessment Directive, relevant Irish legislation, published guidance and recognised professional practice as detailed in Section 5.2 of this chapter. It provides a consistent framework for the assessment of the Proposed Order while allowing topic-specific assessment methodologies to be applied where appropriate.

5.1.3 The Proposed Order relates solely to an amendment to the existing passenger capacity conditions at Dublin Airport and does not provide for the construction of new airport infrastructure or other physical development works. Accordingly, this EIAR assesses the likely significant environmental effects arising from the changes in airport operations facilitated by the Proposed Order.

5.1.4 This chapter establishes the project-wide assessment methodology applied consistently throughout the EIAR. It describes:

- the overarching assessment methodology applied by the technical chapters;
- the environmental baseline and future receiving environment;
- the Principal Assessment and Supporting Assessments;
- the assessment years and the application of the operational assumptions;
- the assessment of likely significant effects;
- mitigation and monitoring, residual effects, assumptions and limitations; and
- cumulative, indirect, secondary and transboundary effects.

5.1.5 Topic-specific assessment methodologies, significance criteria and technical guidance are described within the relevant environmental topic chapters. Those chapters apply the overarching assessment framework established in this chapter and should be read in conjunction with it.

5.2 Legislation, Policy and Guidance

5.2.1 This EIAR has been prepared having regard to the relevant legislative requirements, policy framework and environmental assessment guidance applicable at the time of preparation.

5.2.2 This section identifies the principal legislation, policy and guidance that informs the approach adopted in the preparation of this EIAR. Topic-specific legislation, policy, standards and guidance relevant to individual environmental topics are described within the relevant technical discipline chapters.

Legislation

5.2.3 The assessment has been undertaken having regard to the requirements of:

- Dublin Airport (Passenger Capacity) Act 2026;
- Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU;

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive); and
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (Birds Directive).

Guidance

5.2.4 The overarching assessment methodology has been informed by the following guidance:

- Environmental Protection Agency (EPA) (2022), Guidelines on the Information to be Contained in Environmental Impact Assessment Reports;
- European Commission (2017), Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report; and
- European Commission (2017), Environmental Impact Assessment of Projects – Guidance on Scoping.

5.2.5 Additional topic-specific legislation, policy, standards and guidance relevant to individual environmental topics are identified within the relevant technical discipline chapters, together with an explanation of how they have informed the topic-specific assessment methodologies where applicable.

Professional Judgement

5.2.6 Article 5(3)(a) of the EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU) requires that an EIAR is prepared by competent experts. The qualifications and experience of those responsible for preparing this EIAR are described in Chapter 1: Introduction and the relevant technical discipline chapters.

5.2.7 Professional judgement is an important part of how competent experts undertake environmental assessment. It is used to interpret available evidence, select and apply appropriate assessment methods, and reach conclusions where definitive standards, thresholds or prescribed criteria are not available. Such judgements are informed by the expert's qualifications and experience, the available evidence, relevant guidance and established professional practice.

5.2.8 Where definitive standards, thresholds or assessment criteria are available, these have been applied. Where professional judgement has been used, the relevant technical discipline chapter explains the evidence and reasoning supporting the conclusion reached.

5.3 Assessment Methodology

Purpose of the Assessment Methodology

5.3.1 This section describes the overarching assessment methodology applied throughout the EIAR. It establishes the common assessment framework used to identify, predict and evaluate the likely significant environmental effects of the Proposed Order and explains how that framework has been applied consistently across the technical discipline chapters.

5.3.2 The assessment methodology has been developed to provide a proportionate and consistent approach to the assessment of the environmental effects arising from the Proposed Order. It establishes the common framework for describing the Current Receiving Environment, developing the Future Receiving Environment and assessing the operational conditions associated with the Proposed Order, whilst allowing topic-specific assessment methodologies to be applied where these are required by legislation, published guidance or recognised professional practice. This ensures that the assessment is proportionate to the characteristics of each environmental topic whilst maintaining a consistent approach across the EIAR. This methodology should be read in conjunction with the topic-specific methodologies presented within the relevant technical discipline chapters.

5.3.3 Annex IV(3) of the EIA Directive requires a description of the current state of the environment and its *"likely evolution thereof without implementation of the project".* The EPA Guidelines (2022), Section 3.6.1, similarly explain that "*This predicted changing baseline may be referred to as the likely future receiving environment.*" The assessment methodology adopted in this EIAR reflects these requirements

by first establishing the Current Receiving Environment and then considering how it is expected to change by 2029 without the Proposed Order.

