Appendix 12-1: Report to Inform Appropriate Assessment Screening and Natura Impact Statement

AECOM

Report to Inform Appropriate Assessment Screening and Natura Impact Statement

daa

Delivering a better world

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1 Introduction

1.1 Background

1.1.1 This Report to Inform Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) has been prepared by AECOM Ireland Limited (AECOM) on behalf of daa plc (daa) in relation to the Proposed Order under the Dublin Airport (Passenger Capacity) Act 2026 (the 2026 Act).

1.1.2 The Proposed Order seeks to amend the existing planning conditions that restrict passenger throughput at Dublin Airport to 32 million passengers per annum (mppa), to permit passenger throughput of up to 40 mppa. The Proposed Order does not involve any new physical infrastructure or development.

1.1.3 The environmental changes associated with the Proposed Order therefore arise from changes in the operation of Dublin Airport associated with the increase in passenger throughput. These include changes in aircraft activity; airside ground activity associated with aircraft taxiing, handling and servicing; surface access traffic; and activity within existing terminal buildings and operational areas.

1.1.4 The assessment uses 2029 as the assessment year. For the purposes of this document, operation of Dublin Airport in 2029 at the existing permitted passenger throughput of 32 mppa is referred to as the 2029 Permitted Operation, while operation in 2029 at the proposed passenger throughput of 40 mppa is referred to as the 2029 Proposed Operation. The potential effects arising from the Proposed Order are assessed by comparing the 2029 Proposed Operation with the 2029 Permitted Operation.

1.1.5 This document provides the information necessary to determine whether the Proposed Order, either alone or in combination with other plans or projects, is likely to have a significant effect on any European site. Where likely significant effects cannot be excluded, in view of the conservation objectives of those sites, it provides the information necessary to inform An Coimisiún Pleanála's (ACP) assessment of whether the Proposed Order is likely to have a significant effect on any European site, either alone or in combination with other plans or projects. Where subsequently necessary, an assessment of whether, either alone or in combination with other plans or projects, the Proposed Order would adversely affect the integrity of any European site in view of its conservation objectives is presented.

1.2 Legislative Context

1.2.1 Council Directive 92/43/EEC of 21 May 1992 (as amended) on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive') requires Member States of the European Union (EU) to take measures to maintain or restore, at favourable conservation status, natural habitats and species of Community interest. The Habitats Directive requires Member States to designate Special Areas of Conservation (SACs) for habitats listed in Annex I and species listed in Annex II.

1.2.2 Similarly, Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive') provides a framework for the conservation and management of wild birds and requires Member States to classify Special Protection Areas (SPAs) for species listed in Annex I of the Birds Directive and for regularly occurring migratory species.

1.2.3 SACs and SPAs are collectively referred to in this document as 'European sites'. The habitats and species for which an SAC is designated are referred to as Qualifying Interests (QIs), while the bird species and habitats for which an SPA is classified are referred to as Special Conservation Interests (SCIs).

1.2.4 Article 6(3) of the Habitats Directive requires that any plan or project which is not directly connected with or necessary to the management of a European site, but which is likely to have a significant effect on that site, either individually or in combination with other plans or projects, is subject to Appropriate Assessment of its implications for the site in view of the site's conservation objectives. The competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site concerned.

1.2.5 For the Proposed Order, the requirements relating to AA are set out in Chapter 3 of Part 2 of the Dublin Airport (Passenger Capacity) Act 2026.

1.2.6 ACP is carrying out an appropriate assessment because the Minister has applied "to the Commission for an appropriate assessment of the proposal" under section 19(1)(a). daa has prepared this NIS because the Minister, in his ministerial direction issued under section 6(1)(b) (dated 2 November 2026), directed daa to prepare a Natura Impact Statement.

1.2.7 The Proposed Order is not directly connected with or necessary to the management of a European site. It is therefore necessary to determine whether the Proposed Order, either individually or in combination with other plans or projects, is likely to have a significant effect on any European site and, where likely significant effects cannot be excluded, to undertake an Appropriate Assessment of its implications for the site in view of its conservation objectives.

1.2.8 In the Waddenzee judgment (Case C-127/02), the Court of Justice of the European Union held that a plan or project is to be subject to Appropriate Assessment where it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site. The Court further held that an effect is significant where it is likely to undermine the conservation objectives of the site.

1.2.9 ACP is the competent authority responsible for carrying out the Appropriate Assessment in relation to the Proposed Order. In undertaking that assessment, ACP is required to apply the Precautionary Principle and may only conclude that the Proposed Order will not adversely affect the integrity of a European site where there is no reasonable scientific doubt as to the absence of such effects.

1.3 Purpose of this Document

1.3.1 The determination of whether the Proposed Order is likely to have a significant effect on a European site, and the undertaking of an Appropriate Assessment where required, are functions of ACP as the competent authority. This document has been prepared to provide the information necessary to assist ACP in carrying out those functions.

1.3.2 The AA Screening presented in this document provides the information necessary to determine whether the Proposed Order, either alone or in combination with other plans or projects, is likely to have a significant effect on any European site. Where likely significant effects cannot be excluded, the NIS provides the information required under section 19 (2) of the Dublin Airport (Passenger Capacity) Act 2026 to enable ACP to undertake an Appropriate Assessment of the implications of the Proposed Order for the relevant European sites in view of their conservation objectives.

1.3.3 The NIS has been prepared in accordance with the requirements of section 18(2) of the 2026 Act, having regard to best scientific knowledge and an examination of the potential effects of the Proposed Order, either alone or in combination with other plans or projects, on the relevant European sites.

1.4 Quality Assurance and Statement of Authority

1.4.1 This Report to Inform AA Screening and NIS, and the assessment described within it, has been completed in accordance with the AECOM Integrated Management System (IMS). AECOM's IMS places emphasis on professionalism, technical excellence and quality, as well as health, safety, environmental and sustainability management.

1.4.2 The assessment has been undertaken by AECOM ecologists with experience in AA Screening and the preparation of NIS documents. The ecologists involved are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) at the appropriate grade and adhere to its Code of Professional Conduct (CIEEM, 2022a).

1.4.3 This Report to Inform AA Screening and NIS was prepared by Dr Paul Lynas CEnv MCIEEM. Paul is an ecologist with over 22 years' professional experience and is a former Convener of the Irish Section of CIEEM. He holds Bachelor's and Master's degrees in Environmental Biology and Ecology from Queen's University Belfast, where he also completed a Doctorate in Farmland Birds. He has extensive experience in the application of the Habitats Directive and has prepared and reviewed numerous AA Screening and NIS documents. He specialises in ornithology and protected species surveys and has undertaken flora and fauna assessments for public and private sector clients across a range of major infrastructure projects, including power, road and rail projects. He has also acted as an Expert Witness where required.

1.4.4 This Report to Inform AA Screening and NIS was verified by Dr James Riley CEnv MCIEEM. James is a Technical Director and leads AECOM's Appropriate Assessment business across the Republic of Ireland and the UK. He holds an Honours degree in ecology, a Master's degree in crop protection and a

Doctorate in habitat restoration. He has 24 years' experience in AA Screening and preparing Appropriate Assessments. James is a co-author of Institute of Air Quality Management (IAQM) guidance on air quality assessment of nature conservation sites and CIEEM guidance on the same subject (CIEEM, 2021). He has lectured on Appropriate Assessment at Imperial College London, and his experience of airport projects includes the expansion of the capacity of Luton Airport in the UK.

2 The Proposed Order

2.1 Introduction

2.1.1 This section describes the Proposed Order and the operational assumptions relevant to the assessment presented in this Report to Inform AA Screening and NIS. The operational assumptions address passenger throughput, aircraft activity, runway operations, surface access and supporting airport operations and define the airport operational conditions considered in the assessment.

2.1.2 The operational assumptions have been developed having regard to the nature of the Proposed Order, forecast airport demand, the existing operational characteristics of Dublin Airport and the findings of the Dublin Airport Annual Capacity Report (Ricondo, 2026[1]), which concludes that, based on the 2026 airport passenger demand profile, existing airport infrastructure, facilities and operational systems are capable of accommodating an operational scenario of approximately 40.5 mppa without additional infrastructure. These assumptions (described in Section 2.3) provide the basis for assessing the potential effects of the Proposed Order on European sites.

2.2 The Description of the Proposed Order

2.2.1 The Proposed Order would amend the existing passenger capacity conditions to increase the passenger capacity limit from 32 mppa to 40 mppa and clarify that the amended passenger capacity applies to Dublin Airport as a whole, rather than only to Terminal 1 and Terminal 2. It does not authorise any new airport infrastructure, construction works, demolition works or other physical alterations to Dublin Airport.

2.2.2 The Proposed Order does not seek approval for any new airport infrastructure or physical development. Rather, it would enable the continued operation of the existing Dublin Airport Site at a higher permitted passenger throughput. For the purposes of this Report to Inform AA Screening and NIS, the Dublin Airport Site represents the spatial extent of Dublin Airport. The potential effects considered in this Report to Inform AA Screening and NIS therefore arise from changes in airport operations associated with the increase in passenger throughput.

2.2.3 The airport operations associated with the Proposed Order have been defined through a series of operational assumptions relating to passenger throughput, aircraft activity, runway operations, surface access and supporting airport operations.

2.3 Operational Assumptions

2.3.1 The operational assumptions described in this section define the airport operations assessed within this NIS.

2.3.2 Dublin Airport operates as an integrated system comprising runways, aircraft operational areas, terminal buildings, landside transport infrastructure and supporting operational facilities. Passenger throughput is accommodated through the combined operation of these systems rather than any individual infrastructure element. Accordingly, the operational assumptions address the principal elements of airport activity that collectively define the operation of the Dublin Airport Site.

2.3.3 The operational assumptions have been developed to provide a realistic and internally consistent representation of airport operations associated with the Proposed Order. Where appropriate, reasonable worst-case assumptions have been adopted to ensure that the potential effects of the Proposed Order are not underestimated.

2.3.4 The principal operational assumptions comprise:

- passenger throughput;
- aircraft activity;
- runway operational assumptions, including the North Runway Relevant Action (NRRA);
- surface access; and

[1] Dublin Aiport Annual Capacity Assessment, Ricondo. July 2026. Presented in Appendix I.

- supporting airport operations.

2.3.5 These assumptions are described in the following sections.

Passenger Throughput

2.3.6 Passenger throughput figures used in this chapter are expressed on an Aviation Count basis. Passenger throughput is the principal operational parameter associated with the Proposed Order and provides the basis for the airport operations assessed within this NIS. The operational assumptions have been developed to represent the forecast operation of the Dublin Airport Site at a passenger throughput of 40 mppa.

2.3.7 Passenger throughput forecasts have been prepared using the latest available forecast information at the time of assessment having regard to forecast airport demand, the operational characteristics of Dublin Airport and the findings of the Airport Capacity Report (2026). These forecasts have informed the assumptions relating to aircraft activity, runway operations, surface access demand and supporting airport operations.

2.3.8 The operational assumptions have been developed for four airport operational conditions representing the historical, current and forecast operation of Dublin Airport. These four airport operational conditions (with associated passenger throughput) are summarised in Table 2-1.

Table 2-1 Airport Operational Conditions Adopted for the Assessment

Airport Operational Condition	Assessment Year	Passenger Throughput (mppa)	ATMs Daytime (0700-1859)	ATMs Evening (1900-2259)	ATMs Night-time (2300-0659)	Description
Baseline Operation	2023	32.0	156,735	50,168	32,890	Represents the historical operation of Dublin Airport when passenger throughput was constrained by the existing passenger throughput planning conditions.
Current Operation	2025	36.4	181,924	41,399	31,859	Represents the current operation of Dublin Airport.
Permitted Operation	2029	32.0	186,739	54,808	37,444	Represents the forecast operation of Dublin Airport in 2029 assuming the passenger throughput planning conditions remain unchanged.
Proposed Operation	2029	40.0	156,735	50,168	32,890	Represents the forecast airport operation in 2029 associated with the Proposed Order.

2.3.9 The 2023 Baseline schedule represents the existing permitted baseline and planning position, reflecting the existing 32 mppa passenger capacity conditions as a planning constraint. It is derived from operational data for the busy day in Dublin Airport in 2023, including schedules, fleet mix, route structures and overall activity. While recorded passenger throughput for the calendar year reached approximately 33.5 million passengers, the underlying busy day schedule reflects a level of activity broadly consistent with an airport operating at circa 32 million passengers per annum.

2.3.10 The passenger throughput operational conditions for the permitted operation and proposed operation, described in Table 2-1, define the forecast levels of passenger activity adopted for the assessment of effects included in this NIS. These passenger throughput assumptions provide the basis for the remaining operational assumptions described in the following sections.

2.3.11 The passenger throughput operational conditions for the baseline operation and current operation, described in Table 2-1, define the levels of passenger activity used to characterise airport operations at those points in time.

Aircraft Activity

2.3.12 Aircraft activity has been derived from the passenger throughput operational assumptions described above. Forecast aircraft activity represents a key operational assumption associated with the Proposed Order and provides the basis for the runway operational assumptions, surface access demand and supporting airport operations described in the following sections.

2.3.13 Forecast aircraft activity has been developed using the latest available passenger demand forecasts and the operating scenarios set out in the "Dublin Airport Operating Scenarios: Current State and Forecast Operating Schedules: developed in support of the Dublin Airport (Passenger Capacity) Act 2026)" (Mott MacDonald, 2026; Appendix H). The forecast aircraft movements are not derived by applying a simple proportional increase to passenger throughput. Rather, they have been developed using a forecasting methodology that takes account of a range of operational characteristics, including passenger load factors, aircraft fleet mix, aircraft size (gauge), airline operating practices and the expected distribution of aircraft movements throughout the day, evening and night-time periods. These assumptions recognise that changes in passenger throughput may be accommodated through a combination of changes in aircraft movements, passenger load factors and aircraft gauge, rather than solely through an increase in aircraft numbers.

2.3.14 The Proposed Order does not seek to amend or alter aircraft flight paths, airspace arrangements, Standard Instrument Departures (SIDs), Standard Arrival Routes (STARs), or other air traffic management procedures. Responsibility for the management of aircraft flight paths within Irish controlled airspace, including air traffic control, route management and the design of instrument flight procedures, rests with AirNav Ireland and is subject to separate statutory and regulatory processes. Accordingly, the aircraft activity assumptions adopted within this NIS relate solely to the forecast number, timing and operational characteristics of aircraft movements associated with the passenger throughput assumptions and do not assume any changes to flight path design or airspace management.

2.3.15 Aircraft activity assumptions have been developed for each of the four airport operational conditions described in Table 2-2. Together, these assumptions define the forecast aircraft activity associated with the historical, current and future operation of Dublin Airport and provide a realistic and internally consistent representation of aircraft operations associated with the Proposed Order.

2.3.16 The forecast aircraft activity assumptions presented in Table 2-2 provide the basis for the runway operational assumptions.

Table 2-2 Aircraft activity assumptions

Operational Assumption	Forecast Aircraft Movements (per annum)	ATMs Daytime (0700-1859)	ATMs Evening (1900-2259)	ATMs Night-time (2300-0659)	Principal Operational Characteristics
2023 Baseline Operation	239,800	156,735	50,168	32,890	Represents the historical aircraft activity associated with airport operations when passenger throughput was constrained by the existing passenger throughput planning conditions.
2025 Current Operation	255,600	181,924	41,399	31,859	Represents the aircraft activity associated with the current operation of Dublin Airport.
2029 Permitted Operation	239,800	186,739	54,808	37,444	Represents the forecast aircraft activity assuming the passenger throughput planning conditions are not amended.
2029 Proposed Operation	279,000	156,735	50,168	32,890	Represents the forecast aircraft activity associated with the Proposed Order.

2.3.17 For the 2029 Permitted Operation, annual aircraft movements have been assumed to remain at the 2023 Baseline Operation level of 239,800 movements, reflecting the common passenger throughput assumption of 32 mppa. This provides a consistent basis for representing airport activity under the existing passenger capacity conditions and for comparison with the 2029 Proposed Operation.

Runway Operations

2.3.18 The runway operational assumptions adopted for this NIS define how forecast aircraft activity is distributed across the runway system and establish the principal operational controls applicable to runway operations at Dublin Airport. These assumptions have been developed using the forecast aircraft activity described above and provide a realistic and internally consistent representation of runway operations associated with the Proposed Order.

2.3.19 Aircraft operations are principally determined by prevailing meteorological conditions, with aircraft generally operating into the wind for reasons of safety and operational efficiency. The parallel runways (Runways 10R/28L and 10L/28R) accommodate the majority of aircraft movements, whilst the Crosswind Runway (Runway 16/34) is used only where wind conditions or operational requirements make this necessary.

2.3.20 The operation of the runway system is governed by the conditions attached to the North Runway planning permission, including the runway mode of operation established under Planning Condition 3 (Option 7B). This establishes the preferred use of the parallel runways for arrivals and departures under prevailing easterly and westerly wind conditions. The allocation of aircraft to individual runways at any given time remains the responsibility of AirNav Ireland, taking account of prevailing weather conditions, safety requirements and applicable operational procedures.

2.3.21 The North Runway Relevant Action (NRRA) concerns operating restrictions applicable to the North Runway and remains subject to an ongoing regulatory process. For the 2029 assessment scenarios, the runway operational assumptions reflect the operating parameters arising from the NRRA process, including North Runway operating hours of 06:00–23:59 and operation of the Noise Quota Scheme (NQS) with an annual quota of 16,260 QC points.

2.3.22 The July 2025 ACP decision on the NRRA also included an annual night-time movement limit of 35,672 movements. Having regard to the European Commission Decision dated 10 February 2026, this movement limit has not been incorporated into the 2029 assessment assumptions. Accordingly, the future assessment scenarios assume operation of the NQS without an annual night-time movement limit.

2.3.23 These assumptions are considered to provide a realistic and reasonable worst-case basis for the environmental assessment. They permit aircraft movements during the shoulder periods falling within the night-time assessment period and, through application of the NQS without an annual movement limit, provide greater flexibility to accommodate aircraft movements than a scenario in which both the NQS and a movement limit apply.

Surface Access Demand

2.3.24 Surface access operational assumptions have been developed using the passenger throughput and aircraft activity assumptions described above. They define the forecast demand for travel to and from the Dublin Airport Site associated with the airport operational conditions adopted for this assessment.

2.3.25 Surface access demand has been derived using the latest available passenger demand forecasts and transport forecasting information prepared to support the Proposed Order[2]. The operational assumptions take account of passenger travel demand, airport employee travel, meeters and greeters, public transport mode share, vehicle occupancy and other travel characteristics that influence journeys to and from the Dublin Airport Site.

2.3.26 The surface access operational assumptions recognise that changes in passenger throughput do not translate directly into proportional changes in road traffic. Forecast travel demand reflects the combined influence of passenger travel behaviour, employee travel, mode share, vehicle occupancy and other operational characteristics, providing a realistic and internally consistent representation of future surface access demand associated with the Proposed Order.

[2] Chapter 6: Traffic and Transport, Dublin Airport (Passenger Capacity) Act 2016 EIAR

2.3.27 The surface access operational assumptions described above provide the basis for the forecast transport demand associated with the airport operational conditions adopted within this assessment.

Supporting Airport Operations

2.3.28 Supporting airport operations include activities such as aircraft ground handling, airside vehicle movements, aircraft servicing, cargo and catering operations, airport maintenance, utilities, waste management and other operational support functions. These activities are expected to vary in response to the forecast level of airport operations associated with each airport operational condition and, where relevant to the assessment of effects on European sites, are considered within this Report to Inform AA Screening and NIS.

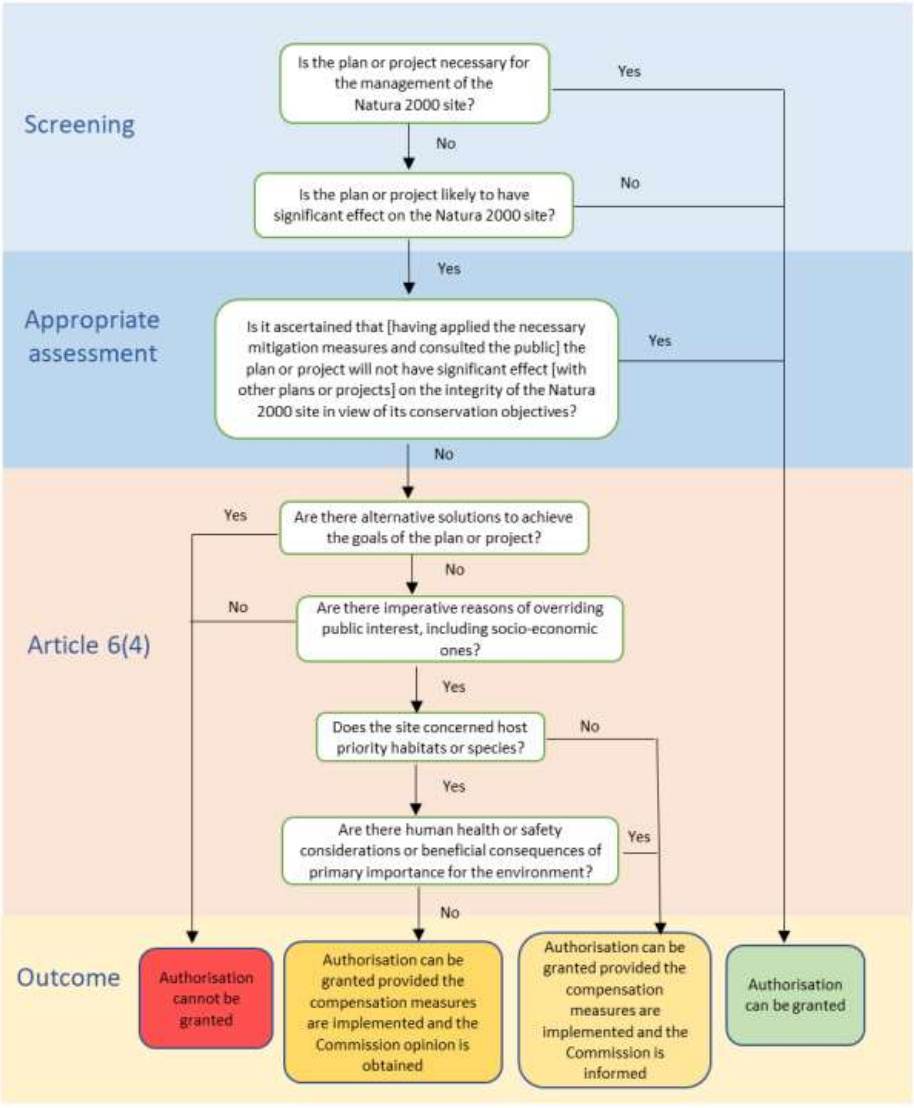
2.3.29 The supporting airport operations described above do not represent separate operational assumptions. Rather, they are consequential activities arising from the forecast airport operation defined by the passenger throughput, aircraft activity, runway operational and surface access assumptions presented in this section. Together, these operational assumptions provide a realistic and internally consistent representation of the forecast operation of the Dublin Airport Site and provide the basis for the assessment presented in this Report to Inform AA Screening and NIS.