5.3.4 Chapter 4: Proposed Order describes the four airport operating conditions used in this EIAR: the 2023 Baseline Operation (32 mppa), the 2025 Current Operation (36.4 mppa), the 2029 Permitted Operation (32 mppa) and the 2029 Proposed Operation (40 mppa). The following sections explain how these operating conditions are used within the assessment methodology.

Current Receiving Environment

5.3.5 The Current Receiving Environment describes the environmental conditions, receptors and environmental resources that currently exist. It provides the starting point for understanding how the environment is expected to change by 2029, the year in which the Principal Assessment is undertaken.

5.3.6 The Current Receiving Environment is established using the best available and most representative information for each environmental topic. This may include surveys, monitoring data, published datasets, site inspections and other relevant information.

5.3.7 This information does not need to relate to a single year. Different environmental topics may use information from different years, depending on its relevance and representativeness.

5.3.8 The Current Receiving Environment is then used to develop the 2029 Future Receiving Environment, as described in the following section.

5.3.9 Environmental information collected when airport operations exceeded 32 mppa has been used, where appropriate, to characterise the Current Receiving Environment. For some environmental topics, the characteristics of the receiving environment are not materially influenced by passenger throughput. For others, the influence of airport activity is taken into account through the relevant topic-specific assessment methodologies, as explained further in the Principal Assessment section below and Appendix 5-1.

Future Receiving Environment

5.3.10 The Future Receiving Environment describes the environmental conditions, receptors and environmental resources expected to exist in 2029 in the absence of the Proposed Order. It provides the environmental baseline for the Principal Assessment.

5.3.11 The Future Receiving Environment is developed from the Current Receiving Environment by considering how environmental conditions are expected to change by 2029, independently of the Proposed Order.

5.3.12 Depending on the environmental topic, this may include planned land use changes, committed developments, environmental trends, regulatory changes and other relevant changes expected to occur irrespective of the Proposed Order.

5.3.13 The same 2029 Future Receiving Environment is used when assessing the 2029 Permitted Operation and the 2029 Proposed Operation. This provides a common environmental baseline, allowing the effects of the two airport operating conditions to be compared on a like-for-like basis.

Principal Assessment

5.3.14 The Principal Assessment identifies the likely significant environmental effects attributable to the Proposed Order by comparing two airport operating conditions in 2029: the 2029 Permitted Operation at 32 mppa and the 2029 Proposed Operation at 40 mppa.

5.3.15 The year 2029 has been selected because passenger demand forecasts indicate that, in the absence of the existing passenger capacity conditions, passenger throughput at Dublin Airport is expected to reach approximately 40 mppa by that year. This is consistent with the passenger growth anticipated in the Fingal Development Plan 2023–2029 and the Dublin Airport Local Area Plan 2020, as extended. The Airport Capacity Report (2026) also identifies an estimated capacity of approximately 40.5 mppa based

on existing airport facilities, infrastructure, operational processes and the current demand profile. 2029 therefore provides an appropriate year for assessing the effects of the Proposed Order at 40 mppa.

5.3.16 The 2029 Permitted Operation represents continued operation within the existing 32 mppa passenger capacity conditions. It is informed by the 2023 operational schedule, which provides a representative basis for the permitted level of airport activity, while incorporating appropriate assumptions for 2029. The 2029 Proposed Operation represents airport operation at 40 mppa. Both operational conditions are described in Chapter 4: Proposed Order.

5.3.17 Both operations are assessed against the same 2029 Future Receiving Environment. The Principal Assessment therefore considers the environmental effects of operating at 32 mppa and 40 mppa in the same future year and under the same environmental conditions.

5.3.18 The difference between these two cases identifies the environmental effects attributable to the Proposed Order, separately from environmental changes that would occur irrespective of it.

5.3.19 The Principal Assessment uses environmental information collected after 2023, when the airport was operating above 32 mppa. However, this does not result in an underestimation of the effects of the Proposed Order. For some environmental topics, the characteristics of the receiving environment are not materially influenced by passenger throughput (as indicated in Appendix 5-1). For others, topic-specific assessment methodologies distinguish between the environmental conditions described using more recent information and the operational assumptions used to represent the 2029 Permitted Operation (32 mppa) and 2029 Proposed Operation (40 mppa). This ensures that the environmental effects associated with increasing permitted passenger throughput from 32 mppa to 40 mppa are appropriately assessed, as explained further in Appendix 5-1: Application of the Assessment Framework and Use of Environmental Baseline Information.