3 Methodology

3.1 Overview of the Appropriate Assessment Process

3.1.1 The process required under Article 6(3) and, where applicable, Article 6(4) of the Habitats Directive follows a staged approach. Plate 3-1 summarises the stages of the Appropriate Assessment process, based on European Commission guidance (European Commission, 2021).

Plate 3-1: The steps of Appropriate Assessment (taken from European Commission (2021))



3.1.2 The first stage is AA Screening. The purpose of AA Screening is to determine, in view of best scientific knowledge, whether the Proposed Order, either alone or in combination with other plans or projects, is likely to have a significant effect on a European site.

3.1.3 Where likely significant effects on a European site can be excluded on the basis of objective information, no Appropriate Assessment is required in respect of that site. Where likely significant effects cannot be excluded, including where reasonable scientific doubt remains, an Appropriate Assessment of the implications of the Proposed Order for the European site in view of its conservation objectives is required.

3.1.4 The purpose of Appropriate Assessment is to determine whether the Proposed Order, either alone or in combination with other plans or projects, would adversely affect the integrity of a European site in view of its conservation objectives. The assessment considers the implications for the relevant Qualifying Interests (QIs) and Special Conservation Interests (SCIs) and the conservation objectives of the European site.

3.1.5 Mitigation measures may not be taken into account when determining whether likely significant effects can be excluded at the AA Screening stage. Where Appropriate Assessment is required, measures intended to avoid or reduce potential adverse effects may be taken into account in determining whether adverse effects on site integrity can be excluded.

3.2 Sources of Guidance

3.2.1 This Report to Inform AA Screening and NIS has been prepared having regard to the European Commission guidance document Assessment of Plans and Projects in relation to Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (European Commission, 2021).

3.2.2 Regard has also been given to the Office of the Planning Regulator (OPR) document Appropriate Assessment Screening for Development Management (OPR, 2021). The approach to AA Screening adopted in this document reflects the source-pathway-receptor approach described in that guidance, as summarised in Plate 3-2.

Plate 3-2: The AA Screening process (taken from OPR (2021))



3.2.3 In addition, the following sources of guidance were also considered during the preparation of this Report to Inform AA Screening and NIS:

- Appropriate Assessment of Plans and Projects in Ireland (DoEHLG, 2010);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats Directive' 92/43/EEC (European Commission, 2018); and,
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular Letter NPWS 1/10 & PSSP 2/10 (NPWS, 2010).

3.3 Overview of Approach to AA Screening (Assessing LSE)

3.3.1 Table 3-1 summarises the steps involved in AA Screening, as set out in the OPR Guidance on Appropriate Assessment Screening (OPR, 2021), and identifies where each step is addressed within this document.

Table 3-1 Summary of Steps to AA Screening Defined in OPR Guidance

Step (OPR, 2021)	Information required (OPR, 2021)	Relevant section(s) of this Document	Information provided
Step 1	Description of the Proposed Order and site characteristics	Section 2: Proposed Order; Section 4: Potential Impacts on European Sites; Appendix B: Baseline Conditions	Section 2 describes the Proposed Order and the operational assumptions adopted for the assessment, including the comparison of the 2029 Permitted Operation (32 mppa) with the 2029 Proposed Operation (40 mppa). Section 4 identifies the potential impact pathways associated with the Proposed Order. Appendix B describes the relevant baseline ecological conditions.
Step 2	Identification of relevant European sites	Section 5: European Sites within the Zone of Influence	Section 5 identifies the European sites that could potentially be affected by the Proposed Order, having regard to the potential impact pathways and associated Zones of Influence.
Step 3	Assessment of likely significant effects using the source-pathway-receptor model	Section 6: Test of Likely Significant Effects (AA Screening)	Section 6 assesses whether the Proposed Order, either alone or in combination with other plans or projects, is likely to have a significant effect on the relevant European sites in view of their conservation objectives.
Step 4	Screening determination and possible outcomes		

3.4 Approach to NIS

3.4.1 Where likely significant effects cannot be excluded at the AA Screening stage, the information necessary to inform ACP's Appropriate Assessment is provided in Section 7: Natura Impact Statement. Section 7 considers the relevant impact pathways and European sites identified through the AA Screening process, any mitigation measures relied upon, and whether the Proposed Order, either alone or in combination with other plans or projects, would adversely affect the integrity of the relevant European sites in view of their conservation objectives.

4 Potential Impacts on European Sites

4.1 Establishing the Potential Zone of Influence (ZOI)

4.1.1 The Zone of Influence (ZoI) is the area within which the Proposed Order could result in effects on ecological features. The extent of the ZoI varies according to the nature of the potential impact pathway and the sensitivity and characteristics of the ecological receptor. Accordingly, a single fixed-distance ZoI has not been applied to the Proposed Order.

4.1.2 The potential ZoI has been established using a source-pathway-receptor approach, having regard to the nature and extent of the operational changes associated with the Proposed Order, relevant baseline information, published guidance and scientific evidence, and professional judgement. Where uncertainty exists, the Precautionary Principle has been applied.

4.1.3 European sites have been considered where a potential pathway exists by which the Proposed Order could affect their QIs or SCIs, including where relevant through effects on functionally linked habitat used by mobile species outside the boundaries of a European site. The absence of a potential source-pathway-receptor linkage provides a basis for excluding a European site or QI/SCI from further consideration in respect of that impact pathway.

4.1.4 The potential impact pathways associated with the Proposed Order and the ZoI relevant to each pathway are identified in Section 4. European sites within those ZoIs are identified in Section 5 and assessed for likely significant effects in Section 6.

4.2 Identifying the ZOI for the Proposed Order

4.2.1 The Proposed Order seeks to amend the existing passenger throughput restriction of 32 mppa to permit passenger throughput of up to 40 mppa and does not involve any new physical infrastructure or development. The potential effects considered in defining the ZoI therefore arise from changes in airport operations associated with the increase in passenger throughput.

4.2.2 The ZoI has been identified by considering the potential changes arising from the 2029 Proposed Operation (40 mppa) compared with the 2029 Permitted Operation (32 mppa) and whether those changes could give rise to a source-pathway-receptor linkage to a European site or its QIs/SCIs.

4.2.3 Relevant baseline information, including desk study and field survey data, has been used to inform the identification of potential pathways and receptors. The geographical extent of field survey does not, however, define the ZoI, which has been established separately for each potential impact pathway having regard to the nature and extent of the potential effect and the sensitivity and characteristics of the relevant QIs/SCIs.

4.2.4 The potential operational impact pathways associated with the Proposed Order are considered in the following subsections. Where no source-pathway-receptor linkage exists, the relevant impact pathway is excluded from further consideration. Where a potential pathway to a European site or its QIs/SCIs exists, that pathway is taken forward to identify the relevant European sites and, where appropriate, to the assessment of likely significant effects.

4.3 Potential Impacts Requiring Assessment

4.3.1 The Proposed Order does not involve any new physical infrastructure or development. Potential effects on European sites are therefore limited to those arising from changes in operational activities associated with the increase in passenger throughput from the 2029 Permitted Operation (32 mppa) to the 2029 Proposed Operation (40 mppa), including changes in aircraft activity, airside and landside activity, surface access and supporting airport operations.

4.3.2 The potential impact pathways arising from these operational changes, and their potential to affect European sites or their QIs/SCIs, are considered below.

Loss of or damage to habitat within the boundary of a European site

4.3.3 Direct loss of or damage to habitat within a European site could only arise where physical works or development affected land within the boundary of an SAC or SPA. The Dublin Airport Site does not lie within a European site, and the Proposed Order does not involve any new physical infrastructure or development. There is therefore no pathway for direct loss of or damage to habitat within a European site, and this impact requires no further consideration.

Loss of or damage to habitat outside of a European site which supports QI/SCI species

4.3.4 Habitat outside the boundary of a European site may nevertheless be functionally linked to that site where it is used by QI/SCI species and contributes to the achievement of the site's conservation objectives. The potential importance of effects on habitat outside a European site was recognised by the CJEU in Holohan and Others v An Bord Pleanála (Case C-461/17).

4.3.5 The Proposed Order does not involve any new physical infrastructure, land take or other physical alteration of habitat. There is therefore no pathway for loss of or direct physical damage to functionally linked habitat, and this impact requires no further consideration.

Disturbance or displacement of QI/SCI species

4.3.6 The increase in existing operational activities associated with the 2029 Proposed Operation compared with the 2029 Permitted Operation has the potential to cause disturbance or displacement of QI/SCI species. Potential sources include increased aircraft activity, airside and landside vehicle movements and other supporting airport operations. Disturbance may arise through increased noise, vibration, visual activity or artificial illumination and could affect QI/SCI species either within a European site or while using functionally linked habitat outside the site boundary.

4.3.7 Increased aircraft activity associated with the Proposed Order could also result in increased disturbance of QI/SCI species through aircraft noise and visual disturbance. The potential for disturbance will depend on factors including the nature, location and timing of the activity, the distribution and behaviour of the species concerned, and species sensitivity and habituation. Potential consequences may include behavioural responses, increased energy expenditure, reduced feeding or resting time and displacement from otherwise suitable habitat.

4.3.8 Based on the published guidance and evidence referenced below, the following distances have been used when considering the potential for operational activities associated with the Proposed Order to disturb QI/SCI species:

- otter – 150 m, in accordance with guidance published by the National Roads Authority (NRA, now Transport Infrastructure Ireland (TII)) (NRA, 2006), which identifies this distance in relation to otter breeding sites. A distance of 20 m is applicable to other resting sites not used for breeding purposes;
- lesser horseshoe bat – on a precautionary basis, a distance of 150 m has been adopted when considering potential disturbance of roosting lesser horseshoe bats by operational activities. As described by NPWS (2018), lesser horseshoe bats may forage within approximately 2.5 km of their roosts; therefore, a ZoI of 2.5 km has been considered in relation to potential effects on foraging habitat;
- non-breeding waterbirds – the Waterbird Disturbance Mitigation Toolkit (Cutts *et al.*, 2013) provides species-specific information on the sensitivity of waterbirds to disturbance and indicates that disturbance from noisy activities may generally occur at distances of up to approximately 300 m; and
- breeding birds – a distance of 1 km has been adopted, representing the maximum distance at which NatureScot guidance identifies the potential for disturbance of the most sensitive species for which SPAs are designated (Goodship *et al.*, 2022).

4.3.9 No published species-specific disturbance distance was identified for grey seal or harbour seal in relation to airport operations. Disturbance at haul-out or pupping sites has therefore been considered possible up to approximately 200 m, based on available guidance relating to recreational water sports (Wilson, undated). In relation to aircraft overflight, the review of published literature presented in Appendix C

indicates that aircraft flying above approximately 500 m are unlikely to cause disturbance to marine mammals. SACs designated for marine mammals that may be overflown by aircraft below approximately 500 m have therefore been considered to be within the potential ZoI for aircraft disturbance.

4.3.10 Disturbance of fish species has been considered possible where operational activities occur within 50 m of a watercourse supporting, or hydrologically connected to habitat supporting, QI fish species, although the potential for disturbance is reduced by the damping of vibration through intervening soil and rock.

4.3.11 Snail and slug species have no acoustic sense (Chase, 2001) and are not considered susceptible to disturbance arising from airport operational activities. No disturbance ZoI has therefore been identified for these species.

Non-Aircraft Noise and Vibration

4.3.12 As the Proposed Order does not involve construction works or new physical infrastructure, changes in non-aircraft noise would arise principally from changes in road traffic associated with the increase in passenger throughput and, to a lesser extent, changes in existing operational activities within the Dublin Airport Site.

4.3.13 Operational road traffic noise has been assessed by comparing forecast road traffic noise associated with the 2029 Proposed Operation (40 mppa) against the 2029 Permitted Operation (32 mppa), using the traffic forecasts prepared for the Proposed Order[3].

4.3.14 Changes in road traffic noise have the potential to result in disturbance where QI/SCI species occur sufficiently close to affected roads. The potential for such effects is therefore considered in identifying European sites and functionally linked habitats within the ZoI and, where relevant, in the assessment of likely significant effects.

Aircraft Noise and Vibration

4.3.15 The increase in aircraft activity associated with the 2029 Proposed Operation has the potential to increase aircraft noise and associated disturbance experienced by QI/SCI species within European sites or using functionally linked habitat.

4.3.16 Aircraft air noise has been modelled using the Federal Aviation Administration Aviation Environmental Design Tool (AEDT), taking account of aircraft type, operation, route and flight profile, together with local terrain and meteorological conditions. Aircraft ground noise has been modelled using CadnaA in accordance with ISO 9613-2:1996[4].

4.3.17 The potential for aircraft noise and visual disturbance to affect QI/SCI species has been considered having regard to the predicted change in aircraft activity and noise exposure, aircraft flight paths and altitude, the location and use of relevant habitats, and the sensitivity and behaviour of the species concerned.

4.3.18 The assessment also considers the temporal characteristics of aircraft activity, including night-time activity where relevant to the behaviour and use of habitats by QI/SCI species. The potential ecological effects of aircraft disturbance are considered further in the assessment of likely significant effects and, where required, the NIS.

Waterborne pollution

4.3.19 Increased aircraft movements and associated operational activity under the 2029 Proposed Operation have the potential to increase the overall mass of de-icing chemicals applied during periods when de-icing is required. Increased operational activity could also increase the potential for accidental releases of pollutants through events such as spillages, leaks and fires. Where a hydrological pathway exists, such pollutants could potentially affect habitats or QI/SCI species associated with a European site.

4.3.20 Dublin Airport is served by an established surface water drainage and pollution control system. Pollution Control Facilities operate on the Cuckoo Stream and Forest Little Stream catchments and collect runoff identified as contaminated, which is stored and discharged to the public sewer in accordance with the

[3] Chapter 8: Non-aircraft Noise Dublin Airport (Passenger Capacity) Act 2026 EIAR
[4] Chapter 9: Aircraft Noise Dublin Airport (Passenger Capacity) Act 2026 EIAR

applicable Trade Effluent Discharge Licence. The system also provides for the segregation of contaminated runoff in the event of an accidental spill.

4.3.21 Further drainage and pollution control measures are being implemented as part of the ongoing operation and management of Dublin Airport and will be in place when the Proposed Order comes into effect. These measures form part of the 2029 Future Receiving Environment rather than measures introduced specifically for the purpose of avoiding effects arising from the Proposed Order.

4.3.22 The potential increase in de-icer load associated with the 2029 Proposed Operation has been assessed through detailed de-icer pollution modelling. The modelling demonstrates that, notwithstanding the increased load entering the drainage system, there would be no increase in the mass load of de-icer pollution discharged to receiving surface waters and no deterioration of the receiving surface water environment. The separate Water Framework Directive Assessment (Appendix J) also concludes that the Proposed Order would not result in deterioration of the status of receiving surface water bodies.

4.3.23 On this basis, the Proposed Order would not result in an increase in waterborne pollution reaching receiving surface waters. There is therefore no pathway by which the Proposed Order could give rise to likely significant effects on a European site through waterborne pollution, and this impact requires no further consideration.

Changes to surface water hydrology

4.3.24 Changes to surface water hydrology can arise from physical alteration of watercourses or changes in the extent or characteristics of impermeable surfaces and associated runoff. The Proposed Order does not involve new physical infrastructure, changes to the developed footprint of Dublin Airport, new areas of hardstanding, or physical alteration, diversion or culverting of watercourses.

4.3.25 The Proposed Order would therefore not alter the volume or rate of surface water runoff generated within the Dublin Airport Site or result in physical changes to existing watercourses or drainage catchments. There is consequently no pathway by which the Proposed Order could result in changes to surface water hydrology capable of affecting a European site, and this impact requires no further consideration.

Changes to groundwater conditions

4.3.26 Changes to groundwater levels or flows can arise from excavation, dewatering or other physical interference with groundwater. The Proposed Order does not involve excavation, below-ground works, new impermeable areas or other physical development. There is therefore no pathway for the Proposed Order to alter groundwater levels or groundwater flow.

4.3.27 There is also potential in principle for operational pollutants to reach groundwater. However, runoff from existing impermeable surfaces is collected by the airport surface water drainage network and the paved-area drainage network is sealed to protect groundwater from contamination. Where runoff is contaminated, it is managed through the airport pollution-control systems prior to discharge.

4.3.28 Having regard to the absence of physical works or new infiltration pathways and the established means by which runoff from operational areas is collected and managed, the Proposed Order would not result in a new or increased pathway for effects on groundwater capable of affecting a European site. This impact therefore requires no further consideration.

Airborne pollution

4.3.29 Increased aircraft movements, airport-related road traffic and other operational activities associated with the 2029 Proposed Operation have the potential to result in changes in emissions of airborne pollutants. Where sensitive habitats associated with a European site occur within the influence of these emissions, changes in air quality or atmospheric deposition could potentially affect QIs/SCIs or habitats upon which they depend.

4.3.30 As the Proposed Order does not involve construction or other physical works, there is no pathway for construction dust to affect a European site. The relevant airborne pollution pathways are therefore those associated with emissions from increased road traffic, aircraft and other airport operational sources.

4.3.31 The pollutants of greatest relevance to sensitive ecological receptors are oxides of nitrogen (NOx), ammonia (NH_3) and nitrogen deposition. At sufficiently high concentrations, NOx and ammonia can directly affect vegetation, while increased nitrogen deposition can alter soil nutrient conditions and,

where sufficiently great, affect the composition and quality of nitrogen-sensitive habitats. The sensitivity of individual habitats varies and is assessed with reference to applicable Critical Levels and Critical Loads.

4.3.32 Air quality effects associated with road traffic are generally greatest close to the road and decrease rapidly with distance. In accordance with the Institute of Air Quality Management (IAQM) and relevant road air quality guidance, European sites containing potentially sensitive ecological receptors within 200 m of roads forming part of the Affected Road Network have therefore been considered to fall within the potential ZoI for road traffic emissions.

4.3.33 For the purposes of this assessment, the Affected Road Network comprises roads meeting the relevant traffic-change criteria applied in the air quality assessment for the Proposed Order[5].

4.3.34 Aircraft emissions may also affect ground-level air quality in the vicinity of the airport and beneath flight paths at lower altitudes. The International Civil Aviation Organization (ICAO) Airport Air Quality Manual (ICAO, 2020) indicates that the contribution of aircraft emissions to ground-level NO_2 concentrations becomes very small with increasing altitude and identifies approximately 304 m as the typical limiting altitude for ground-level NO_2 concerns. On a precautionary basis, this assessment assumes that the potential ground-level air quality influence of aircraft emissions becomes negligible where aircraft are at an altitude of 1,000 m or greater.

4.3.35 European sites containing potentially sensitive ecological receptors and located within the area potentially influenced by aircraft emissions below 1,000 m have therefore been considered within the potential ZoI for aircraft-related airborne pollution.

4.3.36 The sensitivity of habitats to atmospheric nitrogen deposition varies. Marine and intertidal habitats subject to regular tidal flushing are generally less susceptible to accumulation of atmospherically deposited nitrogen, while many open lowland freshwater habitats are primarily phosphorus-limited rather than nitrogen-limited. The sensitivity of individual QI habitats and supporting habitats to airborne pollution is therefore considered having regard to the ecological characteristics of the receptor and, where applicable, the relevant Critical Level or Critical Load.

4.3.37 On this basis, a potential pathway exists by which changes in airborne pollution associated with the Proposed Order could affect sensitive QIs/SCIs or supporting habitats. Airborne pollution is therefore taken forward for consideration in identifying relevant European sites and in the assessment of likely significant effects.

Prevention of migratory movements of QI/SCI species

4.3.38 Effects on the migratory or routine movements of QI/SCI species can arise where a project creates a physical or functional barrier to movement, including through physical obstruction, deterioration of an aquatic pathway, or disturbance of sufficient magnitude to prevent passage.

4.3.39 The Proposed Order does not involve any new physical infrastructure, alteration of watercourses or other physical works capable of creating a barrier to the movement of QI/SCI species. Potential effects arising from waterborne pollution and disturbance have been considered separately above. The Proposed Order would therefore not create a new physical or functional barrier to the migratory or routine movements of QI/SCI species, and this impact requires no further consideration.

Injury or mortality of QI/SCI species

4.3.40 The Proposed Order does not involve new physical infrastructure or land take and would not therefore introduce new sources of injury or mortality associated with construction or habitat clearance. However, increased aircraft activity associated with the 2029 Proposed Operation could potentially increase the risk of collision between aircraft and SCI bird species using the Dublin Airport Site or surrounding functionally linked habitat.

4.3.41 SCI bird species may move between European sites and feeding, roosting or other supporting habitats outside European site boundaries, including across or in the vicinity of Dublin Airport. An increase in aircraft movements could therefore potentially alter the risk of aircraft collision (‘bird strike’) for SCI species.

[5] Chapter 7: Air Quality Dublin Airport (Passenger Capacity) Act 2026 EIAR

4.3.42 In accordance with the NatureScot guidance referenced in this assessment (SNH, 2016), as applicable across the entire British Isles, an initial precautionary ZoI of 20 km from Dublin Airport has been applied when considering the potential for injury or mortality of SCI bird species through bird strike. European sites designated for SCI bird species that could use habitats within this area are therefore considered further in the assessment of likely significant effects.

Spread of invasive non-native species

4.3.43 The spread of invasive non-native species can result in adverse effects on native habitats and species, including QIs/SCIs. However, the Proposed Order does not involve construction, vegetation clearance, earthworks, movement of soils or other physical activities that could create a new pathway for the introduction or spread of invasive non-native species.

4.3.44 The Proposed Order would not materially alter the existing operation of Dublin Airport in respect of pathways for the introduction or spread of invasive non-native species. In addition, no invasive species listed under the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024) have been identified within the Dublin Airport Site or adjacent areas. There is therefore no pathway for the Proposed Order to result in effects on a European site through the spread of invasive non-native species, and this impact requires no further consideration.

4.4 Summary of Potential Impacts on European Sites

4.4.1 Table 4-1summarises the potential impact pathways considered above and identifies those for which a potential source-pathway-receptor linkage to a European site cannot be excluded and which are therefore taken forward to the AA Screening assessment in Section 6.

Table 4-1 Summary of Potential Impact Pathways to European Sites

Potential Impact Pathway	Potential pathway to European Site?	Justification
Loss of or damage to habitat within a European site	No	The Dublin Airport Site is not located within a European site and the Proposed Order does not involve new physical infrastructure or land take.
Loss of or damage to functionally linked habitat	No	The Proposed Order does not involve new physical infrastructure, land take or physical alteration of habitat.
Disturbance or displacement of QI/SCI species, including aircraft noise, non-aircraft noise, visual disturbance and lighting	Yes	Increased aircraft activity, surface access movements and other airport operational activities have the potential to increase disturbance of QI/SCI species within European sites or using functionally linked habitat.
Waterborne pollution	No	Detailed modelling demonstrates that the 2029 Proposed Operation would not increase the mass load of de-icer pollution discharged to receiving surface waters or result in deterioration of the receiving surface water environment.
Changes to surface water hydrology	No	The Proposed Order involves no new physical infrastructure or impermeable areas and would not alter the volume or rate of surface water runoff or physically alter watercourses.
Changes to groundwater conditions	No	The Proposed Order involves no excavation, below-ground works or new infiltration pathways and would not alter groundwater levels or flows. Operational runoff from paved areas is collected through the established sealed drainage and pollution-control system.
Airborne pollution	Yes	Increased aircraft activity, airport-related road traffic and other operational activities have the potential to increase emissions and atmospheric deposition affecting sensitive ecological receptors.
Prevention of migratory or routine movements of QI/SCI species	No	The Proposed Order would not introduce a new physical or functional barrier to the movement of QI/SCI species.