5.3.20 Appendix 5-1 provides a topic-by-topic explanation of how the assessment framework has been applied, with particular reference to the use of environmental information collected in different years. It identifies the data used to establish the Current Receiving Environment, including the role of information from 2023 and subsequent years, and explains how the 2029 Permitted Operation (32 mppa) and 2029 Proposed Operation (40 mppa) have been constructed and compared. In particular, Appendix 5-1 explains why the use of environmental information collected after 2023, when airport operations exceeded 32 mppa, does not lead to an underestimation of the effects attributable to the Proposed Order. Where relevant, it also describes how the Supporting Assessments, described below, provide additional context for the Principal Assessment.

5.3.21 The Principal Assessment provides the basis for identifying likely significant effects, determining any additional mitigation measures and reporting residual effects. It is undertaken for all environmental topics considered in this EIAR.

Supporting Assessments

5.3.22 Whilst the Principal Assessment provides the basis for identifying the likely significant environmental effects of the Proposed Order, Supporting Assessments are undertaken where they provide useful additional context for interpreting the findings of the Principal Assessment. They do not determine likely significant effects, but provide additional operational, environmental or planning context where this is helpful.

5.3.23 Three Supporting Assessments have been identified for potential application within the relevant chapters of this EIAR:

- **Supporting Assessment 1** compares the 2023 Baseline Operation, which uses the 2023 operational schedule as a representative basis for airport activity under the existing passenger capacity conditions (32.0 million passengers per annum (mppa)), with the 2029 Proposed Operation (40.0 mppa).
- **Supporting Assessment 2** compares the 2025 Current Operation (36.4 mppa) with the 2029 Proposed Operation (40.0 mppa).
- **Supporting Assessment 3** compares the 2025 Current Operation (36.4 mppa) with the 2029 Permitted Operation (32.0 mppa).

5.3.24 Each Supporting Assessment provides a different perspective on the operational changes associated with the Proposed Order. Supporting Assessment 1 is the assessment within which 2023 is used directly as an assessment year. Its purpose is to provide context on the change between the permitted operational position represented in 2023 and the future operation under the Proposed Order. It is separate from the Principal Assessment, which compares the 2029 Permitted Operation and 2029 Proposed Operation within the same 2029 Future Receiving Environment. Supporting Assessment 2 provides context on the additional operational change between current airport operations and the future operation under the Proposed Order. Supporting Assessment 3 provides context on the operational change that would be required if the Proposed Order were not made and airport operations returned to the currently permitted passenger capacity conditions in 2029. Together, these Supporting Assessments may assist interpretation of the Principal Assessment by illustrating different patterns of operational and environmental change relevant to particular environmental topics.

5.3.25 Supporting Assessments are undertaken only where they provide meaningful additional information that assists interpretation of the Principal Assessment. They are not undertaken for all environmental topics. Table 5-1 summarises the application of the Principal Assessment and Supporting Assessments across the environmental topics considered in this EIAR. The rationale for undertaking or not undertaking the Supporting Assessments is provided within each relevant technical discipline chapter (see the 'Application of the Assessment Framework' subsection of the Assessment Methodology section in each of these chapters).

Table 5-1: Application of Principal and Supporting Assessments

Environmental topic	Principal Assessment	Supporting Assessments 1–3
Traffic and Transport	Yes	Yes
Air Quality	Yes	Yes
Non-aircraft Noise and Vibration	Yes	Yes
Aircraft Noise and Vibration	Yes	No
Land and Soils	Yes	No
Water	Yes	No
Biodiversity	Yes	No
Climate	Yes	Yes
Cultural Heritage	Yes	No
Landscape and Visual	Yes	No
Material Assets (Waste)	Yes	Yes
Material Assets (Built Services)	Yes	Yes
Major Accidents and Disasters	Yes	No
Population and Human Health	Yes	No

5.3.26 Supporting Assessments do not determine likely significant effects, identify additional mitigation measures or influence the residual effects reported within the EIAR. Likely significant effects, mitigation measures and residual effects are determined through the Principal Assessment.

Assessment of Likely Significant Effects

5.3.27 The purpose of Environmental Impact Assessment (EIA) is to identify, describe and assess the likely significant environmental effects of the Proposed Order. The environmental assessments presented within this EIAR identify, predict and evaluate the likely significant environmental effects of the Proposed Order using the methodologies described within the relevant technical discipline chapters.