Potential Impact Pathway	Potential pathway to European Site?	Justification
Injury or mortality of SCI species	Yes	Increased aircraft movements have the potential to alter the risk of collision between aircraft and SCI bird species.
Spread of invasive non-native species	No	The Proposed Order involves no construction, earthworks, vegetation clearance or movement of soils and would not introduce a new pathway for the spread of invasive non-native species.

5 European Sites within the ZoI

5.1 Introduction

5.1.1 This section identifies the European sites that fall within the potential ZoI of one or more of the impact pathways identified in Section 4. The identification of European sites has been undertaken using the source-pathway-receptor approach described in Section 3, having regard to the pathway-specific ZoIs established in Section 4.

5.1.2 A description of habitats within and surrounding the Dublin Airport Site that may provide functionally linked habitat for mobile QI/SCI species associated with European sites is provided in Appendix B.

5.1.3 The identification of European sites and the assessment of potential effects has been informed by ecological baseline information obtained through desk study and field surveys. The studies and surveys undertaken, including their scope and methodology, are described in Appendix A. The resulting baseline conditions, including relevant habitats, watercourses and ecological receptors recorded within and around Dublin Airport, are summarised in Appendix B. This information has been used, together with information on European sites and their QIs/SCIs, to identify potential source-pathway-receptor linkages and inform the assessment presented in the following sections.

5.2 European Sites

5.2.1 Fourteen European sites have been identified within the potential ZoI of the Proposed Order. These sites, their QIs/SCIs and their location in relation to Dublin Airport are presented in Table 5-1. The identification and assessment of relevant European sites have had regard to the Site-Specific Conservation Objectives (SSCOs) published by the National Parks and Wildlife Service (NPWS) for each site, together with the associated supporting documentation where available. Further information on the European sites and their SSCOs is summarised in Appendix E.

Table 5-1: Information on European sites within the potential ZoI of the Proposed Order

Site name [site code]	QI/SCI	Location in relation to the Proposed Order
Malahide Estuary SPA [004025]	*Non-breeding waterbirds:* • Great crested grebe *Podiceps cristatus* [A005] • Light-bellied brent goose *Branta bernicla hrota* [A046] • Shelduck *Tadorna tadorna* [A048] • Pintail *Anas acuta* [A054] • Goldeneye *Bucephala clangula* [A067] • Red-breasted merganser *Mergus serrator* [A069] • Oystercatcher *Haematopus ostralegus* [A130] • Golden plover *Pluvialis apricaria* [A140] • Grey plover *Pluvialis squatarola* [A141] • Knot *Calidris canutus* [A143] • Dunlin *Calidris alpina* [A149] • Black-tailed godwit *Limosa limosa* [A156] • Bar-tailed godwit *Limosa lapponica* [A157] • Redshank *Tringa totanus* [A162] *Wetland habitats supporting waterbirds:* • Wetland and waterbirds [A999]	4.0 km north-east
Malahide Estuary SAC	• Mudflats and sandflats not covered by seawater at low tide [1140] • *Salicornia* and other annuals colonising mud and sand [1310] • Atlantic salt meadows *Glauco-Puccinellietalia maritimae* [1330] • Mediterranean salt meadows *Juncetalia maritime* [1410] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]	4.0 km north-east

Site name [site code]	QI/SCI	Location in relation to the Proposed Order
	• Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	
Baldoyle Bay SPA [004016]	*Non-breeding waterbirds:* • Light-bellied brent goose [A046] • Shelduck [A048] • Ringed plover *Charadrius hiaticula* [A137] • Golden plover [A140] • Grey plover [A141] • Bar-tailed godwit [A157] *Wetland habitats supporting waterbirds:* • Wetland and waterbirds [A999]	5.3 km east Baldoyle Bay is located 6.5 km downstream of the Proposed Order via the Cuckoo Stream and the Mayne River.
Baldoyle Bay SAC [000199]	• Mudflats and sandflats not covered by seawater at low tide [1140] • *Salicornia* and other annuals colonising mud and sand [1310] • Atlantic salt meadows *Glauco-Puccinellietalia maritimae* [1330] • Mediterranean salt meadows *Juncetalia maritimi* [1410]	5.3 km east Baldoyle Bay is located 6.5 km downstream of the Dublin Airport Site boundary.
South Dublin Bay and River Tolka Estuary SPA [004024]	*Non-breeding waterbirds:* • Light-bellied brent goose [A046] • Oystercatcher [A130] • Ringed plover [A137] • Grey plover [A141] • Knot [A143] • Sanderling [A144] • Dunlin [A149] • Bar-tailed godwit [A157] • Redshank [A162] • Black-headed gull [A179] *Breeding waterbirds:* • Common tern *Sterna hirundo* [A193] *Passage (during post-breeding/pre-migration roosting) waterbirds:* • Roseate tern *Sterna dougallii* [A192] • Common tern [A193] • Arctic tern *Sterna paradisaea* [A194] *Wetland habitats supporting waterbirds:* Wetland and waterbirds [A999]	5.8 km south
North Bull Island SPA [004006]	*Non-breeding waterbirds:* • Light-bellied brent goose [A046] • Shelduck [A048] • Teal *Anas crecca* [A052] • Pintail [A054] • Shoveler *Anas clypeata* [A056] • Oystercatcher [A130] • Golden plover [A140] • Grey plover [A141] • Knot [A143] • Sanderling *Calidris alba* [A144] • Dunlin [A149] • Black-tailed godwit [A156] • Bar-tailed godwit [A157] • Curlew *Numenius arquata* [A160] • Redshank [A162] • Turnstone *Arenaria interpres* [A169]	6.1 km south-east

Site name [site code]	QI/SCI	Location in relation to the Proposed Order
	• Black-headed gull [A179] *Wetland habitats supporting waterbirds:* Wetland and waterbirds [A999]	
North Dublin Bay SAC [000206]	• Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows [1330] • Mediterranean salt meadows [1410] • Embryonic shifting dunes [2210] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] • Fixed dunes with herbaceous vegetation (grey dunes) [2130] • Humid dune slacks [2190] • Petalwort *Petalophyllum ralfsii* [1390]	6.1 km south-east
North-west Irish Sea SPA [004236]	*Non-breeding waterbirds:* • Red-throated diver *Gavia stellata* [A001] • Great northern diver *Gavia immer* [A003] • Fulmar *Fulmarus glacialis* [A009] • Common scoter *Melanitta nigra* [A065] • Black-headed gull *Chroicocephalus ridibundus* [A179] • Common gull *Larus canus* [A182] • Herring gull *Larus argentatus* [A184] • Great black-backed gull *Larus marinus* [A187] • Kittiwake *Rissa tridactyla* [A188] • Guillemot *Uria aalge* [A199] • Razorbill *Alca torda* [A200] • Little gull *Larus minutus* [A177] *Breeding waterbirds:* • Fulmar [A009] • Manx shearwater *Puffinus puffinus* [A013] • Shag *Phalacrocorax aristotelis* [A018] • Cormorant *Phalacrocorax carbo* [A017] • Lesser black-backed gull *Larus fuscus* [A183] • Herring gull [A184] • Kittiwake [A188] • Roseate tern [A192] • Common tern [A193] • Arctic tern [A194] • Little tern *Sterna albifrons* [A195] • Guillemot [A199] • Razorbill [A200] • Puffin *Fratercula arctica* [A204]	6.8 km east
Rogerstown Estuary SAC [000208]	• Estuaries [1130] • Tidal mudflats and sandflats [1140] • Salicornia and other annuals colonising mud and sand mud [1310] • Atlantic salt meadows [1330] • Mediterranean salt meadows [1410] • Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] • Fixed dunes with herbaceous vegetation (grey dunes) [2130]	7.8km north

Site name [site code]	QI/SCI	Location in relation to the Proposed Order
	Three rare plants are also known to be present: hairy violet *Viola hirta*, meadow barley *Hardeum secalinum* and green-winged orchid *Orchis morio*.	
Rogerstown Estuary SPA [004015]	*Non-breeding waterbirds:* • Greylag goose *Anser anser* [A043] • Light-bellied brent goose [A046] • Shelduck [A048] • Shoveler [A056] • Oystercatcher [A130] • Ringed plover [A137] • Grey plover [A141] • Knot [A143] • Dunlin [A149] • Black-tailed godwit [A156] • Redshank [A162] *Wetland habitats supporting waterbirds:* • Wetland and waterbirds [A999]	8.0 km north
South Dublin Bay SAC [000210]	• Tidal mudflats and sandflats [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Embryonic shifting dunes [2210]	8.7km south-east
Rockabill to Dalkey Island SAC [003000]	• Reefs [1170] • Harbour porpoise *Phocoena phocoena* [1351]	10.0km east
Howth Head SAC [000202]	• Vegetated sea cliffs [1230] • Dry heath [4020]	10.1km east
Ireland's Eye SPA [004117]	*Breeding waterbirds:* • Cormorant [A017] • Herring gull [A184] • Kittiwake [A188] • Guillemot [A199] • Razorbill [A200]	10.1 km east
Ireland's Eye SAC [002193]	• Perennial vegetation of stony banks [1220] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	10.3 km east
Howth Head Coast SPA [004113]	*Breeding waterbirds:* • Kittiwake [A188]	11.5 km east
Lambay Island SPA [004069]	*Non-breeding waterbirds:* • Greylag goose [A043] • Herring gull [A184] *Breeding waterbirds:* • Fulmar [A009] • Cormorant [A017] • Shag [A018] • Lesser black-backed gull [A183] • Herring gull [A184] • Kittiwake [A188] • Guillemot [A199] • Razorbill [A200] • Puffin [A204]	14.6 km north-east
Lambay Island SAC [000204]	• Reefs [1170] • Vegetated sea cliffs of the Atlantic and Baltic Coasts [1230] The site also supports a breeding colony of grey seal *Halichoerus grypus*, as well as harbour seals *Phoca vitulina*.	14.6km north-east

Site name [site code]	QI/SCI	Location in relation to the Proposed Order
Rye Water Valley/Carton SAC [001398]	• Petrifying springs with tufa formation [7220] • Narrow-mouthed whorl snail *Vertigo angustior* [1014] • Desmoulin's whorl snail *Vertigo moulinsiana* [1016]	15.0km west
Dalkey Islands SPA [004172]	*Breeding and passage (post-breeding/pre-migration roosting) waterbirds:* • Roseate tern [A192] • Common tern [A193] • Arctic tern [A194]	17.5 km south-east

6 Test of Likely Significant Effects (AA Screening)

6.1 Overview

6.1.1 This section assesses whether the Proposed Order, either alone or in combination with other plans or projects, is likely to have a significant effect on a European site in view of the site's conservation objectives. The assessment is undertaken in respect of the potential impact pathways identified in Section 4 and the European sites identified in Section 5.

6.1.2 In accordance with Article 6(3) of the Habitats Directive and relevant case law, a likely significant effect can only be excluded where, on the basis of objective information and in view of best scientific knowledge, there is no reasonable scientific doubt as to the absence of such effects. An effect is considered significant where it could undermine the conservation objectives of the European site. While the Precautionary Principle applies to this assessment, the identification of a likely significant effect requires a credible and real, rather than merely hypothetical, risk, consistent with the approach in Boggis and Easton Bavents Conservation v Natural England [2009] EWCA Civ 1061.

6.1.3 Consistent with *Massey v An Coimisiún Pleanála* (Case C-356/25), the assessment has had regard to the ecological characteristics of each European site within the potential ZOI of the Proposed Order, its QIs/SCIs and the Site-Specific Conservation Objectives (SSCOs) published by NPWS, together with the supporting documentation available for each site. In accordance with the principles established in Holohan and Others v An Bord Pleanála (Case C-461/17), consideration has also been given, where relevant, to effects on habitats and species outside European site boundaries where these are necessary to the conservation of QIs/SCIs or contribute to the achievement of the site's conservation objectives.

6.1.4 In accordance with the applicable case law, measures specifically intended to avoid or reduce effects on a European site have not been taken into account when determining whether likely significant effects can be excluded at the AA Screening stage. Features that form part of the existing or future receiving environment and are not incorporated specifically for the purpose of avoiding effects on a European site have been treated as part of the factual circumstances against which the Proposed Order is assessed.

6.2 Impacts Screened Out of the Assessment

6.2.1 As set out in Section 4, a number of potential impact pathways have been excluded from further assessment because no source-pathway-receptor linkage exists by which the Proposed Order could give rise to likely significant effects on a European site. These are:

- loss of or damage to habitat within the boundary of a European site;
- loss of or damage to functionally linked habitat;
- waterborne pollution;
- changes to surface water hydrology;
- changes to groundwater conditions;
- prevention of the migratory or routine movements of QI/SCI species; and
- spread of invasive non-native species.

6.2.2 The basis for excluding each of these impact pathways is set out in Section 4 and is not repeated here. The remaining potential impact pathways — disturbance or displacement of QI/SCI species, airborne pollution, and injury or mortality of SCI species through bird strike — are taken forward to the assessment of likely significant effects below.

6.3 European Sites and Impact Pathways Taken Forward to AA Screening

6.3.1 The potential for the impact pathways identified in Section 6.2 to give rise to likely significant effects on European sites is considered below. Table 6-1 identifies the European sites for which a potential source-pathway-receptor linkage exists in relation to disturbance or displacement, airborne pollution and/or injury or mortality through bird strike

6.3.2 The identification of relevant European sites has been informed by the pathway-specific ZoIs established in Section 4 and the information on European sites presented in Section 5. Information relevant to the assessment, including the QIs/SCIs and Site-Specific Conservation Objectives (SSCOs) for each European site, has been obtained from NPWS and is summarised in Appendix C.

Table 6-1: European Sites within ZoI of Potential Impacts from the Proposed Order

Impact source	Pathway(s) to European site(s)	European sites within the Zone of Influence
Disturbance or displacement of QI/SCI species	Increased aircraft activity, aircraft noise and visual disturbance, together with increased surface access and other airport operational activities, could potentially disturb SCI bird species using European sites or functionally linked habitat. In accordance with the approach set out in Section 4, an initial precautionary ZoI of 20 km from Dublin Airport has been applied to the consideration of disturbance of SCI bird species. The potential for disturbance of marine mammals from aircraft overflight has also been considered. The literature review presented in Appendix C indicates that aircraft flying above approximately 500 m are unlikely to cause disturbance to marine mammals. No SAC designated for marine mammals is overflown by aircraft using Dublin Airport at approximately 500 m or less.	• Malahide Estuary SPA • Baldoyle Bay SPA • South Dublin Bay and River Tolka Estuary SPA • North Bull Island SPA • North-west Irish Sea SPA • Rogerstown Estuary SPA • Ireland's Eye SPA • Howth Head Coast SPA • Lambay Island SPA • Dalkey Islands SPA
Airborne pollution	Increased aircraft activity and airport-related road traffic associated with the Proposed Order have the potential to result in changes in airborne pollutant concentrations and nitrogen deposition affecting sensitive QIs/SCIs or supporting habitats. For aircraft emissions, a precautionary ZoI has been defined by reference to areas beneath flight paths where aircraft operate below 1,000 m, as described in Section 4. The European sites identified beneath these flight paths are Baldoyle Bay SAC, Baldoyle Bay SPA, Ireland's Eye SAC, Ireland's Eye SPA, North-west Irish Sea SPA and Rockabill to Dalkey Island SAC. Rogerstown Estuary SAC, South Dublin Bay SAC, Lambay Island SAC and Rye Water Valley/Carton SAC are excluded from the ZoI of potential impacts from air pollution on the basis that they lie outside the flight paths where aircraft are flying below 1000m. For road traffic emissions, European sites containing sensitive ecological receptors within 200 m of the Affected Road Network have been considered. Malahide Estuary SAC and Malahide Estuary SPA are located adjacent to the M1, which forms part of the Affected Road Network. In addition, North Dublin Bay SAC, North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA have been retained within the potential ZoI on a precautionary basis for the purposes of the AA Screening assessment, having regard to their location relative to the aircraft flight paths and Affected Road Network.	• Baldoyle Bay SAC • Baldoyle Bay SPA • Ireland's Eye SAC • Ireland's Eye SPA • North-west Irish Sea SPA • Rockabill to Dalkey Island SAC • Howth Head SAC • Malahide Estuary SAC • Malahide Estuary SPA • North Dublin Bay SAC • North Bull Island SPA • South Dublin Bay and River Tolka Estuary SPA
Injury or mortality of SCI species	SCI bird species associated with European sites may use functionally linked habitat within or in the vicinity of Dublin Airport and may therefore be exposed to the risk of collision with aircraft. Increased aircraft movements associated with the 2029 Proposed Operation could potentially alter the risk of bird strike. In accordance with the approach set out in Section 4, an initial precautionary ZoI of 20 km from the Dublin Airport Site has been applied when identifying SPAs whose SCI bird species could potentially occur within functionally linked habitat in the vicinity of Dublin Airport.	• Malahide Estuary SPA • Baldoyle Bay SPA • South Dublin Bay and River Tolka Estuary SPA • North Bull Island SPA • North-west Irish Sea SPA • Rogerstown Estuary SPA • Ireland's Eye SPA • Howth Head Coast SPA • Lambay Island SPA • Dalkey Islands SPA

6.4 Screening (Likely Significant Effects (LSE) Assessment) of European Sites within the ZoI

6.4.1 The European sites identified in Section 6.3 are assessed below to determine whether the Proposed Order, either alone or in combination with other plans or projects, is likely to have a significant effect on those sites in view of their SSCOs. The assessment is undertaken separately for disturbance or displacement, airborne pollution, and injury or mortality through bird strike.

6.4.2 Information relevant to the assessment, including the QIs/SCIs, SSCOs and known pressures and threats for each European site, has been obtained from NPWS and is summarised in Appendix E. The identification of a European site within a precautionary ZoI does not itself indicate that a likely significant effect would occur; the assessment below considers whether such effects can be excluded on the basis of objective information.

Table 6-2: Screening assessment for disturbance/displacement of QI/SCI species

European site	Discussion of potential effects	Likely significant effects?
Malahide Estuary SPA	All of these sites may be overflown by, or close to the flightpaths of, aircraft landing and and/or departing from Dublin Airport. SCI species occurring within them could potentially be subject to noise and/or visual disturbance arising from the Proposed Order. On that basis, likely significant effects cannot be excluded at this stage.	**Yes**
Baldoyle Bay SPA		
South Dublin Bay and River Tolka Estuary SPA		
North Bull Island SPA		
North-west Irish Sea SPA		
Rogerstown Estuary SPA		
Ireland's Eye SPA		
Howth Head Coast SPA		
Lambay Island SPA		
Dalkey Islands SPA		

Table 6-3: Screening assessment for airborne pollution

European site	Discussion of potential effects	Likely significant effects cannot be excluded?
Baldoyle Bay SAC	Baldoyle Bay SAC is designated for coastal habitats including mudflats and saltmarsh. On a precautionary basis, the potential for airborne pollution to affect the QI habitats of the SAC cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
Baldoyle Bay SPA	Baldoyle Bay SPA is designated for SCI birds and wetland habitat that support SCI bird species. On a precautionary basis, the potential for airborne pollution to affect the QI habitats of the SPA cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
Ireland's Eye SAC	Ireland's Eye SAC is designated for perennial vegetation of stony banks and vegetated sea cliffs of the Atlantic and Baltic coasts. On a precautionary basis, the potential for airborne pollution to affect the QI habitats of the SAC cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
Ireland's Eye SPA	Ireland's Eye SPA is designated for SCI waterbird species and comprises habitats such as stony banks and vegetated sea cliffs that could support SCI species. On a precautionary basis, the potential for airborne pollution to affect the QI habitats of the SAC cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
North-west Irish Sea SPA	North-west Irish Sea SPA is designated for SCI waterbird species and comprises predominantly marine habitat. Based on CIEEM (2021) air quality advisory guidance, marine and intertidal systems subject to regular tidal flushing are of limited sensitivity to atmospheric nitrogen deposition because deposited nitrogen is dispersed and does not accumulate in the same manner as in terrestrial habitats, with marine and fluvial sources representing the predominant nitrogen inputs. On this basis, likely significant effects from airborne pollution can be excluded.	No
Rockabill to Dalkey Island SAC	Rockabill to Dalkey Island SAC is designated for reefs and harbour porpoise and is located in the marine environment. Based on CIEEM (2021) air quality advisory guidance, marine systems subject to regular tidal flushing are of limited sensitivity to atmospheric nitrogen deposition because deposited nitrogen is dispersed and does not accumulate in the same manner as in terrestrial habitats, with marine and fluvial sources representing the predominant nitrogen inputs. The QIs of the SAC are therefore not considered sensitive to the predicted pathway of airborne pollution. Likely significant effects can be excluded.	No
Malahide Estuary SPA	Wetland habitat is an SCI of Malahide Estuary SPA, and habitats within the site support the SCI species. As for the SAC, Malahide Estuary SPA is located immediately adjacent to the M1, which is identified as an ARN of the Proposed Order. On a precautionary basis, the potential for airborne pollution to affect the QI habitats of the SPA cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
Malahide Estuary SAC	Malahide Estuary SAC is designated for a number of coastal habitats. The site is located immediately adjacent to the M1, which is identified as an ARN of the Proposed Order. On a precautionary basis, the potential for airborne pollution to affect the QI habitats of the SAC cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
North Dublin Bay SAC	North Dublin Bay SAC is designated for coastal habitats including mudflats and saltmarsh. On a precautionary basis, the potential for airborne pollution to affect the QI habitats of the SAC cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
North Bull Island SPA	North Bull Island SPA is designated for SCI birds and wetland habitat that support SCI bird species. On a precautionary basis, the potential for airborne pollution to affect the QI habitats of the SPA cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
South Dublin Bay and River Tolka Estuary SPA	South Dublin Bay and River Tolka Estuary SPA is designated for SCI birds and wetland habitat that support SCI bird species. On a precautionary basis, the potential for airborne pollution to affect the QI habitats of the SPA cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**

Table 6-4:Screening assessment for injury or mortality of SCI species due to bird strike

European site	Discussion of potential effects	Likely significant effects cannot be excluded?
Malahide Estuary SPA	There is potentially suitable habitat in the vicinity of Dublin Airport which could be functionally-linked to Malahide Estuary SPA for the following species: light-bellied brent goose, shelduck, oystercatcher, golden plover, dunlin, black-tailed godwit, and redshank. On a precautionary basis, likely significant effects as a result of bird strike cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
Baldoyle Bay SPA	There is potentially suitable habitat in the vicinity of Dublin Airport which could be functionally-linked to Baldoyle Bay SPA for the following species: light-bellied brent goose, shelduck and golden plover. On a precautionary basis, likely significant effects as a result of bird strike cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
South Dublin Bay and River Tolka Estuary SPA	There is potentially suitable habitat in the vicinity of Dublin Airport which could be functionally-linked to South Dublin Bay and River Tolka Estuary SPA for the following species: light-bellied brent goose, oystercatcher, dunlin, redshank and black-headed gull. On a precautionary basis, likely significant effects as a result of bird strike cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
North Bull Island SPA	There is potentially suitable habitat in the vicinity of Dublin Airport which could be functionally-linked to North Bull Island SPA for the following species: light-bellied brent goose, shelduck, oystercatcher, golden plover, dunlin, black-tailed godwit, curlew, redshank, and black-headed gull. On a precautionary basis, likely significant effects as a result of bird strike cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
North-west Irish Sea SPA	There is potentially suitable habitat in the vicinity of Dublin Airport which could be functionally-linked to North-west Irish Sea SPA for the following species: black-headed gull, common gull, herring gull, great black-backed gull, and little gull. On a precautionary basis, likely significant effects as a result of bird strike cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
Rogerstown Estuary SPA	There is potentially suitable habitat in the vicinity of Dublin Airport which could be functionally-linked to Rogerstown Estuary SPA for the following species: greylag goose, light-bellied brent goose, shelduck, oystercatcher, dunlin, black-tailed godwit, and redshank. On a precautionary basis, likely significant effects as a result of bird strike cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
Ireland's Eye SPA	There is potentially suitable habitat for foraging by SCI herring gull at Dublin Airport. On a precautionary basis, likely significant effects as a result of bird strike cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
Howth Head Coast SPA	There is no potential for the SCI species of this site to occur in the vicinity of Dublin Airport, given they are marine specialists and thus no possibility of bird strike occurring. Likely significant effects can be excluded.	No
Lambay Island SPA	There is potentially suitable habitat in the vicinity of Dublin Airport which could be functionally-linked to Lambay Island SPA for the following species: greylag goose, herring gull and lesser black-backed gull. On a precautionary basis, likely significant effects as a result of bird strike cannot be excluded at the AA Screening stage. This pathway is therefore taken forward for further assessment in the NIS.	**Yes**
Dalkey Islands SPA	As described in Table 6-1, there is no potential for the SCI species of this site to occur in the vicinity of Dublin Airport, as the terns are marine specialists and forage over the sea, thus no possibility of bird strike occurring. Likely significant effects can be excluded.	No

6.5 In-combination Assessment

6.5.1 Article 6(3) of the Habitats Directive requires consideration of whether the Proposed Order, either alone or in combination with other plans or projects, is likely to have a significant effect on a European site. For the purposes of this Report to Inform AA Screening and NIS, the term 'in-combination effects' is used in accordance with Article 6(3).

6.5.2 In-combination effects may arise where effects associated with the Proposed Order interact with effects arising from other plans or projects such that, collectively, they could result in a likely significant effect on a European site, notwithstanding that the effects of an individual plan or project may not be significant in isolation.

6.5.3 In accordance with OPR guidance (OPR, 2021), the in-combination assessment has considered:

- completed projects;
- projects that are approved but not completed;
- proposed projects for which an application for approval or consent has been made, including refusals subject to appeal and not yet determined;
- proposals contained in adopted plans; and
- proposals contained in finalised draft plans formally published or submitted for consultation or adoption.

6.5.4 Projects or plans that have not reached a stage at which they are sufficiently defined do not generally require consideration, except where they are functionally interdependent with the Proposed Order.

Plans and Programmes

6.5.5 Relevant plans and programmes reviewed for the purposes of the in-combination assessment include:

- National Planning Framework: Ireland 2040;
- Eastern and Midland Regional Spatial and Economic Strategy;
- Greater Dublin Area Transport Strategy;
- Fingal Development Plan 2023–2029; and
- Dublin Airport Local Area Plan 2020.

6.5.6 The review identified a number of relevant proposals and schemes with the potential to contribute to the impact pathways considered in this assessment. These include transport schemes identified in the Greater Dublin Area Transport Strategy, including MetroLink, DART+, Luas Cross City, the Phoenix Park Tunnel Rail Line, M7 improvements and other key rail schemes. These schemes are of particular relevance to the assessment of potential in-combination effects associated with airborne pollution arising from changes in road traffic.

6.5.7 The Greater Dublin Drainage Project has also been considered. While this comprises a major infrastructure project in proximity to Dublin Airport, the Proposed Order does not involve construction or physical works and does not give rise to pathways associated with habitat loss, waterborne pollution or changes in hydrology. Potential effects associated with these pathways from the Greater Dublin Drainage Project therefore cannot act in combination with the Proposed Order. The potential for effects associated with disturbance/displacement or airborne pollution to act in combination with the Proposed Order has also been considered as part of the assessment.

6.5.8 The potential for these plans, programmes and schemes to act in combination with the Proposed Order has been considered having regard to their nature, location and status, the European sites and QIs/SCIs potentially affected, and whether their effects could interact with the impact pathways arising from the Proposed Order. The principal potential for in-combination effects arises in relation to airborne pollution, where emissions associated with other plans and projects could contribute to changes in pollutant concentrations or nitrogen deposition affecting the same European sites or QIs/SCIs as the Proposed Order. Where a plan or project is at an early stage and its design or environmental effects are not sufficiently defined to enable detailed assessment, this uncertainty has been taken into account.

Planning Applications

6.5.9 Planning applications with the potential to act in combination with the Proposed Order have also been reviewed. The applications considered, together with their planning status at the time of the search in July 2026, are presented in Appendix F.

Assessment of In-combination Effects

6.5.10 As set out in Section 4, no source-pathway-receptor linkage has been identified by which the Proposed Order could affect a European site through:

- loss of or damage to habitat within a European site;
- loss of or damage to functionally linked habitat;
- waterborne pollution;
- changes to surface water hydrology;
- changes to groundwater conditions;
- prevention of migratory or routine movements of QI/SCI species; or
- spread of invasive non-native species.

6.5.11 As the Proposed Order would make no contribution to an effect through these pathways, there is no potential for an in-combination effect involving the Proposed Order in respect of these pathways.

6.5.12 Potential source-pathway-receptor linkages have, however, been identified in relation to disturbance or displacement of QI/SCI species, airborne pollution and injury or mortality of SCI species through bird strike. The potential for effects associated with the Proposed Order to act in combination with effects arising from the plans and projects identified above and in Appendix F has therefore been considered in respect of these pathways.

6.5.13 At the AA Screening stage, and applying the Precautionary Principle, the potential for likely significant effects arising from the Proposed Order in combination with other plans or projects cannot be excluded in relation to disturbance or displacement, airborne pollution and injury or mortality through bird strike. These pathways are therefore taken forward for further assessment in the NIS.

6.6 Conclusion of Screening for Appropriate Assessment

6.6.1 The AA Screening has considered whether the Proposed Order, either alone or in combination with other plans or projects, is likely to have a significant effect on a European site in view of the site's SSCOs. The assessment has been undertaken on the basis of objective information and applying the Precautionary Principle.

6.6.2 The AA Screening has identified a number of potential impact pathways for which no source-pathway-receptor linkage exists and through which likely significant effects can therefore be excluded. As set out in Sections 4 and 6.2, these comprise loss of or damage to habitat within a European site, loss of or damage to functionally linked habitat, waterborne pollution, changes to surface water hydrology, changes to groundwater conditions, prevention of migratory or routine movements of QI/SCI species, and the spread of invasive non-native species.

6.6.3 However, likely significant effects cannot be excluded at the AA Screening stage in relation to one or more of the following potential impact pathways:

- disturbance or displacement of QI/SCI species;
- airborne pollution, including that associated with aircraft and road traffic emissions; and
- injury or mortality of SCI species through bird strike.

6.6.4 Likely significant effects arising through one or more of these pathways cannot be excluded at the AA Screening stage for the following 15 European sites:

- Baldoyle Bay SAC;
- Baldoyle Bay SPA;

- Howth Head Coast SPA;
- Howth Head SAC;
- Ireland's Eye SAC;
- Ireland's Eye SPA;
- Lambay Island SPA;
- Malahide Estuary SAC;
- Malahide Estuary SPA;
- North Dublin Bay SAC;
- North Bull Island SPA;
- North-west Irish Sea SPA;
- Rogerstown Estuary SPA;
- South Dublin Bay and River Tolka Estuary SPA; and
- Dalkey Islands SPA.

6.6.5 The identification of a likely significant effect at the AA Screening stage does not represent a conclusion that the Proposed Order would result in a significant effect on a European site, or that it would adversely affect the integrity of that site. Rather, it identifies those European sites and impact pathways for which likely significant effects cannot be excluded on the basis of the Stage 1 screening assessment and which therefore require further assessment.

6.6.6 Accordingly, the assessment proceeds to Stage 2 Appropriate Assessment. Section 7 presents the NIS and provides the information necessary to enable ACP to determine whether the Proposed Order, either alone or in combination with other plans or projects, would adversely affect the integrity of any European site in view of its SSCOs.

7 Natura Impact Statement

7.1 Overview

7.1.1 The AA Screening presented in Section 6 concluded that likely significant effects could not be excluded for a number of European sites as a result of the Proposed Order, either alone or in combination with other plans or projects. Accordingly, those European sites and impact pathways have been taken forward to Stage 2 Appropriate Assessment.

7.1.2 This section presents the Natura Impact Statement (NIS) and provides the information necessary to enable ACP to undertake the Appropriate Assessment. The purpose of the assessment at this stage is to determine whether the Proposed Order, either alone or in combination with other plans or projects, would adversely affect the integrity of any European site in view of its SSCOs.

7.1.3 The assessment considers the potential effects on the QIs/SCIs of the relevant European sites and the ecological structure and function necessary for their SSCOs. It is informed by the desk study and field survey information described in Section 5, the literature review presented in Appendix C where relevant, and the technical assessments undertaken in relation to the Proposed Order.

7.1.4 Table 7-1 summarises the outcome of the AA Screening and identifies, for each European site, the impact pathways requiring further assessment in the NIS. Pertinent information relating to each screened-in impact pathway is presented first, followed by an assessment of the relevant European sites in view of their SSCOs.

7.1.5 Where mitigation measures are necessary to avoid or reduce an adverse effect on the integrity of a European site, those measures are identified and taken into account at this Stage 2 assessment. Measures or operational practices that form part of the existing or future receiving environment and are not implemented for the purpose of avoiding or reducing effects on a European site are distinguished from mitigation for the purposes of the Appropriate Assessment.

Table 7-1: Impact pathways taken forward to Appropriate Assessment for each European site

European site	Impact pathways for which likely significant effects could not be excluded at AA Screening		
	Disturbance/displacement of SCI species	Airborne pollution	Injury or mortality of SCI species
Malahide Estuary SPA	✓	✓	✓
Malahide Estuary SAC	X	✓	X
Baldoyle Bay SPA	✓	✓	✓
Baldoyle Bay SAC	X	✓	X
North Dublin Bay SAC	X	✓	X
South Dublin Bay and River Tolka Estuary SPA	✓	✓	✓
North Bull Island SPA	✓	✓	✓
North-west Irish Sea SPA	✓	X	✓
Rogerstown Estuary SPA	✓	X	✓
Ireland's Eye SAC	X	✓	X
Ireland's Eye SPA	✓	✓	✓
Howth Head Coast SPA	✓	X	X
Howth Head SAC	X	✓	X
Lambay Island SPA	✓	X	✓
Dalkey Islands SPA	✓	X	X

X – likely significant effects from this impact pathway were excluded at the AA Screening stage; no further assessment is required in the NIS.
✓ – likely significant effects from this impact pathway could not be excluded at the AA Screening stage and the pathway is therefore taken forward for further assessment in the NIS.

7.2 Disturbance and displacement of SCI species

Noise disturbance

7.2.1 The AA Screening identified the potential for increased operational activity associated with the Proposed Order to result in disturbance or displacement of SCI bird species associated with the relevant SPAs. Potential sources of disturbance include aircraft activity, aircraft and ground noise, road traffic, visual activity and artificial lighting. These effects could occur within a European site or within functionally linked habitat used by SCI species outside the site boundary.

7.2.2 Disturbance may result in behavioural responses including increased vigilance, interruption of feeding or resting, temporary displacement or, at higher levels of disturbance, flight from otherwise suitable habitat. The ecological significance of such responses depends on factors including the nature, magnitude, frequency and duration of the disturbance; the sensitivity and behaviour of the species concerned; existing levels of activity and habituation; the availability of alternative habitat; and the importance of the affected habitat to the SCI population.

7.2.3 The assessment below considers noise, visual disturbance and artificial lighting before considering their potential effects in combination. It draws on the literature review presented in Appendix C, relevant field survey information and the noise assessments undertaken for the Proposed Order.

7.2.4 Birds differ in their sensitivity and behavioural response to noise, and there is no single noise threshold above which disturbance of all bird species will occur. The response to a noise event depends on factors including species, activity, previous exposure and habituation, the characteristics of the noise and the presence of associated visual stimuli. The available literature nevertheless provides a basis for identifying noise levels at which behavioural responses in waterbirds become increasingly likely.

7.2.5 Studies of waterbirds and seabirds indicate that relatively low or regular noise levels generally result in little or no behavioural response, whereas the likelihood and magnitude of a response increase with noise level and with sudden or irregular noise. Cutts *et al.* (2013) identifies noise below 55 dB at the receptor as generally unlikely to cause a response in waterbirds. Regular noise of 60–72 dB may result in moderate disturbance, while continuous noise above 72 dB or sudden noise above 60 dB may result in a higher level of disturbance. The response to regular noise may be reduced where birds are habituated to an existing source.

7.2.6 Studies specifically considering aircraft disturbance similarly demonstrate considerable variation in response according to aircraft type, altitude, noise level and the degree of habituation. Hoang (2013) and Komenda-Zehnder *et al.* (2003) identified little or no significant behavioural response to fixed-wing aircraft flying at approximately 300 m or greater above waterbirds, while other studies indicate that behavioural responses become more apparent at higher noise levels. The literature therefore indicates that both the level of noise experienced by birds and the altitude and visual presence of aircraft are relevant to the potential for disturbance.

7.2.7 Drawing on the available evidence regarding the response of waterbirds to noise, Cutts *et al.* (2013) identifies indicative noise levels associated with High, Moderate and Low disturbance effects. These are summarised in Table 7-2 and provide a framework for considering the potential ecological response of SCI bird species to changes in noise associated with the Proposed Order. The noise levels presented are those experienced at the bird (i.e. at the receptor), rather than at the noise source.

Table 7-2: Noise disturbance level effects on birds (adapted from Cutts *et al.* (2013))

Noise level effect	Definition
High	Noise disturbance is typified by regular responses to stimuli, with birds moving away from the works to areas which are less disturbed (within noise tolerances). Most birds will show a degree of response to noise stimuli. Birds that remain in the affected area may not forage efficiently and if there are additional pressures on the birds (e.g. cold weather) then this may impact upon the survival of individual birds or their ability to breed. For auditory disturbance to qualify as High level, it must constitute a sudden noise event of over 60dB (at the bird, not the source) or a more prolonged noise of over 72dB.

Noise level effect	Definition
Moderate	Moderate noise disturbance is typified as a High level noise which has occurred over long periods so that birds become habituated to it or lower level noise which causes some disturbance to birds. This encompasses occasional noise events above 55dB, regular noise 60-72dB, and long-term regular noise above 72dB, where birds have become habituated. There is cross-over in Moderate and High level noise thresholds, although the lower band can be assumed unless the species is particularly sensitive.
Low	Low level noise is classed as that which is unlikely to cause response in birds using a fronting intertidal area. As such, noises of less than 55dB at the bird are included in this category. These effects are likely to be masked by background inputs in all but the least disturbed area and thus would not disturb the birds close by. Noise between 55-72 dB in some highly disturbed areas (e.g. industrial or urban areas, and adjacent to roads) may feature a Low level of disturbance provided the noise level was regular as birds will often habituate to a constant noise level.

Noise modelling for the Proposed Order

7.2.8 The Proposed Order would not introduce a new source or type of operational noise at Dublin Airport. The potential for disturbance arises from the increase in existing operational activity associated with the 2029 Proposed Operation (40 mppa) compared with the 2029 Permitted Operation (32 mppa). Noise modelling undertaken for the Proposed Order has therefore been considered to determine whether this change could result in noise levels capable of causing ecologically meaningful disturbance or displacement of SCI bird species.

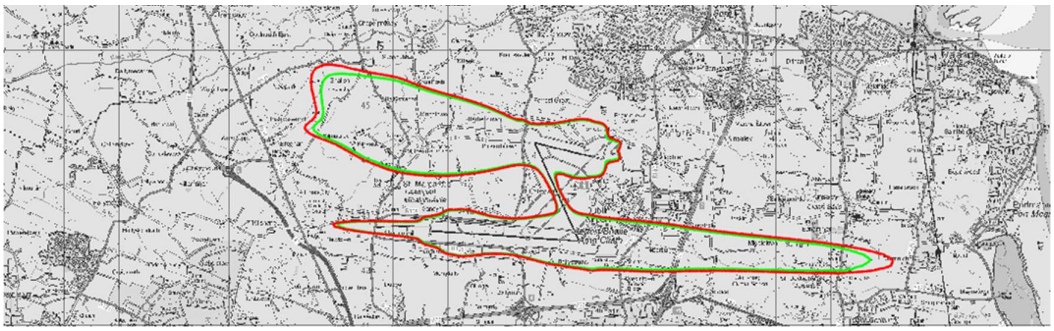
7.2.9 Changes in road traffic noise associated with the Proposed Order are predicted to be less than 1 dB throughout the assessment area. No areas have been identified where road traffic noise would increase by 1 dB or more under the 2029 Proposed Operation compared with the 2029 Permitted Operation. The change in road traffic noise would therefore not be expected to result in a perceptible change in the acoustic environment experienced by SCI bird species and would not result in ecologically meaningful disturbance or displacement.

7.2.10 Ground noise associated with aircraft and other airport operations has been assessed using Lden, representing the overall day-evening-night noise environment, and Lnight, representing the night-time noise environment. The assessment compares the noise exposure arising from the 2029 Proposed Operation with that arising from the 2029 Permitted Operation and therefore identifies the change attributable to the Proposed Order.

7.2.11 No significant effects are identified as a result of the predicted change in ground noise. The 55 dB ground-noise contour does not extend east beyond the airfield in the direction of the relevant European sites. Ground noise associated with the Proposed Order would therefore not result in ecologically meaningful disturbance or displacement of SCI bird species within a European site or associated functionally linked habitat.

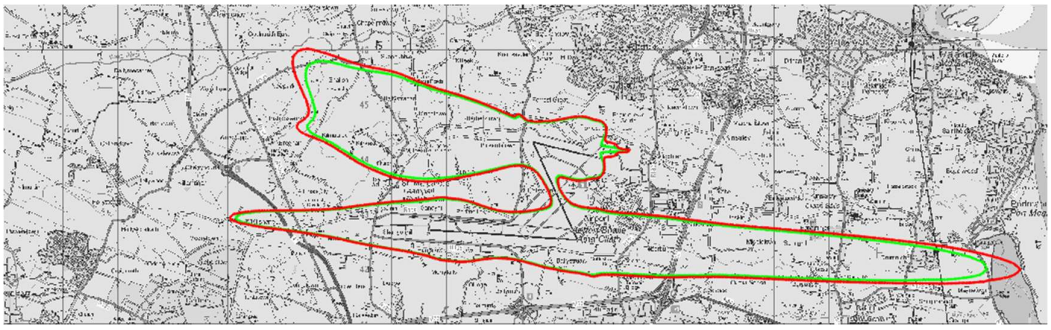
7.2.12 Aircraft noise contours have been produced for the 2029 Permitted Operation and 2029 Proposed Operation. The modelled contours for the 2029 Proposed Operation are larger than those for the 2029 Permitted Operation as a result of the increase in aircraft movements associated with the increase in passenger throughput from 32 mppa to 40 mppa. Plate 7-1 presents the 65 dB Lden contours for the two operational scenarios.

Plate 7-1 Proposed Operation 2029 (red) and Permitted Operation 2029 (green) 65dB L_{den} contour



7.2.13 Potential night-time effects have also been considered separately. Plate 7-2 presents the modelled 55 dB Lnight contours for the 2029 Permitted Operation and 2029 Proposed Operation. The 55 dB Lnight contour for the 2029 Proposed Operation is slightly larger than the corresponding contour for the 2029 Permitted Operation as a result of the increase in aircraft movements.

Plate 7-2 Proposed Operation 2029 (red) and Permitted Operation (green) 55 dB L_{night} contour



7.2.14 The 55 dB Lnight contour for the 2029 Proposed Operation extends over part of Malahide Estuary that is outside the equivalent contour for the 2029 Permitted Operation. As set out above, Cutts *et al.* (2013) identifies noise below 55 dB at the receptor as generally unlikely to result in a behavioural response in waterbirds, with the potential response at and above this level dependent on the characteristics of the noise, species sensitivity and the existing disturbance environment. The extension of the 55 dB contour does not therefore represent a threshold at which disturbance would necessarily occur. Within the part of Malahide Estuary newly encompassed by the 55 dB contour, the predicted change between the 2029 Permitted and Proposed Operations is approximately [0.5 dB]. The ecological significance of the change has therefore been assessed having regard to this incremental change, the existing aircraft noise environment and the available evidence concerning behavioural responses of waterbirds.

7.2.15 The predicted incremental change in aircraft noise is small in the context of the existing noise environment and does not represent the introduction of aircraft noise to an otherwise undisturbed area. Aircraft already regularly overfly and are audible within the estuary, and the Proposed Order would not materially alter the nature or location of this existing source of disturbance. Having regard to the magnitude of the predicted change, including during the night-time period, the existing operational noise environment and the evidence concerning behavioural responses of waterbirds described above, the change in noise associated with the Proposed Order is not expected to result in ecologically meaningful disturbance or displacement of SCI bird species.

Visual disturbance – presence of site personnel, plant, and aircraft

7.2.16 Visual disturbance can result in behavioural responses in birds including increased vigilance, interruption of feeding or resting, and temporary displacement or flight from otherwise suitable habitat. The magnitude of any response depends on factors including the nature and proximity of the visual stimulus, species sensitivity, existing levels of activity and habituation.

7.2.17 Cutts *et al.* (2013) identifies visual stimuli as potentially more important than noise in eliciting disturbance responses in waterbirds. The guidance indicates that many waterbird species may exhibit a flight response where approached to within approximately 100–150 m across open intertidal habitat. NatureScot guidance (Goodship and Furness, 2022) similarly identifies species-specific disturbance distances, with maximum distances for the SCI species relevant to this assessment ranging from approximately 100 m to 1,000 m. Red-throated diver, goldeneye and curlew are identified among the more sensitive species, with maximum reported disturbance distances of approximately 1,000 m, 800 m and 650 m respectively.

7.2.18 The Proposed Order would not introduce a new type of visual activity at Dublin Airport or extend airport operations into previously unaffected habitat. The potential change arises from an increase in the frequency of existing operational activities, principally aircraft movements, together with associated airside and landside activity. The potential for this increase to result in ecologically meaningful visual disturbance of SCI species has therefore been considered.