5.3.28 For the Principal Assessment, likely significant effects are identified by comparing the 2029 Permitted Operation and the 2029 Proposed Operation within the same 2029 Future Receiving Environment.

5.3.29 The term likely *significant effect* has a specific meaning in the context of EIA and should not necessarily be interpreted as meaning that an effect is large, unacceptable or requires mitigation. The determination of whether an effect is likely to be significant is undertaken using topic-specific assessment

methodologies, having regard to relevant legislation, policy, guidance and recognised professional practice.

5.3.30 The methodologies, significance criteria and assessment thresholds applied vary according to the environmental topic and are described within the relevant technical discipline chapters. In general, the assessment of likely significant effects has regard, where relevant, to:

- the sensitivity, importance or value of the affected receptor or resource;
- the nature of the effect (including whether it is direct, indirect, secondary, cumulative, in-combination or transboundary);
- the magnitude, extent and spatial distribution of the effect;
- the duration, frequency, reversibility and timing of the effect;
- compliance with relevant environmental quality standards, objectives or threshold values, where these exist;
- the relationship of the assessment findings to relevant environmental policy and planning objectives; and
- the application of professional judgement where prescribed assessment criteria or thresholds are not available.

5.3.31 Some environmental topics determine significance through consideration of receptor sensitivity and magnitude of change, whereas others apply assessment methodologies prescribed by topic-specific legislation, guidance or recognised professional practice. Where definitive standards, thresholds or assessment criteria are available, these have been applied. Where professional judgement has been exercised, this is identified, and the basis for that judgement is explained within the relevant technical discipline chapter.

Mitigation and Monitoring

5.3.32 The assessment has been undertaken having regard to the mitigation hierarchy, which seeks, where practicable, to avoid environmental effects, reduce or minimise environmental effects, restore environmental receptors where effects cannot be avoided and, where appropriate, offset or compensate for residual effects. Existing environmental design and management measures relating to the operation of Dublin Airport have been taken into account where they form part of the established receiving environment and are expected to remain in place irrespective of the Proposed Order. Where relevant, these measures are identified and described within the Current Receiving Environment section of each technical chapter under ‘Current Design and Management Measures’.

5.3.33 Where the Principal Assessment identifies likely significant adverse effects, additional mitigation measures have been considered where appropriate. Any additional mitigation measures are described within the relevant technical discipline chapter, together with the resulting residual effects.

5.3.34 Monitoring may be undertaken where appropriate to verify the effectiveness of mitigation measures, confirm predicted environmental outcomes or satisfy specific legislative, regulatory or consent requirements. The need for monitoring has been considered on a topic-specific basis having regard to the nature of the environmental effect, the significance of the effect and any mitigation measures identified. Where monitoring measures are required, these are identified within the relevant technical discipline chapter together with any monitoring commitments associated with the Proposed Order.

Residual Effects

5.3.35 Residual effects represent the environmental effects remaining following the implementation of any additional mitigation measures identified through the assessment. Current design and management measures relevant to environmental effects form part of the receiving environment and have therefore been taken into account in determining the effects of the Proposed Order. The significance of residual effects has been determined using the topic-specific methodologies described within the relevant technical discipline chapters and is reported within those chapters.

Cumulative Effects

5.3.36 The EIAR includes an assessment of cumulative, in-combination and interaction effects arising from the Proposed Order, where relevant to each environmental topic. These assessments identify whether the combined effects of the Proposed Order could give rise to likely significant environmental effects beyond those identified through the Principal Assessment.

5.3.37 Cumulative effects arise from the interaction of the Proposed Order with other existing and permitted developments. In-combination effects arise where different environmental effects associated with the Proposed Order act together on the same receptor. Interaction effects consider how changes identified within one environmental topic may influence, or be influenced by, effects identified within another environmental topic.

5.3.38 The need for cumulative, in-combination and interaction assessments varies between environmental topics, depending on the characteristics of the receiving environment, the nature of the potential effects and the existence of credible pathways through which combined effects could occur. Accordingly, the methodology has been tailored to each environmental topic and is described within the relevant technical discipline chapter.