7.2.19 In relation to aircraft overflight, studies reviewed by Hoang (2013) and Komenda-Zehnder *et al.* (2003) indicate that disturbance of shorebirds and waterbirds by fixed-wing aircraft is generally associated with

aircraft operating at approximately 300 m altitude or lower. Komenda-Zehnder *et al.* (2003) also found that where behavioural responses occurred, birds returned to relaxed behaviour, including feeding, resting and preening, within approximately five minutes of overflight.

7.2.20 No SPA considered in this assessment is expected to be overflown by aircraft using Dublin Airport at an altitude of 300 m or less. Aircraft approaching Dublin Airport from the east are approximately 529 m above ground level on average at the coastline over Baldoyle Bay. Departing aircraft are predicted to climb rapidly above the altitude at which disturbance responses may occur, other than within a limited area immediately adjoining the runway.

7.2.21 This conclusion is supported by the results of vantage-point surveys undertaken at Baldoyle Bay SPA, Malahide Estuary SPA and Rogerstown Estuary SPA, all of which are located beneath flight paths used by aircraft arriving at or departing from Dublin Airport. No disturbance events involving waterbirds were recorded as a result of aircraft passing overhead during these surveys.

7.2.22 Increased activity by personnel and vehicles would occur within the existing operational airport environment and would not extend into the relevant European sites. Given the separation from the European sites and the existing level and character of activity at Dublin Airport, the incremental change in personnel and vehicle activity would not result in ecologically meaningful visual disturbance of SCI species.

7.2.23 The Proposed Order would increase the frequency of aircraft movements but would not materially alter aircraft flight paths or the altitude at which aircraft pass over the relevant SPAs. Having regard to the altitude of aircraft over the relevant sites, the available evidence concerning disturbance distances, the existing operational environment and the absence of observed waterbird disturbance during the vantage-point surveys, the increase in aircraft activity associated with the Proposed Order is not expected to result in ecologically meaningful visual disturbance or displacement of SCI bird species.

Visual disturbance – lighting

7.2.24 Artificial lighting has the potential to affect bird behaviour, including through attraction to or avoidance of illuminated areas and changes in feeding, resting or movement patterns. The nature and magnitude of any response varies according to species, habitat, the intensity and characteristics of the lighting and the existing lighting environment. The available literature identifies both beneficial and adverse behavioural responses to artificial lighting, indicating that effects are species- and context-specific.

7.2.25 The Proposed Order would not involve new physical infrastructure or extend airport operations into previously unlit areas. Any change in lighting associated with the 2029 Proposed Operation would arise from the increased use of existing airport infrastructure within the established operational and lighting environment at Dublin Airport.

7.2.26 The relevant European sites are physically separated from the Dublin Airport Site and the Proposed Order would not introduce new lighting within those sites. Habitat functionally linked with Dublin Airport is already subject to the existing airport lighting environment. Accordingly, the Proposed Order is not expected to result in a material change in the exposure of SCI bird species or supporting habitat to artificial illumination.

7.2.27 Having regard to the absence of new physical infrastructure or newly illuminated areas, the existing operational lighting environment and the separation between Dublin Airport and the relevant European sites, the Proposed Order is not expected to result in ecologically meaningful disturbance or displacement of SCI bird species as a result of lighting.

Combined noise and visual disturbance

7.2.28 The potential for noise and visual disturbance to act in combination has also been considered. Although these disturbance mechanisms are considered separately above, aircraft activity in particular may result in SCI birds being exposed simultaneously to both aircraft noise and the visual presence of aircraft. Lighting and other operational activity may also contribute to the overall disturbance environment.

7.2.29 The Proposed Order would increase the frequency of existing operational activity at Dublin Airport but would not introduce a new type of activity or materially alter the nature of the existing disturbance environment. As set out above, the predicted changes in road traffic and ground noise would not result in ecologically meaningful disturbance or displacement. Aircraft using Dublin Airport would continue to

follow the existing flight paths and would pass over the relevant SPAs at altitudes above those at which the literature indicates significant visual disturbance is generally expected. The Proposed Order would also not introduce new physical infrastructure or extend airport operations into previously unaffected areas.

7.2.30 The field survey evidence provides direct information on the response of waterbirds to the existing combination of aircraft noise and visual stimuli. Vantage-point surveys undertaken at Baldoyle Bay SPA, Malahide Estuary SPA and Rogerstown Estuary SPA recorded no disturbance events involving waterbirds as a result of aircraft passing overhead. This indicates that aircraft overflight under the existing operational conditions does not result in observable disturbance of waterbirds using these sites.

7.2.31 The Proposed Order would increase the number of aircraft movements and therefore the frequency with which birds may be exposed to aircraft noise and visual stimuli. However, it would not materially alter the character of those stimuli, aircraft flight paths or the altitude of aircraft over the relevant sites. Having regard to the magnitude and nature of the incremental change associated with the Proposed Order, the existing operational environment, the predicted noise environment, aircraft altitude and the field survey evidence, the combined effects of noise and visual disturbance are not expected to result in sustained or ecologically meaningful disturbance or displacement of SCI bird species.

7.2.32 Where individual birds do exhibit a temporary behavioural response to aircraft or other operational activity, the available evidence from the literature described in the paragraphs above indicate that such responses are generally short-lived. The assessment has not identified a mechanism by which the incremental change in disturbance associated with the Proposed Order would result in sustained displacement, material loss of feeding or resting opportunity, or a consequential effect on the population or distribution of an SCI species

7.3 Airborne pollution impacts

7.3.1 The AA Screening identified that likely significant effects associated with airborne pollution could not be excluded for a number of European sites. This section therefore considers whether changes in airborne pollutant concentrations and nitrogen deposition associated with the 2029 Proposed Operation (40 mppa), compared with the 2029 Permitted Operation (32 mppa), could adversely affect the integrity of those sites in view of their QIs/SCIs and SSCOs.

7.3.2 The pollutants of relevance to the assessment are oxides of nitrogen (NOx), ammonia (NH_3) and nitrogen deposition. NOx and NH_3 can directly affect vegetation at sufficiently high concentrations and can also contribute to atmospheric nitrogen deposition. Increased nitrogen deposition can alter nutrient conditions and, over time, affect the composition and species richness of sensitive habitats.

Critical Levels and Critical Loads

7.3.3 The assessment has been undertaken with reference to Critical Levels and Critical Loads published by the Air Pollution Information System (APIS) – the widely used database and tool used to provide detailed information on air pollutants and their impacts on habitats and species. A Critical Level[6] is a concentration of a pollutant in the atmosphere above which direct adverse effects on receptors, including plants and ecosystems, may occur according to present knowledge. A Critical Load[7]. is a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment are not expected to occur according to present knowledge.

7.3.4 The contribution attributable to the Proposed Order is considered in relation to the applicable Critical Level or Critical Load for the relevant QI habitat or supporting habitat. A contribution of less than 1% of the applicable Critical Level or Critical Load is generally regarded as sufficiently small to be screened out as an imperceptible contribution. Where the contribution exceeds 1%, this does not in itself indicate that an adverse ecological effect would occur. Rather, further consideration is required of the total pollutant concentration or deposition rate, including background conditions, the applicable Critical Level or Critical Load and the sensitivity of the affected habitat.

[6] Specifically, the Critical Level is defined by APIS as *"concentrations of pollutants in the atmosphere above which direct adverse effects on receptors, such as… plants* [and] *ecosystems, may occur according to present knowledge"*.
[7] The Critical Load is defined by APIS as *"a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on specified sensitive elements of the environment do not occur according to present knowledge"* (both definitions taken from https://www.apis.ac.uk/critical-loads-and-critical-levels-guide-data-provided-apis#_Toc279788050).

7.3.5 For NOx, APIS identifies an annual mean Critical Level of 30 µg/m³ for the protection of vegetation. NOx can have direct effects on vegetation at sufficiently high concentrations but is also relevant as a source of nitrogen deposition. An exceedance of 1% of the NOx Critical Level therefore indicates that the potential effect requires further consideration but does not, in itself, demonstrate an adverse effect on vegetation or on the integrity of a European site[8].

7.3.6 Critical Loads for nitrogen deposition are expressed as kilograms of nitrogen per hectare per year (kg N/ha/yr) and vary according to habitat type. Nitrogen deposition can act as a form of fertilisation and, where sufficiently elevated over time, can favour more competitive plant species and alter the composition and species richness of sensitive habitats. The applicable Critical Loads and background deposition rates for the relevant habitats have therefore been considered using APIS data.

7.3.7 NH_3 can contribute to nitrogen deposition and, at sufficiently high atmospheric concentrations, can also have direct effects on vegetation. APIS identifies Critical Levels of 1–3 µg/m³, with the lower value applicable to particularly sensitive vegetation, including habitats supporting significant lichen or bryophyte interest, and the higher value applicable to other vegetation. The appropriate Critical Level has therefore been selected having regard to the characteristics of the relevant QI habitat.

Air Quality Modelling

7.3.8 Air quality modelling has been undertaken to quantify the changes in NOx and NH_3 concentrations and nitrogen deposition associated with the Proposed Order at the relevant European sites. The modelling incorporates emissions associated with road traffic and aircraft, as applicable. The pollutant concentrations, deposition rates and percentages of the relevant Critical Levels and Critical Loads are presented in Appendix G.

7.3.9 The assessment below considers the contribution attributable to the Proposed Order together with the predicted total concentrations or deposition rates, including background conditions and other growth incorporated within the 2029 modelling. The results are considered in the context of the sensitivity of the relevant QI habitats or habitats supporting SCI species and whether the predicted changes could undermine the relevant SSCOs and thereby result in an adverse effect on site integrity.

Oxides of Nitrogen

7.3.10 The Proposed Order is predicted to contribute more than 1% of the Critical Level for NOx at parts of Malahide Estuary, comprising Malahide Estuary SAC and Malahide Estuary SPA. The maximum contribution attributable to the Proposed Order is predicted to be 3.03% of the Critical Level at Malahide Estuary.

7.3.11 Although these contributions exceed the 1% screening criterion, the total predicted NOx concentration, including background concentrations and other growth incorporated within the 2029 modelling, remains below the applicable annual mean Critical Level of 30 µg/m³. The maximum total concentration predicted by the modelling is 23.12 µg/m³. The Critical Level is therefore not predicted to be exceeded as a result of the 2029 Proposed Operation.

7.3.12 At the other European sites considered in the modelling, the contribution attributable to the Proposed Order is below 1% of the applicable NOx Critical Level. Having regard to the magnitude of the predicted contribution and the absence of an exceedance of the applicable Critical Level, the change in NOx concentrations associated with the Proposed Order is not expected to result in an ecologically meaningful effect on QI habitats or habitats supporting SCI species.

Ammonia

7.3.13 At no point on the modelled transects is the Proposed Order predicted to contribute more than 1% of the 3 µg/m³ Critical Level for NH_3 applicable to general vegetation. The maximum contribution attributable to the Proposed Order is predicted to be 0.28% of this Critical Level. Total NH_3 concentrations, including background concentrations and other growth incorporated within the 2029 modelling, are also predicted to remain below this Critical Level, with a maximum total concentration of 2.06 µg/m³.

[8] For example, APIS states that *"it is likely that the strongest effect of emissions of nitrogen oxides across the UK is through their contribution to total nitrogen deposition…"* (http://www.apis.ac.uk/overview/pollutants/overview_NOx.htm).

7.3.14 A lower NH_3 Critical Level of 1 µg/m³ is applicable to particularly sensitive habitats supporting significant lichen or bryophyte interest. The relevant QI habitats at Howth Head SAC and North Dublin Bay SAC have therefore been considered against this lower Critical Level. The modelling does not identify a contribution to NH_3 concentrations from the Proposed Order at these sites. Accordingly, the Proposed Order would not contribute to any existing exceedance of the lower Critical Level at these locations.

7.3.15 On this basis, changes in NH_3 concentrations associated with the Proposed Order are not expected to result in an ecologically meaningful effect on QI habitats or habitats supporting SCI species.

Nitrogen Deposition

7.3.16 The applicable Critical Load for nitrogen deposition varies according to the habitat concerned. At Malahide Estuary SAC, the sensitive habitats include saltmarsh and sand dune habitats. A lower Critical Load of 10 kg N/ha/yr has been applied to the more densely vegetated upper saltmarsh on a precautionary basis. Sand dune habitat has a lower minimum Critical Load of 5 kg N/ha/yr, although no sand dune habitat is present on the modelled transects at Malahide Estuary.

7.3.17 At Malahide Estuary, the maximum contribution of the Proposed Order to nitrogen deposition is predicted to be 0.89% of the applicable Critical Load. This falls just below the 1% screening criterion, and the total predicted nitrogen deposition rate, including background deposition and other growth incorporated within the 2029 modelling, remains below the applicable Critical Load. The maximum total deposition rate is predicted to be 7.95 kg N/ha/yr. The applicable Critical Load is therefore not predicted to be exceeded.

7.3.18 At the other modelled European sites, the contribution attributable to the Proposed Order to nitrogen deposition is very small, with maximum increases generally in the order of 0.00–0.01 kg N/ha/yr. At Baldoyle Bay SAC and Ireland's Eye SAC, the relevant Critical Load of 10 kg N/ha/yr is not predicted to be exceeded when background deposition and other growth incorporated within the 2029 modelling are taken into account.

7.3.19 North Dublin Bay SAC and Howth Head SAC include more nitrogen-sensitive habitats, including sand dune and heathland habitats for which a minimum Critical Load of 5 kg N/ha/yr is applicable. This is exceeded when total nitrogen deposition is taken into account. However, at these sites, the Proposed Order represents a maximum increase in nitrogen deposition of approximately 0.2% compared with the 2029 baseline, being 0.01 kg N/ha/yr.

7.3.20 This is relevant because, Caporn *et al.* (2016) considered the effects of small increments of atmospheric nitrogen deposition on semi-natural habitats. For lowland heathland and sand dune habitats, an additional nitrogen dose of 0.3 kg N/ha/yr, substantially greater than that predicted as a result of the Proposed Order at these sites, was associated with a change in species richness of approximately 2–3% at a background deposition rate of 5 kg N/ha/yr. The predicted contribution associated with the Proposed Order is substantially below this level.

Conclusion

7.3.21 The air quality modelling demonstrates that, although the contribution attributable to the Proposed Order exceeds the 1% screening criterion for NOx at Malahide Estuary, the applicable Critical Levels and Critical Loads are not predicted to be exceeded when background conditions and other growth incorporated within the 2029 modelling are taken into account. Contributions at the other relevant European sites are below the applicable screening criteria or are of a magnitude that would not result in an ecologically meaningful change.

7.3.22 Having regard to the predicted pollutant concentrations and deposition rates, the applicable Critical Levels and Critical Loads, background conditions and the sensitivity of the relevant habitats, the changes in airborne pollution associated with the Proposed Order are not expected to result in deterioration of QI habitats or supporting habitat, or changes capable of affecting the population or distribution of SCI species.

7.3.23 The site-specific assessments presented later in this section consider these findings in the context of the QIs/SCIs and SSCOs of each relevant European site and determine whether the Proposed Order could adversely affect site integrity.

7.4 Bird strike impacts

7.4.1 The AA Screening identified that likely significant effects associated with injury or mortality of SCI bird species as a result of bird strike could not be excluded for a number of European sites. This section therefore considers whether the increase in aircraft movements associated with the 2029 Proposed Operation (40 mppa), compared with the 2029 Permitted Operation (32 mppa), could result in a change in bird-strike risk capable of affecting SCI populations and, consequently, the integrity of the relevant European sites.

7.4.2 Bird strike occurs where a bird collides with an aircraft and may result in injury or mortality. For the purposes of the Appropriate Assessment, the relevant consideration is whether the incremental change in aircraft activity associated with the Proposed Order could result in additional mortality of SCI species at a level capable of affecting their population or distribution, or otherwise undermining the achievement of the relevant SSCOs.

7.4.3 Dublin Airport is an existing operational airport and bird-strike risk forms part of the existing operational environment. The Proposed Order would not introduce a new source or type of collision risk, alter the location of the airport or materially alter the established flight paths. The potential effect therefore arises from the increase in the frequency of aircraft movements under the 2029 Proposed Operation compared with the 2029 Permitted Operation.

Existing Bird-strike Records

7.4.4 Bird-strike incidents at Dublin Airport are recorded by daa. Bird-strike records provided for the purposes of this assessment, covering the latest periods analysed, 2007–2019 and 1990–2019 (Dublin Airport, 2025), have been reviewed to establish the frequency of recorded bird strikes involving species that are SCIs of European sites within the ZoI of the Proposed Order. These records are summarised in Table 7-3.

Table 7-3: Records of bird strikes involving SCI species at Dublin Airport

Species	Number of strikes recorded 2007-2019	Number of strikes recorded 1990-2019
Curlew	25	26
Black-headed gull	60	166
Golden plover	9	17
Herring gull	7	24
Lesser black-backed gull	7	26
Common gull	4	6
Ringed plover	1	N/A

7.4.5 Seven SCI species have therefore been recorded as being involved in bird strikes at Dublin Airport. With the exception of black-headed gull and curlew, the recorded strike rate for each of these SCI species averaged less than one bird per year over the period 2007–2019.

7.4.6 Black-headed gull had the highest recorded strike rate, with 60 strikes between 2007 and 2019, equivalent to an average of approximately 4.6 strikes per year. Black-headed gull is an SCI of North Bull Island SPA, North-west Irish Sea SPA and South Dublin Bay and River Tolka Estuary SPA. The populations quoted by NPWS for these sites are 508, 2,196 and 3,040 birds respectively. The recorded annual average strike rate is therefore less than 1% of the SCI population of each of these SPAs.

7.4.7 Curlew had the next highest recorded strike rate, with 25 strikes between 2007 and 2019, equivalent to an average of approximately 1.9 strikes per year. North Bull Island SPA is the only European site within the ZoI for which curlew is identified in the existing assessment as an SCI. The population quoted by NPWS is 937 birds. The recorded annual average strike rate is therefore substantially below 1% of the SPA population.

7.4.8 Golden plover, herring gull, lesser black-backed gull, common gull and ringed plover have each been recorded at rates averaging less than one strike per year over the period 2007–2019. The existing records therefore indicate a low incidence of bird strike involving these SCI species.

Wildlife Habitat Management

7.4.9 Bird-strike risk at Dublin Airport is managed through the Applicant's existing Wildlife Habitat Management Plan (WHMP). The WHMP forms part of the established operational and aviation-safety regime at Dublin Airport and is implemented for the purpose of managing wildlife hazards to aircraft and public safety. It is not implemented as mitigation for the purposes of avoiding adverse effects on European sites and would continue to operate irrespective of the Proposed Order.

7.4.10 The WHMP includes measures to reduce the attractiveness of the airfield to birds and other wildlife and procedures for monitoring and responding to wildlife hazards. These include habitat management, monitoring of bird activity and movements, active dispersal where required, and the recording and investigation of bird-strike events.

7.4.11 The Proposed Order would not require any change to the WHMP. Accordingly, the established management of wildlife hazards at Dublin Airport forms part of the operational environment against which the incremental change associated with the Proposed Order is assessed. The WHMP is not relied upon as mitigation introduced for the purposes of the Appropriate Assessment.

Potential Effect of the Proposed Order

7.4.12 The increase in aircraft movements associated with the Proposed Order would increase the number of occasions on which an aircraft and a bird could potentially interact. However, the relationship between aircraft movement numbers and bird-strike mortality is not necessarily linear. Strike risk is influenced by a range of factors including bird abundance and behaviour, species, season, weather, aircraft characteristics, flight altitude and the presence of birds within the area of greatest collision risk.

7.4.13 The Proposed Order would not materially alter the location or spatial extent of the area within which bird-strike risk currently occurs and would not introduce new habitat likely to attract SCI species towards the airfield. The potential effect is therefore limited to any incremental change in collision risk arising from the increased frequency of aircraft movements within an existing operational airport environment.

7.4.14 Baseline bird surveys undertaken in the vicinity of Dublin Airport recorded low numbers of SCI species in the area in which bird-strike risk is greatest. The survey evidence therefore does not indicate that significant numbers of SCI birds regularly use the airfield or its immediate surroundings. This is consistent with the historic bird-strike records, which show a low frequency of strikes involving SCI species.

Assessment of Population-level Effects

7.4.15 The ecological consequence of bird-strike mortality depends on its magnitude relative to the population of the SCI species concerned. An individual collision involving an SCI bird would not, in itself, indicate an adverse effect on the integrity of a European site. For such an effect to arise, the additional mortality attributable to the Proposed Order would need to be sufficient to affect the population or distribution of the SCI species, or otherwise undermine the achievement of the relevant SSCOs.

7.4.16 The historic strike records demonstrate that existing bird-strike mortality involving SCI species is low. Even for black-headed gull and curlew, which have the highest recorded strike rates amongst the SCI species, the annual average number of recorded strikes represents less than 1% of the relevant SPA populations. For all other recorded SCI species, fewer than one strike per year on average was recorded during 2007–2019.

7.4.17 The Proposed Order would increase aircraft movements compared with the 2029 Permitted Operation but would not change the nature or location of the existing collision-risk environment. Having regard to the low historic incidence of strikes involving SCI species, the low numbers of SCI birds recorded in the vicinity of the airfield and the continued operation of the established wildlife-hazard management regime, there is no evidence that the incremental increase in aircraft movements would result in additional mortality at a level capable of materially affecting an SCI population.

Conclusion

7.4.18 Having regard to the existing bird-strike record, the occurrence and abundance of SCI species in the vicinity of Dublin Airport, the nature and location of the existing collision-risk environment and the incremental change in aircraft movements associated with the Proposed Order, bird strike is not expected to result in mortality of SCI species at a level capable of affecting their population or distribution.

7.4.19 The assessment therefore does not identify an ecologically meaningful population-level effect on SCI species as a result of the change in bird-strike risk associated with the Proposed Order. The site-specific assessments presented later in this section consider this finding in the context of the relevant SCI species and SSCOs in determining whether the Proposed Order could adversely affect site integrity.

7.5 Individual site assessments

Malahide Estuary SPA

7.5.1 Malahide Estuary SPA is designated for a range of wintering waterbird SCIs and for its wetland and waterbirds assemblage. The SSCOs for the SPA seek to maintain or restore the favourable conservation condition of the SCI species, including through maintaining their population trend and distribution within the site, and to maintain the wetland habitat as a resource for the regularly occurring migratory waterbirds that utilise it.

7.5.2 The AA Screening identified the potential for likely significant effects on Malahide Estuary SPA associated with disturbance and displacement of SCI species, airborne pollution and bird strike. These pathways are assessed in Sections 7.2 to 7.4 and their implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.3 As set out in Section 7.2, the Proposed Order would increase the frequency of existing operational activity at Dublin Airport but would not introduce a new source or type of disturbance, materially alter aircraft flight paths or extend airport operations into previously unaffected areas. Changes in road traffic and ground noise are not expected to result in ecologically meaningful disturbance or displacement of SCI species.

7.5.4 Malahide Estuary has also been specifically considered in relation to aircraft noise, including during the night-time period. The modelled 55 dB Lnight contour for the 2029 Proposed Operation extends over part of the estuary. However, having regard to the magnitude of the predicted change compared with the 2029 Permitted Operation, the existing operational noise environment and the available evidence concerning behavioural responses of waterbirds, the assessment concludes that the change in aircraft noise is not expected to result in ecologically meaningful disturbance or displacement of SCI species.

7.5.5 The potential for visual disturbance has also been considered. Aircraft using Dublin Airport would pass over the SPA at altitudes above those at which the literature reviewed in Section 7.2 indicates significant visual disturbance of waterbirds is generally expected. Vantage-point surveys undertaken at Malahide Estuary SPA recorded no disturbance events involving waterbirds as a result of aircraft passing overhead.

7.5.6 Accordingly, the incremental change in noise and visual disturbance associated with the Proposed Order is not expected to result in sustained displacement, material loss of feeding or resting opportunity, or changes in the population or distribution of any SCI species within Malahide Estuary SPA. The Proposed Order would therefore not undermine the SSCO attributes relating to SCI population trend or distribution within the site.

Airborne Pollution

7.5.7 Malahide Estuary SPA is also within the area in which changes in airborne pollution associated with the Proposed Order have been assessed. As set out in Section 7.3, the maximum contribution attributable to the Proposed Order is predicted to be 3.03% of the applicable NOx Critical Level. However, the total predicted NOx concentration, including background concentrations and other growth incorporated within the 2029 modelling, remains below the applicable Critical Level.

7.5.8 The assessment of nitrogen deposition similarly identifies only a small incremental contribution associated with the Proposed Order, with the applicable Critical Load not predicted to be exceeded. The

assessment in Section 7.3 therefore concludes that changes in airborne pollution would not result in deterioration of habitats supporting SCI species or an ecologically meaningful change in their function.

7.5.9 Airborne pollution associated with the Proposed Order would therefore not result in deterioration or loss of wetland habitat supporting the SCI species of Malahide Estuary SPA and would not undermine the site's SSCOs.

Bird Strike

7.5.10 The potential for mortality of SCI species as a result of bird strike is assessed in Section 7.4. The historic bird-strike records indicate a low incidence of strikes involving SCI species, and the assessment does not identify a mechanism by which the incremental increase in aircraft movements associated with the Proposed Order would result in additional mortality at a level capable of materially affecting an SCI population.

7.5.11 Bird strike associated with the Proposed Order would therefore not result in a change in the population or distribution of any SCI species of Malahide Estuary SPA capable of undermining the relevant SSCOs.

Conclusion – Malahide Estuary SPA

7.5.12 Having regard to the findings of the assessments of disturbance and displacement, airborne pollution and bird strike, and considering those findings in view of the SCIs and SSCOs of Malahide Estuary SPA, the Proposed Order would not result in deterioration of supporting habitat, sustained disturbance or displacement, or mortality at a level capable of affecting the population or distribution of an SCI species.

7.5.13 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Malahide Estuary SPA.

Malahide Estuary SAC

7.5.14 Malahide Estuary SAC is designated for coastal and estuarine habitat QIs, including mudflats and sandflats, Salicornia and other annuals colonising mud and sand, Atlantic salt meadows, Mediterranean salt meadows and fixed coastal dunes. The SSCOs for the SAC seek to maintain or restore the favourable conservation condition of these QI habitats.

7.5.15 The AA Screening identified airborne pollution as a pathway requiring further assessment in relation to Malahide Estuary SAC. The potential effects of changes in NOx and NH_3 concentrations and nitrogen deposition associated with the Proposed Order are assessed in Section 7.3.

Airborne Pollution

7.5.16 The maximum contribution attributable to the Proposed Order to NOx concentrations at Malahide Estuary is predicted to be 3.03% of the applicable Critical Level. Although this exceeds the 1% screening criterion, the total predicted NOx concentration, including background concentrations and other growth incorporated within the 2029 modelling, is a maximum of 23.12 µg/m³ and therefore remains below the applicable annual mean Critical Level of 30 µg/m³.

7.5.17 The contribution of the Proposed Order to nitrogen deposition is 0.89 % of the applicable Critical Load and under the 1% screening criterion. The maximum total nitrogen deposition rate is predicted to be 7.94 kg N/ha/yr and therefore remains below the precautionary Critical Load of 10 kg N/ha/yr applied to the more densely vegetated upper saltmarsh habitat. No sand dune habitat, for which a lower Critical Load applies, occurs on the modelled transects.

7.5.18 As set out in Section 7.3, NH_3 concentrations associated with the Proposed Order are also below the applicable assessment criteria. The predicted changes in airborne pollution would therefore not result in deterioration in the extent, distribution, structure, function or characteristic species composition of the QI habitats of Malahide Estuary SAC.

Conclusion – Malahide Estuary SAC

7.5.19 Having regard to the magnitude of the predicted changes in airborne pollutant concentrations and nitrogen deposition, the applicable Critical Levels and Critical Loads, background conditions and the sensitivity of the QI habitats, the Proposed Order would not undermine the SSCOs for any QI of Malahide Estuary SAC.

7.5.20 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Malahide Estuary SAC.

Baldoyle Bay SPA

7.5.21 Baldoyle Bay SPA is designated for a range of wintering waterbird SCIs and for its wetland and waterbirds assemblage. The SSCOs for the SPA seek to maintain or restore the favourable conservation condition of the SCI species, including through maintaining their population trend and distribution within the site, and to maintain the wetland habitat as a resource for the regularly occurring migratory waterbirds that utilise it.

7.5.22 The AA Screening identified disturbance and displacement of SCI species, airborne pollution and bird strike as pathways for which likely significant effects on Baldoyle Bay SPA could not be excluded. These pathways are assessed in Sections 7.2 to 7.4 and their implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.23 As set out in Section 7.2, the Proposed Order would increase the frequency of existing operational activity at Dublin Airport but would not introduce a new source or type of disturbance, materially alter aircraft flight paths or extend airport operations into previously unaffected areas. Changes in road traffic and ground noise are not expected to result in ecologically meaningful disturbance or displacement of SCI species.

7.5.24 The potential for disturbance associated with aircraft overflight has also been specifically considered for Baldoyle Bay SPA. Aircraft approaching Dublin Airport from the west are approximately 529 m above ground level on average at the coastline over Baldoyle Bay, which is above the altitude at which the literature reviewed in Section 7.2 indicates significant visual disturbance of waterbirds is generally expected.

7.5.25 This conclusion is supported by the vantage-point surveys undertaken at Baldoyle Bay SPA. No disturbance events involving waterbirds were recorded as a result of aircraft passing overhead. The Proposed Order would increase the frequency of aircraft movements but would not materially alter the flight paths or altitude of aircraft over the SPA.

7.5.26 Accordingly, the incremental change in noise and visual disturbance associated with the Proposed Order is not expected to result in sustained displacement, material loss of feeding or resting opportunity, or changes in the population or distribution of any SCI species within Baldoyle Bay SPA. The Proposed Order would therefore not undermine the SSCO attributes relating to SCI population trend or distribution within the site.

Airborne Pollution

7.5.27 Baldoyle Bay SPA is within the area in which changes in airborne pollution associated with the Proposed Order have been assessed. As set out in Section 7.3, the maximum contribution attributable to the Proposed Order to NOx concentrations at Baldoyle Bay is predicted to be 0.49% of the applicable Critical Level. This value is well below the 1% screening criterion, and the total predicted NOx concentration remains well below the applicable Critical Level.

7.5.28 The contribution of the Proposed Order to nitrogen deposition at Baldoyle Bay is small and the applicable Critical Load is not predicted to be exceeded when background deposition and other growth incorporated within the 2029 modelling are taken into account. As set out in Section 7.3, changes in airborne pollution associated with the Proposed Order would therefore not result in deterioration of habitats supporting SCI species or an ecologically meaningful change in their function.

7.5.29 Airborne pollution associated with the Proposed Order would therefore not result in deterioration or loss of wetland habitat supporting the SCI species of Baldoyle Bay SPA and would not undermine the site's SSCOs.

Bird Strike

7.5.30 The potential for mortality of SCI species as a result of bird strike is assessed in Section 7.4. The historic bird-strike records indicate a low incidence of strikes involving SCI species. The assessment does not identify a mechanism by which the incremental increase in aircraft movements associated with the Proposed Order would result in additional mortality at a level capable of materially affecting an SCI population.

7.5.31 Bird strike associated with the Proposed Order would therefore not result in a change in the population or distribution of any SCI species of Baldoyle Bay SPA capable of undermining the relevant SSCOs.

Conclusion – Baldoyle Bay SPA

7.5.32 Having regard to the findings of the assessments of disturbance and displacement, airborne pollution and bird strike, and considering those findings in view of the SCIs and SSCOs of Baldoyle Bay SPA, the Proposed Order would not result in deterioration of supporting habitat, sustained disturbance or displacement, or mortality at a level capable of affecting the population or distribution of an SCI species.

7.5.33 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Baldoyle Bay SPA.

Baldoyle Bay SAC

7.5.34 Baldoyle Bay SAC is designated for coastal habitat QIs, including mudflats and sandflats not covered by seawater at low tide, Salicornia and other annuals colonising mud and sand, Atlantic salt meadows and Mediterranean salt meadows. The SSCOs for the SAC seek to maintain or restore the favourable conservation condition of these QI habitats.

7.5.35 The AA Screening identified airborne pollution as the only pathway for which likely significant effects on the QIs of Baldoyle Bay SAC could not be excluded. Other potential impact pathways were screened out because no source-pathway-receptor linkage capable of giving rise to likely significant effects on the QIs of the SAC was identified. The potential effects of changes in NOx and NH_3 concentrations and nitrogen deposition associated with the Proposed Order are assessed in Section 7.3.

Airborne Pollution

7.5.36 The maximum contribution attributable to the Proposed Order to NOx concentrations at Baldoyle Bay is predicted to be 0.49% of the applicable Critical Level. This value is well below the 1% screening criterion, the total predicted NOx concentration, including background concentrations and other growth incorporated within the 2029 modelling, remains well below the applicable annual mean Critical Level of 30 µg/m³.

7.5.37 The contribution of the Proposed Order to nitrogen deposition is small. The applicable Critical Load of 10 kg N/ha/yr is not predicted to be exceeded when background deposition and other growth incorporated within the 2029 modelling are taken into account. The assessment in Section 7.3 therefore concludes that the predicted changes would not result in an ecologically meaningful effect on the QI habitats of the SAC.

7.5.38 Changes in NH_3 concentrations associated with the Proposed Order are also below the applicable assessment criteria. Taken together, the predicted changes in airborne pollution would not result in deterioration in the extent, distribution, structure, function or characteristic species composition of the QI habitats of Baldoyle Bay SAC.

Conclusion – Baldoyle Bay SAC

7.5.39 Having regard to the magnitude of the predicted changes in airborne pollutant concentrations and nitrogen deposition, the applicable Critical Levels and Critical Loads, background conditions and the sensitivity of the QI habitats, the Proposed Order would not undermine the SSCOs for any QI of Baldoyle Bay SAC.

7.5.40 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Baldoyle Bay SAC.

7.5.41 The existing NIS evidence supports the particularly useful Baldoyle-specific points here: the 529 m aircraft altitude, the absence of observed aircraft-related disturbance during the vantage-point surveys, and the 0.49% NOx contribution.

North Dublin Bay SAC

7.5.42 North Dublin Bay SAC is designated for a range of coastal and dune habitat QIs, including habitats that are sensitive to atmospheric nitrogen deposition. The SSCOs for the SAC seek to maintain or restore the favourable conservation condition of these QI habitats.

7.5.43 The AA Screening identified airborne pollution as the only pathway for which likely significant effects on the QIs of North Dublin Bay SAC could not be excluded. Other potential impact pathways were screened out because no source-pathway-receptor linkage capable of giving rise to likely significant effects on the QIs of the SAC was identified. The potential effects of changes in NOx and NH_3 concentrations and nitrogen deposition associated with the Proposed Order are assessed in Section 7.3.

Airborne Pollution

7.5.44 As set out in Section 7.3, the contribution attributable to the Proposed Order to NOx concentrations at North Dublin Bay SAC is below 1% of the applicable Critical Level. The total predicted NOx concentration also remains below the annual mean Critical Level of 30 µg/m³.

7.5.45 North Dublin Bay SAC includes nitrogen-sensitive dune habitats for which a minimum Critical Load of 5 kg N/ha/yr is applicable. The contribution attributable to the Proposed Order represents a maximum increase in nitrogen deposition of approximately 0.2% compared with the 2029 baseline. This represents a very small incremental change and is substantially below the increase considered in the evidence reviewed by Caporn *et al.* (2016) to give rise to measurable changes in species richness.

7.5.46 A lower NH_3 Critical Level of 1 µg/m³ is applicable to particularly sensitive vegetation. However, the air quality modelling does not identify a contribution to NH_3 concentrations from the Proposed Order at North Dublin Bay SAC. Accordingly, the Proposed Order would not contribute to any existing exceedance of the lower Critical Level at this site.

7.5.47 The predicted changes in airborne pollution would therefore not result in deterioration in the extent, distribution, structure, function or characteristic species composition of the QI habitats of North Dublin Bay SAC and would not undermine the relevant SSCOs.

Conclusion – North Dublin Bay SAC

7.5.48 Having regard to the magnitude of the predicted changes in airborne pollutant concentrations and nitrogen deposition, the applicable Critical Levels and Critical Loads, background conditions and the sensitivity of the QI habitats, the Proposed Order would not undermine the SSCOs for any QI of North Dublin Bay SAC.

7.5.49 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of North Dublin Bay SAC.

South Dublin Bay and River Tolka Estuary SPA

7.5.50 South Dublin Bay and River Tolka Estuary SPA is designated for a range of wintering and passage waterbird SCIs, breeding tern species and its wetland and waterbirds assemblage. The SSCOs seek to maintain or restore the favourable conservation condition of the SCI species and the wetland habitat supporting them.

7.5.51 The AA Screening identified disturbance and displacement of SCI species, airborne pollution and bird strike as pathways for which likely significant effects on South Dublin Bay and River Tolka Estuary SPA could not be excluded. These pathways are assessed in Sections 7.2 to 7.4 and their implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.52 The assessment in Section 7.2 concludes that the incremental change in aircraft and other operational activity associated with the Proposed Order would not result in ecologically meaningful disturbance or displacement of SCI bird species. South Dublin Bay and River Tolka Estuary SPA is farther from Dublin Airport than the estuarine sites for which direct vantage-point survey evidence is available, and aircraft would therefore be at greater altitude when passing in the vicinity of the site.

7.5.53 Having regard to the predicted noise environment, aircraft altitude, existing operational environment and the absence of evidence of disturbance at European sites closer to Dublin Airport, the Proposed Order is not expected to result in sustained displacement, material loss of feeding or resting opportunity, or changes in the population or distribution of any SCI species within the SPA.

Airborne Pollution

7.5.54 The air quality assessment has considered South Dublin Bay and River Tolka Estuary SPA in relation to NOx and NH_3 concentrations and nitrogen deposition. The modelling indicates that total concentrations and deposition rates at the SPA remain below the applicable Critical Levels and Critical Loads.

7.5.55 The predicted changes in airborne pollution would therefore not result in deterioration of wetland or other habitats supporting the SCI species of the SPA and would not undermine the relevant SSCOs.

Bird Strike

7.5.56 The potential for mortality of SCI species as a result of bird strike is assessed in Section 7.4. Historic bird-strike records indicate a low incidence of strikes involving SCI species, including black-headed gull, and the assessment does not identify a mechanism by which the incremental increase in aircraft movements associated with the Proposed Order would result in additional mortality at a level capable of materially affecting an SCI population.

7.5.57 Bird strike associated with the Proposed Order would therefore not result in a change in the population or distribution of any SCI species of South Dublin Bay and River Tolka Estuary SPA capable of undermining the relevant SSCOs.

Conclusion – South Dublin Bay and River Tolka Estuary SPA

7.5.58 Having regard to the findings of the assessments of disturbance and displacement, airborne pollution and bird strike, and considering those findings in view of the SCIs and SSCOs of South Dublin Bay and River Tolka Estuary SPA, the Proposed Order would not result in deterioration of supporting habitat, sustained disturbance or displacement, or mortality at a level capable of affecting the population or distribution of an SCI species.

7.5.59 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of South Dublin Bay and River Tolka Estuary SPA.

North Bull Island SPA

7.5.60 North Bull Island SPA is designated for a range of wintering waterbird SCIs and for its wetland and waterbirds assemblage. The SSCOs seek to maintain or restore the favourable conservation condition of the SCI species, including through maintaining their population trend and distribution within the site, and to maintain the wetland habitat as a resource for the regularly occurring migratory waterbirds that utilise it.

7.5.61 The AA Screening identified disturbance and displacement of SCI species, airborne pollution and bird strike as pathways for which likely significant effects on North Bull Island SPA could not be excluded. These pathways are assessed in Sections 7.2 to 7.4 and their implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.62 As set out in Section 7.2, the Proposed Order would increase the frequency of existing operational activity at Dublin Airport but would not introduce a new source or type of disturbance, materially alter aircraft flight paths or extend airport operations into previously unaffected areas. Changes in road traffic and ground noise are not expected to result in ecologically meaningful disturbance or displacement of SCI species.

7.5.63 North Bull Island SPA is farther from Dublin Airport than the estuarine sites at which targeted vantage-point surveys were undertaken. Those surveys recorded no disturbance events involving waterbirds as a result of aircraft passing overhead. Aircraft passing in the vicinity of North Bull Island SPA would also be at greater altitude than at those closer sites.

7.5.64 Having regard to the predicted noise environment, aircraft altitude, the existing operational environment and the available field and literature evidence considered in Section 7.2, the incremental change associated with the Proposed Order is not expected to result in sustained displacement, material loss of feeding or resting opportunity, or changes in the population or distribution of any SCI species within North Bull Island SPA. The relevant SSCOs would therefore not be undermined.

Airborne Pollution

7.5.65 North Bull Island SPA overlaps with North Dublin Bay SAC and the air quality modelling has considered changes in NOx and NH_3 concentrations and nitrogen deposition at this location. Total NOx concentrations and nitrogen deposition rates are predicted to remain below the applicable Critical Level and Critical Loads.

7.5.66 The modelled baseline and operational NH_3 concentration at this location is approximately 1.40 µg/m³, which is above the lower 1 µg/m³ Critical Level applicable to sensitive vegetation within the overlapping North Dublin Bay SAC. This exceedance reflects existing background conditions. The Proposed Order is not predicted to contribute to NH_3 concentrations at North Bull Island SPA.

7.5.67 Accordingly, the Proposed Order would not cause or increase the existing exceedance of the lower NH_3 Critical Level. Taken together with the findings for NOx and nitrogen deposition, the changes in airborne pollution associated with the Proposed Order would not result in deterioration of habitats supporting the SCI species of North Bull Island SPA or an ecologically meaningful change in their function.

Bird Strike

7.5.68 The potential for mortality of SCI species as a result of bird strike is assessed in Section 7.4. Historic bird-strike records include SCI species of North Bull Island SPA, including black-headed gull and curlew. However, even for these species, which have the highest recorded strike rates amongst the relevant SCI species, the average annual number of recorded strikes is less than 1% of the relevant SPA populations.

7.5.69 Having regard to the low historic incidence of strikes involving SCI species and the assessment presented in Section 7.4, the incremental increase in aircraft movements associated with the Proposed Order would not result in additional mortality at a level capable of materially affecting the population or distribution of an SCI species of North Bull Island SPA.

Conclusion – North Bull Island SPA

7.5.70 Having regard to the findings of the assessments of disturbance and displacement, airborne pollution and bird strike, and considering those findings in view of the SCIs and SSCOs of North Bull Island SPA, the Proposed Order would not result in deterioration of supporting habitat, sustained disturbance or displacement, or mortality at a level capable of affecting the population or distribution of an SCI species.

7.5.71 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of North Bull Island SPA.

North-west Irish Sea SPA

7.5.72 North-west Irish Sea SPA is designated for a range of marine and coastal bird SCIs. The SSCOs seek to maintain or restore the favourable conservation condition of the SCI species, including through maintaining their populations and the distribution and availability of habitat supporting them.

7.5.73 The AA Screening identified disturbance and displacement of SCI species and bird strike as pathways for which likely significant effects on North-west Irish Sea SPA could not be excluded. Other potential impact pathways were screened out. These pathways are assessed in Sections 7.2 and 7.4 and their implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.74 As set out in Section 7.2, the Proposed Order would increase the frequency of existing aircraft activity but would not materially alter established flight paths or introduce aircraft activity into previously unaffected areas. The assessment of aircraft noise and visual disturbance does not identify an ecologically meaningful change capable of resulting in sustained disturbance or displacement of SCI species.

7.5.75 North-west Irish Sea SPA encompasses an extensive marine area. Having regard to its distance from Dublin Airport, the altitude of aircraft away from the airport and the available field and literature evidence concerning responses of birds to commercial aircraft overflight, the incremental increase in aircraft activity associated with the Proposed Order would not result in material loss of habitat availability or sustained displacement of SCI species.

7.5.76 The Proposed Order would therefore not result in changes in the population or distribution of SCI species, or the availability of habitat supporting those species, capable of undermining the relevant SSCOs.

Bird Strike

7.5.77 The potential for mortality of SCI species as a result of bird strike is assessed in Section 7.4. The historic bird-strike records demonstrate a low incidence of strikes involving SCI species, and the assessment does not identify a mechanism by which the incremental increase in aircraft movements associated with the Proposed Order would result in additional mortality at a level capable of materially affecting an SCI population.

7.5.78 Bird strike associated with the Proposed Order would therefore not result in a change in the population or distribution of any SCI species of North-west Irish Sea SPA capable of undermining the relevant SSCOs.

Conclusion – North-west Irish Sea SPA

7.5.79 Having regard to the findings of the assessments of disturbance and displacement and bird strike, and considering those findings in view of the SCIs and SSCOs of North-west Irish Sea SPA, the Proposed Order would not result in sustained disturbance or displacement, material loss of supporting habitat, or mortality at a level capable of affecting an SCI population.

7.5.80 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of North-west Irish Sea SPA.

Rogerstown Estuary SPA

7.5.81 Rogerstown Estuary SPA is designated for a range of wintering waterbird SCIs and for its wetland and waterbirds assemblage. The SSCOs seek to maintain or restore the favourable conservation condition of the SCI species, including through maintaining their population trend and distribution within the site, and to maintain the wetland habitat as a resource for the regularly occurring migratory waterbirds that utilise it.

7.5.82 The AA Screening identified disturbance and displacement of SCI species and bird strike as pathways for which likely significant effects on Rogerstown Estuary SPA could not be excluded. Other potential impact pathways were screened out. These pathways are assessed in Sections 7.2 and 7.4 and their implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.83 As set out in Section 7.2, the Proposed Order would increase the frequency of existing operational activity at Dublin Airport but would not introduce a new source or type of disturbance or materially alter established aircraft flight paths. The assessment of aircraft noise and visual disturbance does not identify an ecologically meaningful change capable of resulting in sustained disturbance or displacement of SCI species.