5.3.39 Where cumulative assessment has been undertaken, it has generally comprised the following stages, applied within the relevant technical discipline chapter having regard to the topic-specific Zone of Influence and assessment methodology:

- establishment of an appropriate Zone of Influence (ZOI);
- identification of existing and permitted developments within the ZOI;
- screening of those developments to identify those with the potential to interact with the Proposed Order through a credible cumulative pathway;
- collection and review of relevant information for the shortlisted developments; and
- assessment of the likely cumulative environmental effects arising from the interaction of the Proposed Order with those developments.

5.3.40 Potential in-combination and interaction effects have been identified through coordination between the technical disciplines and consideration of the relationships between environmental topics. Where such effects have been identified, they are reported within the relevant technical discipline chapters.

5.3.41 The findings of the cumulative, in-combination and interaction assessments are presented separately from the Principal Assessment within the relevant technical discipline chapters. These assessments identify any additional likely significant environmental effects arising from cumulative, in-combination or interaction pathways, where relevant.

Indirect, Secondary and Transboundary Effects

5.3.42 In addition to direct effects, the EIAR includes an assessment of indirect, secondary and transboundary effects arising from the Proposed Order, where relevant to the environmental topic being assessed. These effects have been identified and assessed using the topic-specific methodologies described within the relevant technical discipline chapters.

5.3.43 Indirect effects arise where changes associated with the Proposed Order result in environmental effects through an identifiable pathway between the source of the effect and the affected receptor. Secondary effects are those that occur as a consequence of a primary environmental effect and may arise over time or at a different location. The assessment of indirect and secondary effects has been informed by consideration of the relevant source-pathway-receptor relationships for each environmental topic.

5.3.44 Transboundary effects are environmental effects that extend beyond the jurisdiction of Ireland. The potential for transboundary effects has been considered where relevant to the environmental topic and the characteristics of the Proposed Order. Where no credible mechanism exists by which transboundary effects could arise, no detailed assessment has been undertaken.

Assumptions and Limitations

5.3.45 The assessments presented within this EIAR have been undertaken using the best available information reasonably obtainable at the time of assessment, including environmental information, survey data, monitoring records, operational information and forecast data appropriate to each environmental topic. The assumptions underpinning the assessment, including those relating to the Proposed Order and future airport operations, are described in Chapter 4: Proposed Order and have been applied consistently throughout the technical assessments.

5.3.46 The environmental information used within the technical assessments may relate to different survey years and monitoring periods, including information from 2023 and subsequent years. These data are used according to their relevance and representativeness for the environmental topic being assessed and do not, by themselves, define the environmental baseline or operational comparator. Where changes over time may be material to the assessment, those changes are considered in developing the Current and Future Receiving Environments and in applying the Principal Assessment.

5.3.47 Where limitations or constraints were encountered in preparing individual technical assessments, these are identified in the relevant technical chapters together with the approach adopted to address them. These limitations did not prevent the identification and assessment of the likely significant environmental effects of the Proposed Order.

5.3.48 Environmental assessment necessarily involves assumptions regarding future environmental conditions, future airport operations and the availability and quality of information. Where alternative assumptions could reasonably have been adopted, a precautionary or reasonable worst-case approach has been applied where appropriate to ensure that the likely significant environmental effects of the Proposed Order are not underestimated.

5.3.49 Whilst every effort has been made to ensure that the assessment is robust and proportionate, a degree of uncertainty is inherent in all environmental assessment, particularly where predictive modelling, future operational activity or future environmental conditions are being considered. Such uncertainties have been addressed through the application of recognised assessment methodologies, representative datasets and, where appropriate, conservative assumptions.

5.4 Summary

5.4.1 This chapter describes the overarching methodology applied in the preparation of this Environmental Impact Assessment Report (EIAR). It establishes the common framework used to identify and describe the likely significant environmental effects of the Proposed Order, whilst allowing topic-specific assessment methodologies to be applied where appropriate.

5.4.2 The methodology distinguishes between the Current Receiving Environment, the 2029 Future Receiving Environment and the operational conditions used within the assessment. The Current Receiving Environment provides the evidence base for establishing the Future Receiving Environment. The Principal Assessment then compares the 2029 Permitted Operation and the 2029 Proposed Operation within that common future environmental baseline. This provides the basis for identifying the likely significant environmental effects attributable to the Proposed Order. Supporting Assessments provide additional context where relevant.

5.4.3 The methodology described in this chapter has been applied consistently throughout the technical discipline chapters to provide a robust, transparent and proportionate assessment of the likely significant environmental effects of the Proposed Order, using topic-specific survey data, monitoring information, assessment methods and professional judgement where appropriate.