7.5.84 Rogerstown Estuary SPA was included in the targeted vantage-point surveys undertaken to investigate the response of waterbirds to aircraft overflight. Across the surveys undertaken at Rogerstown Estuary SPA, Malahide Estuary SPA and Baldoyle Bay SPA, comprising approximately 252 hours of survey effort, no disturbance events involving waterbirds were recorded as a result of aircraft passing overhead. This provides direct field evidence that waterbirds using these sites are not currently exhibiting observable disturbance responses to aircraft overflight.

7.5.85 The Proposed Order would increase the frequency of aircraft movements but would not materially alter the nature of the aircraft activity, flight paths or the altitude of aircraft over the SPA. Having regard to the existing operational environment, the available literature and the direct field survey evidence, the incremental change associated with the Proposed Order is not expected to result in sustained displacement, material loss of feeding or resting opportunity, or changes in the population or distribution of any SCI species within Rogerstown Estuary SPA.

Bird Strike

7.5.86 The potential for mortality of SCI species as a result of bird strike is assessed in Section 7.4. The historic bird-strike records demonstrate a low incidence of strikes involving SCI species and the assessment does not identify a mechanism by which the incremental increase in aircraft movements associated with the Proposed Order would result in additional mortality at a level capable of materially affecting an SCI population.

7.5.87 Bird strike associated with the Proposed Order would therefore not result in a change in the population or distribution of any SCI species of Rogerstown Estuary SPA capable of undermining the relevant SSCOs.

Conclusion – Rogerstown Estuary SPA

7.5.88 Having regard to the findings of the assessments of disturbance and displacement and bird strike, and considering those findings in view of the SCIs and SSCOs of Rogerstown Estuary SPA, the Proposed Order would not result in sustained disturbance or displacement, material loss of supporting habitat, or mortality at a level capable of affecting the population or distribution of an SCI species.

7.5.89 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Rogerstown Estuary SPA.

Ireland's Eye SAC

7.5.90 Ireland's Eye SAC is designated for coastal habitat QIs, including perennial vegetation of stony banks and vegetated sea cliffs of the Atlantic and Baltic coasts. The SSCOs seek to maintain the favourable conservation condition of these QI habitats.

7.5.91 The AA Screening identified airborne pollution as the only pathway for which likely significant effects on the QIs of Ireland's Eye SAC could not be excluded. Other potential impact pathways were screened out because no source-pathway-receptor linkage capable of giving rise to likely significant effects on the QIs of the SAC was identified. The potential effects of changes in NOx and NH_3 concentrations and nitrogen deposition associated with the Proposed Order are assessed in Section 7.3.

Airborne Pollution

7.5.92 As set out in Section 7.3, the contribution attributable to the Proposed Order to NOx concentrations at Ireland's Eye SAC is below 1% of the applicable Critical Level. Total NOx concentrations are also predicted to remain below the annual mean Critical Level of 30 µg/m³.

7.5.93 The contribution attributable to the Proposed Order to nitrogen deposition is small. The applicable Critical Load of 10 kg N/ha/yr is not predicted to be exceeded when background deposition and other growth incorporated within the 2029 modelling are taken into account.

7.5.94 Changes in NH_3 concentrations associated with the Proposed Order are also below the applicable assessment criteria. Taken together, the predicted changes in airborne pollution would not result in deterioration in the extent, distribution, structure, function or characteristic species composition of the QI habitats of Ireland's Eye SAC.

Conclusion – Ireland's Eye SAC

7.5.95 Having regard to the magnitude of the predicted changes in airborne pollutant concentrations and nitrogen deposition, the applicable Critical Levels and Critical Loads, background conditions and the sensitivity of the QI habitats, the Proposed Order would not undermine the SSCOs for any QI of Ireland's Eye SAC.

7.5.96 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Ireland's Eye SAC.

Ireland's Eye SPA

7.5.97 Ireland's Eye SPA is designated for breeding seabird SCIs. The SSCOs seek to maintain or restore the favourable conservation condition of the SCI species, including through maintaining their population and distribution and the availability of suitable habitat.

7.5.98 The AA Screening identified disturbance and displacement of SCI species and bird strike as pathways for which likely significant effects on Ireland's Eye SPA could not be excluded. These pathways are assessed in Sections 7.2 and 7.4 and their implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.99 As set out in Section 7.2, the Proposed Order would increase the frequency of existing aircraft activity but would not materially alter established flight paths or introduce a new source or type of disturbance. Having regard to the distance of Ireland's Eye SPA from Dublin Airport, the altitude of aircraft in the vicinity of the SPA and the available evidence concerning the response of birds to commercial aircraft overflight, the incremental increase in aircraft activity is not expected to result in ecologically meaningful disturbance or displacement of SCI species.

7.5.100 The Proposed Order would therefore not result in sustained displacement, material loss of feeding or breeding opportunity, or changes in the population or distribution of SCI species capable of undermining the relevant SSCOs.

Airborne Pollution

7.5.101 Ireland's Eye SPA is also within the area in which changes in airborne pollution associated with the Proposed Order have been assessed. As set out in Section 7.3, the contribution attributable to the

Proposed Order to NOx concentrations is below 1% of the applicable Critical Level, and total NOx concentrations remain below the Critical Level when background concentrations and other growth incorporated within the 2029 modelling are taken into account.

7.5.102 The contribution to nitrogen deposition is small, and the applicable Critical Load of 10 kg N/ha/yr is not predicted to be exceeded. Changes in NH_3 concentrations associated with the Proposed Order are also below the applicable assessment criteria. The predicted changes in airborne pollution would therefore not result in deterioration of habitat supporting the SCI species of Ireland's Eye SPA or an ecologically meaningful change in its function.

7.5.103 Airborne pollution associated with the Proposed Order would therefore not undermine the SSCOs for Ireland's Eye SPA.

Bird Strike

7.5.104 The potential for mortality of SCI species as a result of bird strike is assessed in Section 7.4. The historic bird-strike records demonstrate a low incidence of strikes involving SCI species and the assessment does not identify a mechanism by which the incremental increase in aircraft movements associated with the Proposed Order would result in additional mortality at a level capable of materially affecting an SCI population.

7.5.105 Bird strike associated with the Proposed Order would therefore not result in changes in the population or distribution of SCI species of Ireland's Eye SPA capable of undermining the relevant SSCOs.

Conclusion – Ireland's Eye SPA

7.5.106 Having regard to the findings of the assessments of disturbance and displacement, airborne pollution and bird strike, and considering those findings in view of the SCIs and SSCOs of Ireland's Eye SPA, the Proposed Order would not result in sustained disturbance or displacement, material loss of supporting habitat, or mortality at a level capable of affecting an SCI population.

7.5.107 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Ireland's Eye SPA.

Howth Head SAC

7.5.108 Howth Head SAC is designated for coastal habitat QIs, including European dry heaths and vegetated sea cliffs of the Atlantic and Baltic coasts. The SSCOs seek to maintain the favourable conservation condition of these QI habitats.

7.5.109 The AA Screening identified airborne pollution as the only pathway for which likely significant effects on the QIs of Howth Head SAC could not be excluded. Other potential impact pathways were screened out because no source-pathway-receptor linkage capable of giving rise to likely significant effects on the QIs of the SAC was identified. The potential effects of changes in NOx and NH_3 concentrations and nitrogen deposition associated with the Proposed Order are assessed in Section 7.3.

Airborne Pollution

7.5.110 As set out in Section 7.3, the contribution attributable to the Proposed Order to NOx concentrations at Howth Head SAC is below 1% of the applicable Critical Level. Total NOx concentrations are also predicted to remain below the annual mean Critical Level of 30 µg/m³.

7.5.111 Howth Head SAC includes heathland habitat for which the lower NH_3 Critical Level of 1 µg/m³ is applicable. However, the air quality modelling does not identify any contribution to NH_3 concentrations at Howth Head SAC attributable to the Proposed Order. The Proposed Order would therefore not cause or contribute to an exceedance of the applicable NH_3 Critical Level.

7.5.112 The heathland habitats are also sensitive to nitrogen deposition, with a minimum Critical Load of 5 kg N/ha/yr. The Proposed Order represents a maximum increase in nitrogen deposition of approximately 0.2% compared with the 2029 baseline. As set out in Section 7.3, this represents a very small incremental change and is substantially below the additional nitrogen dose considered by Caporn *et al.* (2016) to result in measurable changes in species richness.

7.5.113 The predicted changes in airborne pollution would therefore not result in deterioration in the extent, distribution, structure, function or characteristic species composition of the QI habitats of Howth Head SAC and would not undermine the relevant SSCOs.

Conclusion – Howth Head SAC

7.5.114 Having regard to the magnitude of the predicted changes in airborne pollutant concentrations and nitrogen deposition, the applicable Critical Levels and Critical Loads, background conditions and the sensitivity of the QI habitats, the Proposed Order would not undermine the SSCOs for any QI of Howth Head SAC.

7.5.115 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Howth Head SAC.

Howth Head Coast SPA

7.5.116 Howth Head Coast SPA is designated for breeding kittiwake. The SSCOs seek to maintain the favourable conservation condition of this SCI species.

7.5.117 The AA Screening identified disturbance and displacement of the SCI species as the pathway for which likely significant effects on Howth Head Coast SPA could not be excluded. The potential for disturbance and displacement is assessed in Section 7.2 and its implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.118 Kittiwake is a marine species which, other than when nesting on sea cliffs or occasionally on coastal structures, occurs within the marine environment. Howth Head Coast SPA is more than 11 km from Dublin Airport, and habitats within and around Dublin Airport do not provide habitat for the SCI population of the SPA.

7.5.119 Aircraft passing in the vicinity of Howth Head Coast SPA would be at altitudes well above 300 m and therefore above the altitude at which the literature reviewed in Section 7.2 indicates significant visual disturbance of birds from commercial aircraft overflight is generally expected. The Proposed Order would increase the frequency of existing aircraft activity but would not materially alter established flight paths or the nature of aircraft activity in the vicinity of the SPA.

7.5.120 The incremental change in aircraft activity associated with the Proposed Order would therefore not result in sustained disturbance or displacement of breeding kittiwake, affect the availability of supporting habitat or otherwise undermine the relevant SSCOs.

Conclusion – Howth Head Coast SPA

7.5.121 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Howth Head Coast SPA.

Lambay Island SPA

7.5.122 Lambay Island SPA is designated for a range of breeding seabird SCIs. The SSCOs seek to maintain or restore the favourable conservation condition of these SCI species, including through maintaining their populations, distribution and the availability of suitable supporting habitat.

7.5.123 The AA Screening identified disturbance and displacement of SCI species and bird strike as pathways for which likely significant effects on Lambay Island SPA could not be excluded. These pathways are assessed in Sections 7.2 and 7.4 and their implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.124 As set out in Section 7.2, the Proposed Order would increase the frequency of existing aircraft activity but would not materially alter established flight paths or introduce a new source or type of disturbance. Having regard to the distance of Lambay Island SPA from Dublin Airport, the altitude of aircraft in the vicinity of the SPA and the available evidence concerning the response of birds to commercial aircraft overflight, the incremental increase in aircraft activity is not expected to result in ecologically meaningful disturbance or displacement of SCI species.

7.5.125 The Proposed Order would therefore not result in sustained displacement, material loss of feeding or breeding opportunity, or changes in the population or distribution of SCI species capable of undermining the relevant SSCOs.

Bird Strike

7.5.126 The potential for mortality of SCI species as a result of bird strike is assessed in Section 7.4. The historic bird-strike records demonstrate a low incidence of strikes involving SCI species, and the assessment does not identify a mechanism by which the incremental increase in aircraft movements associated with the Proposed Order would result in additional mortality at a level capable of materially affecting an SCI population.

7.5.127 Bird strike associated with the Proposed Order would therefore not result in changes in the population or distribution of SCI species of Lambay Island SPA capable of undermining the relevant SSCOs.

Conclusion – Lambay Island SPA

7.5.128 Having regard to the findings of the assessments of disturbance and displacement and bird strike, and considering those findings in view of the SCIs and SSCOs of Lambay Island SPA, the Proposed Order would not result in sustained disturbance or displacement, material loss of supporting habitat, or mortality at a level capable of affecting an SCI population.

7.5.129 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Lambay Island SPA.

Dalkey Islands SPA

7.5.130 Dalkey Islands SPA is designated for roseate tern, common tern and Arctic tern. The site supports these species during the breeding and/or passage periods, and the SSCOs seek to maintain or restore their favourable conservation condition.

7.5.131 The AA Screening identified disturbance and displacement of SCI species as the pathway for which likely significant effects on Dalkey Islands SPA could not be excluded. The potential for disturbance and displacement is assessed in Section 7.2 and its implications for the SPA and its SSCOs are considered below.

Disturbance and Displacement

7.5.132 Roseate tern, common tern and Arctic tern are associated with marine and coastal habitats and nest in close proximity to the sea. Habitats within and in the vicinity of Dublin Airport do not provide supporting habitat for these SCI species, and no functionally linked habitat associated with the SPA has been identified in the vicinity of Dublin Airport. Dalkey Islands SPA is more than 17 km from Dublin Airport.

7.5.133 Aircraft passing in the vicinity of Dalkey Islands SPA would be at altitudes well above 300 m and therefore above the altitude at which the literature reviewed in Section 7.2 indicates significant visual disturbance of birds from commercial aircraft overflight is generally expected. The Proposed Order would increase the frequency of existing aircraft activity but would not materially alter established flight paths or the nature of aircraft activity in the vicinity of the SPA.

7.5.134 The incremental change in aircraft activity associated with the Proposed Order would therefore not result in sustained disturbance or displacement of the SCI tern species, affect the availability of supporting habitat or otherwise undermine the relevant SSCOs.

Conclusion – Dalkey Islands SPA

7.5.135 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the site's SSCOs, that the Proposed Order would not adversely affect the integrity of Dalkey Islands SPA.

7.6 In-combination assessment

7.6.1 The potential for the Proposed Order to result in adverse effects on the integrity of European sites in combination with other plans or projects has been considered. The in-combination assessment has had regard to other plans and projects where there is potential for their effects to interact with those associated with the Proposed Order in relation to the European sites and impact pathways considered in this NIS.

7.6.2 The preceding assessment has concluded that the Proposed Order would not adversely affect the integrity of any European site through disturbance or displacement of SCI species, airborne pollution or injury or mortality of SCI species as a result of bird strike. Notwithstanding these conclusions, the potential for effects associated with the Proposed Order to interact with effects arising from the identified plans and projects in Section 6.5 has been considered below.

Disturbance and Displacement

7.6.3 The identified plans and projects are predominantly located within the existing developed and urbanised environment of the Greater Dublin area. Construction activities associated with these plans and projects may give rise to temporary and localised sources of noise, visual activity and other disturbance in the vicinity of individual development sites.

7.6.4 The identified plans and projects are not expected to result in disturbance or displacement of SCI species at a scale capable of interacting with the incremental change in operational activity associated with the Proposed Order. In particular, the identified development sites are located within existing developed areas and no relevant interaction with important functionally linked habitat for the SCI species considered in this NIS has been identified.

7.6.5 Furthermore, as set out in Section 7.2, the incremental changes in noise, visual activity and aircraft movements associated with the Proposed Order would not themselves result in ecologically meaningful disturbance or displacement of SCI species. No mechanism has therefore been identified by which disturbance or displacement associated with the Proposed Order could interact with that arising from the identified plans and projects so as to undermine the SSCOs of a European site.

Airborne Pollution

7.6.6 The potential for in-combination effects associated with airborne pollution has been incorporated into the air quality assessment presented in Section 7.3 and Appendix G. The future-year modelling includes background concentrations and deposition and relevant forecast growth, thereby accounting for other sources that would contribute to future air quality conditions.

7.6.7 The assessment also incorporates the relevant traffic effects of identified transport projects. The road and junction realignment and associated traffic-flow effects of BusConnects have been accounted for in the assessment, and traffic flows associated with MetroLink have also been incorporated into the modelling.

7.6.8 As set out in Section 7.3, taking account of these future background conditions and other relevant sources, the predicted changes in NOx and NH_3 concentrations and nitrogen deposition associated with the Proposed Order would not result in deterioration of QI habitats or supporting habitat for SCI species capable of undermining the SSCOs of a European site.

7.6.9 The air quality assessment therefore does not identify an adverse effect on the integrity of any European site arising from the Proposed Order in combination with other plans and projects.

Bird Strike

7.6.10 The identified plans and projects comprise development and transport infrastructure and would not result in an increase in aircraft movements or otherwise introduce a source of bird-strike risk capable of interacting with the change in aircraft activity associated with the Proposed Order.

7.6.11 As set out in Section 7.4, the incremental increase in aircraft movements associated with the Proposed Order would not result in mortality of SCI species at a level capable of materially affecting their population or distribution. No pathway has been identified by which the Proposed Order could act in combination with the identified plans and projects to result in injury or mortality of SCI species at a level capable of undermining the relevant SSCOs.

Conclusion

7.6.12 Having regard to the nature and scale of the effects associated with the Proposed Order, the findings of the assessments presented in Sections 7.2 to 7.4, and the nature and effects of the identified plans and projects, no in-combination effects have been identified that would undermine the SSCOs of any European site.

7.6.13 It can therefore be concluded, on the basis of the information presented in this NIS and in view of the relevant SSCOs, that the Proposed Order would not adversely affect the integrity of any European site in combination with other plans or projects.

8 Conclusion

8.1.1 This NIS has been prepared to provide the information necessary to enable ACP to undertake an Appropriate Assessment of the implications of the Proposed Order for European sites in view of their conservation objectives.

8.1.2 The Proposed Order is not directly connected with or necessary to the management of a European site. The Report to Inform AA Screening therefore considered whether the Proposed Order, either alone or in combination with other plans or projects, is likely to have a significant effect on any European site. The Report to Inform AA Screening identified those European sites and potential impact pathways for which likely significant effects could not be excluded in the absence of mitigation. These were taken forward for further assessment in this NIS.

8.1.3 The assessment has considered the potential for adverse effects on the integrity of European sites arising from disturbance and displacement of SCI species, airborne pollution, and injury or mortality of SCI species as a result of bird strike. The assessment has considered the Proposed Order alone and in combination with other plans or projects.

8.1.4 In relation to disturbance and displacement, the assessment has considered the incremental change in aircraft activity, road traffic and other operational activity associated with the 2029 Proposed Operation (40 mppa), compared with the 2029 Permitted Operation (32 mppa). The assessment has considered potential effects arising from noise and visual disturbance, including the potential for effects during the night-time period. Having regard to the magnitude and spatial extent of the predicted changes, the existing operational environment, aircraft altitude, the available scientific literature and the results of targeted bird surveys, the assessment concludes that the Proposed Order would not result in ecologically meaningful disturbance or displacement of SCI species capable of undermining the SSCOs of any European site.

8.1.5 In relation to airborne pollution, modelling has considered changes in NOx and NH_3 concentrations and nitrogen deposition associated with the Proposed Order. Although the contribution attributable to the Proposed Order exceeds the 1% screening criterion for NOx at Malahide Estuary and Baldoyle Bay and marginally exceeds the 1% screening criterion for nitrogen deposition at Malahide Estuary, the assessment concludes that the predicted changes would not result in deterioration of QI habitats or habitats supporting SCI species capable of undermining the relevant SSCOs. The assessment also takes account of relevant background conditions and other growth incorporated within the future-year modelling.

8.1.6 In relation to bird strike, the available historic bird-strike records demonstrate a low incidence of strikes involving SCI species. Having regard to those records, the occurrence and abundance of SCI species in the vicinity of Dublin Airport, the existing collision-risk environment and the nature of the incremental change in aircraft movements associated with the Proposed Order, the assessment concludes that the Proposed Order would not result in additional mortality at a level capable of materially affecting the population or distribution of an SCI species or undermining the relevant SSCOs.

8.1.7 The assessment has considered these findings in the context of the QIs/SCIs and SSCOs of each European site taken forward to Appropriate Assessment. For each site, the assessment concludes that the Proposed Order would not result in effects capable of undermining the relevant SSCOs and would not adversely affect site integrity.

8.1.8 The potential for the effects of the Proposed Order to interact with those arising from other plans or projects has also been considered. No in-combination effects have been identified that would undermine the SSCOs or adversely affect the integrity of any European site.

8.1.9 The conclusions of the assessment do not rely on mitigation measures introduced for the purpose of avoiding or reducing adverse effects on European sites. Existing operational management measures referred to in the assessment, including the Wildlife Hazard Management Plan, form part of the established operation of Dublin Airport and would continue irrespective of the Proposed Order.

On the basis of the information presented in this NIS, it can be concluded that the Proposed Order, either alone or in combination with other plans or projects, would not adversely affect the integrity of any European site in view of the site's conservation objectives.

References

AECOM (2025). Environmental Impact Assessment Report. Dublin Airport Cargo Relocation

AECOM (2024). Environmental Impact Assessment Report. Dublin Infrastructure Application
Adams, C.A., Fernández-Juricic, E., Bayne, E.M. and St. Clair, C.C. (2021). Effects of artificial light on bird movement and distribution: a systematic map. *Environmental Evidence* **10**.

Aquatic Service Unit (UCC) (2020a). A Water Quality and Fisheries Study of the Rivers and Stream Draining Dublin Airport in North County Dublin Using Macroinvertebrate Collections.

Aquatic Services Unit (UCC) (2020b). Marine Intertidal Surveys at Three Protected Estuaries: Malahide Estuary, Baldoyle Estuary, and Dublin Bay.

Armitage, M.J.S., Holloway, S.J., Shaw, P. and Rehfisch, M.M. (2002). Through-the-tidal-cycle and Night-time Waterbird Counts as part of the London Gateway Assessment. BTO Research Report 283. British Trust for Ornithology, Thetford.

BCT (2020). Core Sustenance Zones and habitats of importance for designing Biodiversity Net Gain for bats. Bat Conservation Trust, London. Available from: https://www.bats.org.uk/resources/guidance-for-professionals/bat-species-core-sustenance-zones-and-habitats-for-biodiversity-net-gain.

Beason, R.C. (2004). What Can Birds Hear? USDA National Wildlife Research Center Staff Publications 78.

Berger, E.H., Neitzel, R. and Kladden, C.A. (2016). Noise Navigator™ Sound Level Database. 3M™ E-A-RCAL Laboratory.

Bibby, C.J., Burgess, N.D., Hill, D.A. and Mustoe, S. (2000). Bird Census Techniques. 2nd Edition. Academic Press, London.

BirdWatch Ireland and NPWS (undated). Counter Manual – Guidelines for Irish Wetland Bird Survey counters.

Brown, A.L. (1990). Measuring the effect of aircraft noise on sea birds. *Environment International* **16**, pp 587-592.

Burger, J. (1981). Behavioural responses of herring gulls *Larus argentatus* to aircraft noise. *Environmental Pollution (Series A)* **24**, pp 177-184.

Buxton, R.T., Galvan, R., McKenna, M.F., White, C.L. and Seher, V. (2017). Visitor noise at a nesting colony alters the behaviour of a coastal seabird. *Marine Ecology Progress Series* **570**, pp 233-246.

BirdWatch Ireland and NPWS (undated). Counter Manual – Guidelines for Irish Wetland Bird Survey counters. Available from: https://birdwatchireland.ie/publications/i-webs-counter-manual/.

Bontadina, F., Schofield, H. and Naef-Daenzer, B. (2002) Radio-tracking reveals that lesser horseshoe bats (*Rhinolophus hipposideros*) forage in woodland. *Journal of Zoology* **258**, pp 281–290.

Born, E.W., Riget, F.F., Dietz, R. and Andriashek, D. (1999). Escape responses of hauled out ringed seals (*Phoca hispida*) to aircraft disturbance. *Polar Biology* **21**, pp 171-178.

Chase, R (2001). Sensor Organs and the Nervous System, in: Barker, G.M. (ed.). The Biology of Terrestrial Molluscs. CABI Publishing, Oxford.

CIEEM (2022a). Code of Professional Conduct. February 2022. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2022b). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.2 – Updated April 2022. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2021). Advisory Note: Ecological Assessment of Air Quality Impacts. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2019). Advice Note on the Lifespan of Ecological Reports & Surveys. Available from: https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf.

CIRIA (2015). Environmental good practice on site guide (4th edition) (C741).

CIRIA (2001). Control of water pollution from construction sites. Guidance for consultants and contractors (C532D).

Cutts, N., Hemingway, K. and Spencer, J. (2013). Waterbird Disturbance Mitigation Toolkit. Institute of Estuarine and Coastal Studies, University of Hull.

Cutts, N., Phelps, A. and Burdon, D. (2009). Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance. Report to Humber INCA. Institute of Estuarine and Coastal Studies, University of Hull.

Dublin Airport (2025) Aerodrome Manual Part E: Wildlife and Habitat Management Plan. PLN.601 v5.4 20/06/2025.

Dublin Airport EIAR (2021) Dublin Airport North Runway (10L/28R) Relevant Action Application Volume 2 – Main Report. Available at: https://www.dublinairport.com/docs/default-source/chauffeur/environmental-impact-assessment-report.pdf?sfvrsn=e92966c9_2

Department of Transport (1988). Calculation of Road Traffic Noise. Department of Transport, Welsh Office. Her Majesty's Stationary Office, London.

Dijk, N. (2011). Dry deposition of ammonia gas drives species change faster than wet deposition of ammonia ion: evidence from a long-term field manipulation. *Global Change Biology* **17**, pp 3589-3607.

DMRB (2024) LA105 Air Quality (vertical barriers) available here: LA 105 - Air quality

DoEHLG (2010). Appropriate Assessment of plans and projects in Ireland. Guidance for Planning Authorities. Department of Environment, Heritage and Local Government: Ireland.

Dooling R.J. and Popper, A.N. (2007). The Effects of Highway Noise on Birds. Report to CALTRANS (California Department of Transportation), Environmental BioAcoustics LLC.

Dunnet, G.M. (1977). Observations on the effects of low-flying aircraft at seabird colonies on the coast of Aberdeenshire, Scotland. *Biological Conservation* **12**, pp 55-63.

Dwyer, R.G., Bearhop, S., Campbell, H.A. and Bryant, D.M. (2012). Shedding light on light: benefits of anthropogenic illumination to a nocturnally foraging shorebird. *Journal of Animal Ecology* **82(2)**, pp 478-485.

Environment Agency and SEPA (2003). Integrated Pollution Prevention and Control (IPPC) Environmental Assessment and Appraisal of BAT. Available from: https://www.sepa.org.uk/media/61377/ippc-h1-environmental-assessment-and-appraisal-of-bat-updated-july-2003.pdf.

EPA (2021). Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects. Available from: https://www.epa.ie/publications/circular-economy/resources/best-practice-guidelines-for-the-preparation-of-resource--waste-management-plans-for-construction--demolition-projects.php.

European Commission (2022). Guidance document on Assessment of plans and projects in relation to Natura 2000 sites: A summary.

European Commission (2021). Assessment of Plans and Projects Significantly Affecting European sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission Environment Directorate-General).

European Commission (2018). Commission Notice: Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Brussels, 21.11.2018 (2018) 7621 final.

Fossitt, J. (2000). A Guide to Habitats in Ireland. Heritage Council, Kilkenny.

Foulkes N. F, Fuller J., Little D., McCourt S., Murphy P. (2013). Hedgerow Appraisal System: Best Practice Guidance on Hedgerow Surveying, Data Collation and Appraisal. The Heritage Council Gilbert, G., Gibbons, D.W. and Evans, J. (1998). Bird Monitoring Methods: A Manual of Techniques for UK Key Species. Royal Society for the Protection of Birds, Sandy.

Goodship, N.M. and Furness, R.W. (2022). NatureScot Research Report 1283 – Disturbance Distances Review: An updated literature review of disturbance distances in selected bird species. Available from: https://www.nature.scot/doc/naturescot-research-report-1283-disturbance-distances-review-updated-literature-review-disturbance.

Goudie, R.I. and Jones, I.L. (2004). Dose-response relationships of harlequin duck behaviour to noise from low-level military jet over-flights in central Labrador. *Environmental Conservation* **31**, pp 289−298.

Grubb, M. (1979). Effects of increased noise levels of nesting herons and egrets. *Proceedings of the colonial waterbird group* **2**: 49-54.

Hansen, C. H. (1951). Fundamentals of Acoustics. Available from: https://www.who.int/occupational_health/publications/noise1.pdf.

Highways England, Transport Scotland, Welsh Government and Department for Infrastructure (2019). Design Manual for Roads and Bridges. Sustainability and Environment Appraisal. LA 105: Air quality. Available from: https://www.standardsforhighways.co.uk/prod/attachments/10191621-07df-44a3-892e-c1d5c7a28d90?inline=true.

Hoang, T. (2013). A literature review of the effects of aircraft disturbances on seabirds, shorebirds and marine mammals. Presented to NOAA, Greater Farallones National Marine Sanctuary and the Seabird Protection Network.

HSE (2005). Noise at work – Guidance for employers on the Control of Noise at Work Regulations 2005. Health and Safety Executive.

IAQM (2024). Guidance on the assessment of dust from demolition and construction. Version 2.2., January 2024. Institute of Air Quality Management, London.

IAQM (2019). A guide to the assessment of air quality impacts on designated nature conservation sites. Institute of Air Quality Management, London.

ICAO (2020). Airport Air Quality Manual. 2nd Edition, Doc 9889.

JNCC (2015). A Conservation Literature Review for the Harbour Porpoise (*Phocoena phocoena*). JNCC Report No. 566. December 2015.

Komenda-Zehnda, S., Cevallos, M. and Bruderer, B. (2003). Effects of disturbance by aircraft overflight on waterbirds – an experimental approach. International Bird Strike Committee. IBSC26/WP-LE2, Warsaw 5-9 May 2009.

Koolhaas, A., Dekinga, A. and Piersma, T. (1993). Disturbance of foraging knots by aircraft in the Dutch Wadden Sea in August-October 1992. *Water Study Group Bulletin* **68**, pp 20-22.

Mott MacDonald (2026), Dublin Airport Operating Scenarios: Current State and Forecast Operating Schedules: developed in support of the Dublin Airport Passenger Cap Legislation process, Version 1.0, July 2026.

Natural England (2018). Natural England's Approach to Advising Competent Authorities on the Assessment of Road Traffic Emissions under the Habitats Regulations. Available from: https://publications.naturalengland.org.uk/publication/4720542048845824.

Nicholas O'Dwyer (2023). Environmental Impact Assessment Report. Airfield Drainage Project.

NPWS (2018) Conservation objectives supporting document – lesser horseshoe bat (*Rhinolophus hipposideros*) Version 1. Conservation Objectives Supporting Document Series. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland.

NPWS (2013). Malahide Estuary SAC (site code: 205) Conservation objectives supporting document – coastal habitats.

NPWS (2010). Circular NPW 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.

NRA (2014). Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

NRA (2006). Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

NRA (2004). Guidelines for the Treatment of Noise and Vibration in National Road Schemes. National Roads Authority (now Transport Infrastructure Ireland), Dublin.

OPR (2021). OPR Practice Note PN01: Appropriate Assessment Screening for Development Management. March 2021.

Patenaude, N., Richardson, J.W., Smultea, A.M. and Koski, W.R. (2006). Aircraft sound and disturbance to bowhead and beluga whales during spring migration in the Alaskan Beaufort Sea. *Marine Mammal Science* **18(2)**, pp 309-335.

Reid, N., Hayden, B., Lundy, M.G., Pietravalle, S., McDonald, R.A. & Montgomery, W.I. (2013). National Otter Survey of Ireland 2010/12. Irish Wildlife Manuals No. 76. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

RPS (2018). Coastal Waterbird Disturbance Study for daa at Rogerstown Estuary SPA and Baldoyle Bay SPA.

Scottish Government (2014). Guidance on the Offence of Harassment at Seal Haul-out Sites. June 2014. Available from: https://consult.gov.scot/marine-environment/possible-designation-of-a-seal-haul-out-site/user_uploads/guidance-on-the-offence-of-harassment-at-seal-haul-out-sites.pdf-1.

SEPA (2017). Land Use Planning System SEPA Guidance Note 31: Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. Version 3. Available from https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf.

Smith, G.F., O'Donoghue, P., O'Hora, K. and Delaney, E. (2011). Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council, Kilkenny.SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. Version 2 – March 2017. Available from: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms.

SNH (2016). Assessing Connectivity with Special Protection Areas (SPAs). Version 3, June 2016. Available from: https://www.nature.scot/assessing-connectivity-special-protection-areas.

Stace, C. (2019). New Flora of the British Isles (4th Edition). C&M Floristics, Middlewood Green.

TII (2022a). Air Quality Assessment of Specified Infrastructure Projects – Overarching Technical Document. Available from: https://www.thenbs.com/PublicationIndex/documents/details?Pub=TII&DocId=351880.

TII (2022b). Air Quality Assessment of Proposed National Roads – Standard. PE-ENV-01107. Available from: https://www.tiipublications.ie/library/PE-ENV-01107-01.pdf.

Wahlberg, N., Klemtti, T., Selonen, V. and Hanski, I. (2002). Metapopulation structure and movements in five species of checkerspot butterflies. *Oecologia* **130(1)**, pp 2074-2091.

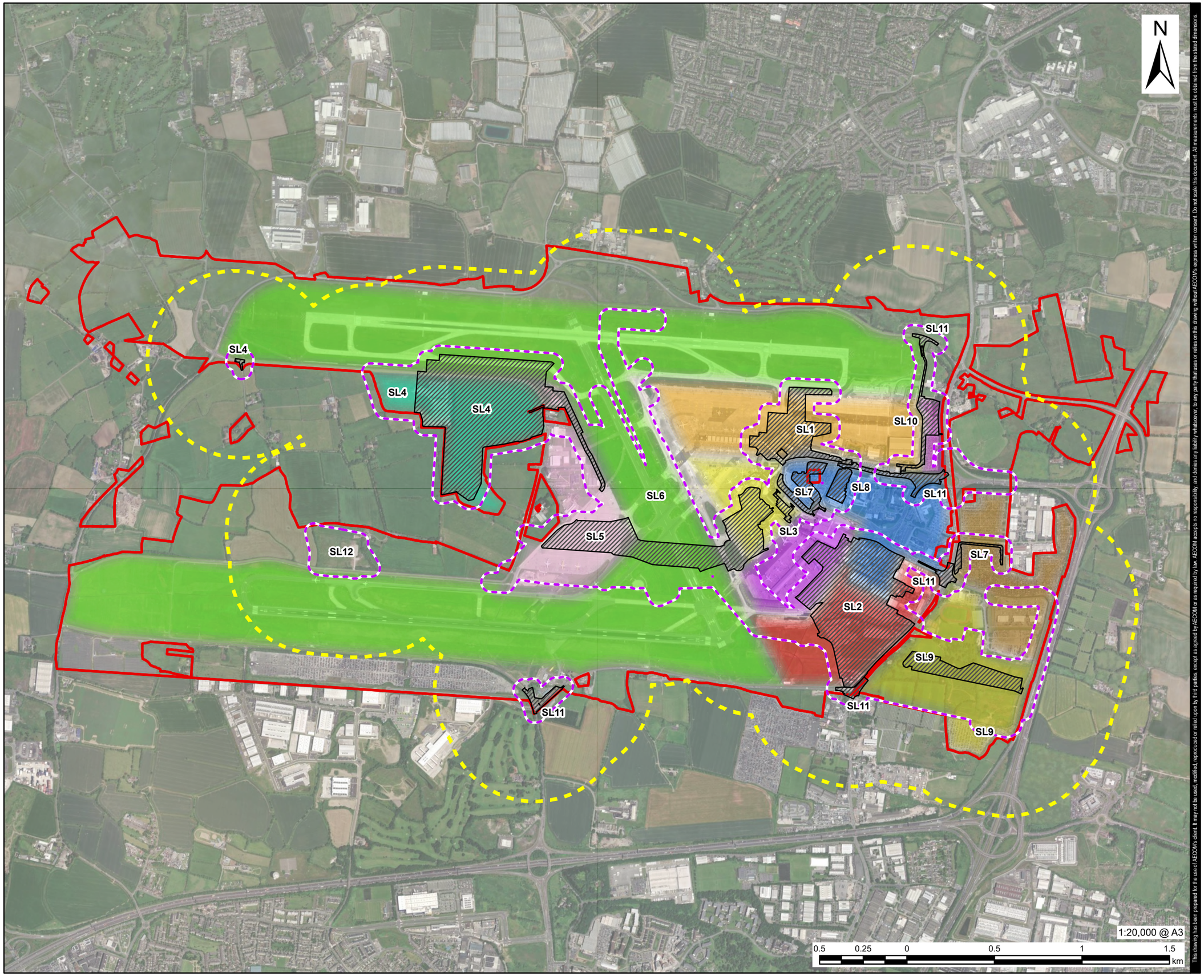
Wilson, S.C. (undated). The impact of human disturbance at seal haul-outs. A literature review for the Seal Conservation Society.

Wolseley, P.A., James, P.W., Theobald, M.R. and Sutton, M.A. (2006). Detecting changes in epiphytic lichen communities at sites affected by atmospheric ammonia from agricultural sources. *Lichenologist* **38**, pp 161-176.

Figures

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PROJECT

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LEGEND

- Proposed Order Boundary
- Survey Locations
- Habitiat survey area / suitable habitat within this area surveyed for important species
- Suitable habitat within this area surveyed for non-breeding birds

Sectors

- Sector A
- Sector B
- Sector C
- Sector D
- Sector E
- Sector F
- Sector G
- Sector H
- Sector I
- Sector J
- Sector K

NOTES

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ISSUE PURPOSE

FOR ISSUE

PROJECT NUMBER

60786817

FIGURE TITLE

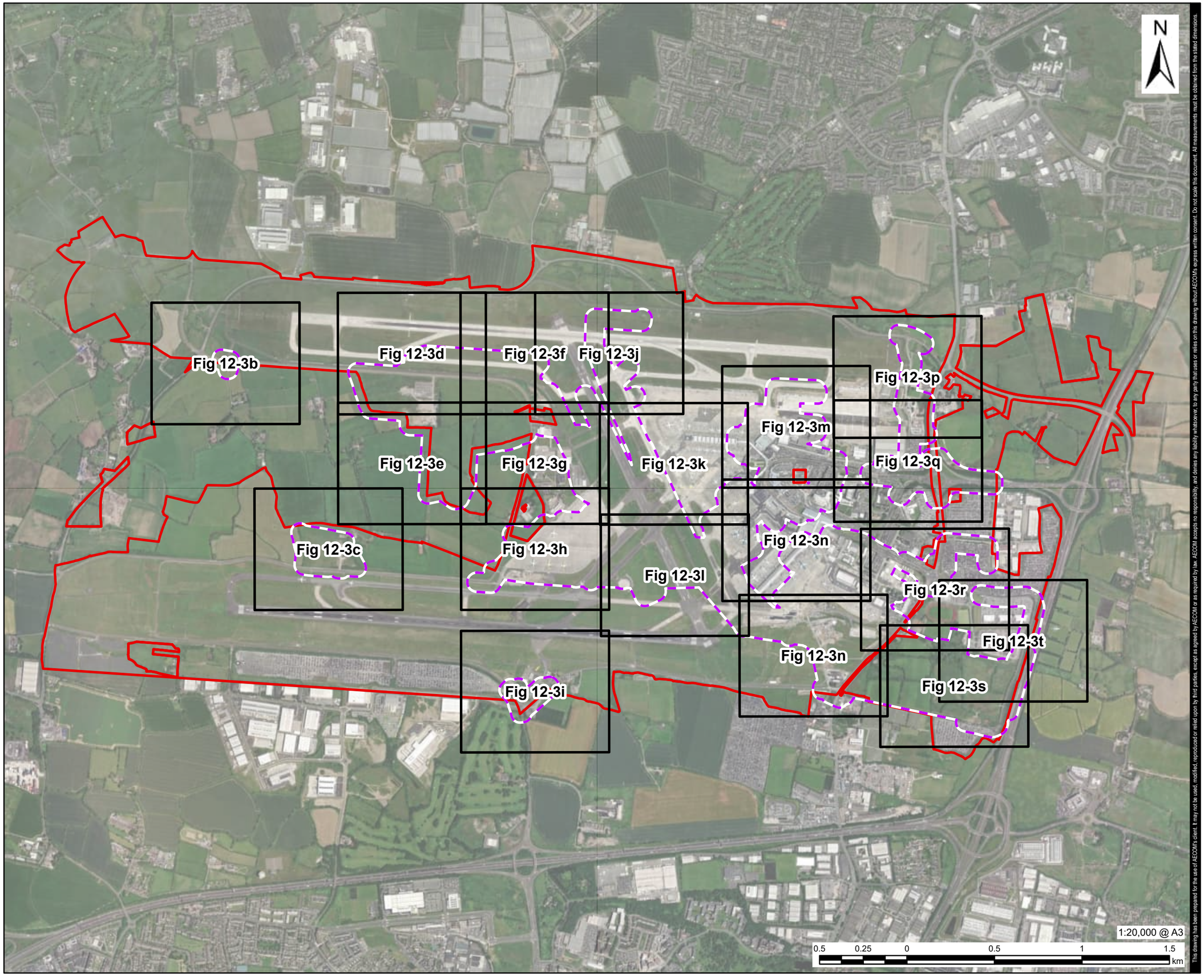
Survey Areas

FIGURE NUMBER

Figure 1

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LEGEND

- Page Reference
- Proposed Order Boundary
- Survey Area

NOTES

Earthstar Geographics

ISSUE PURPOSE

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FIGURE TITLE

Habitats and Invasive Species
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FIGURE NUMBER

Figure 2a

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- WL1 Hedgerows

NOTES

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ISSUE PURPOSE

FOR ISSUE

PROJECT NUMBER

60786817

FIGURE TITLE

Habitats and Invasive Species
(Page 2 of 20)

FIGURE NUMBER

Figure 2b

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- ED2 Spoil and bare ground
- ED3 Recolonising bare ground
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- WS1 Scrub
- Mosiac Habitat
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines

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ISSUE PURPOSE

FOR ISSUE

PROJECT NUMBER

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FIGURE TITLE

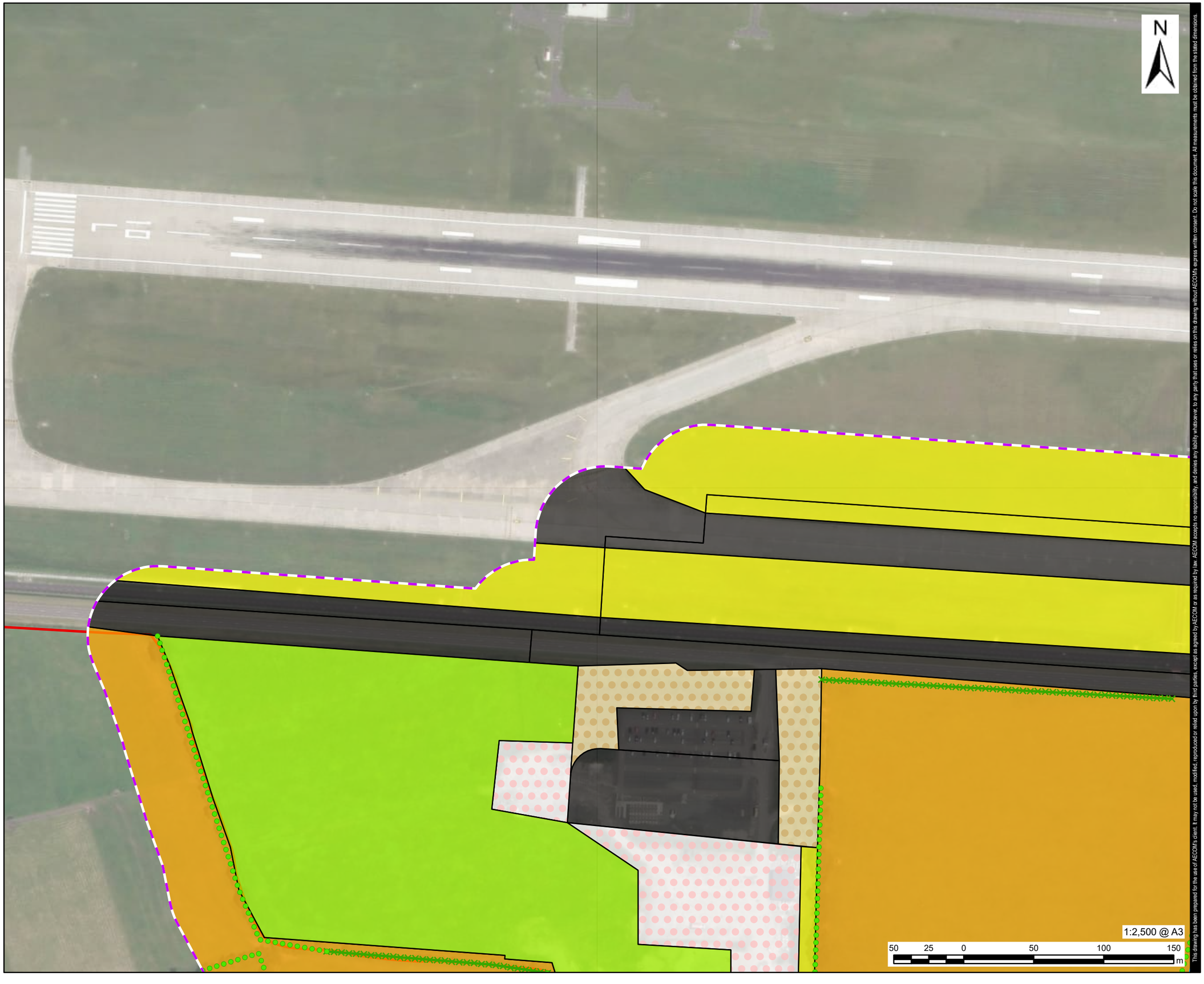
Habitats and Invasive Species
(Page 3 of 20)

FIGURE NUMBER

Figure 2c

Revision: P01 Drawn: AR Checked: CH Approved: AB Date: 2026-11-05

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- ED2 Spoil and bare ground
- ED3 Recolonising bare ground
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines

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ISSUE PURPOSE

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PROJECT NUMBER

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FIGURE TITLE

Habitats and Invasive Species
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FIGURE NUMBER

Figure 2d

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- ED2 Spoil and bare ground
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines

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FIGURE TITLE

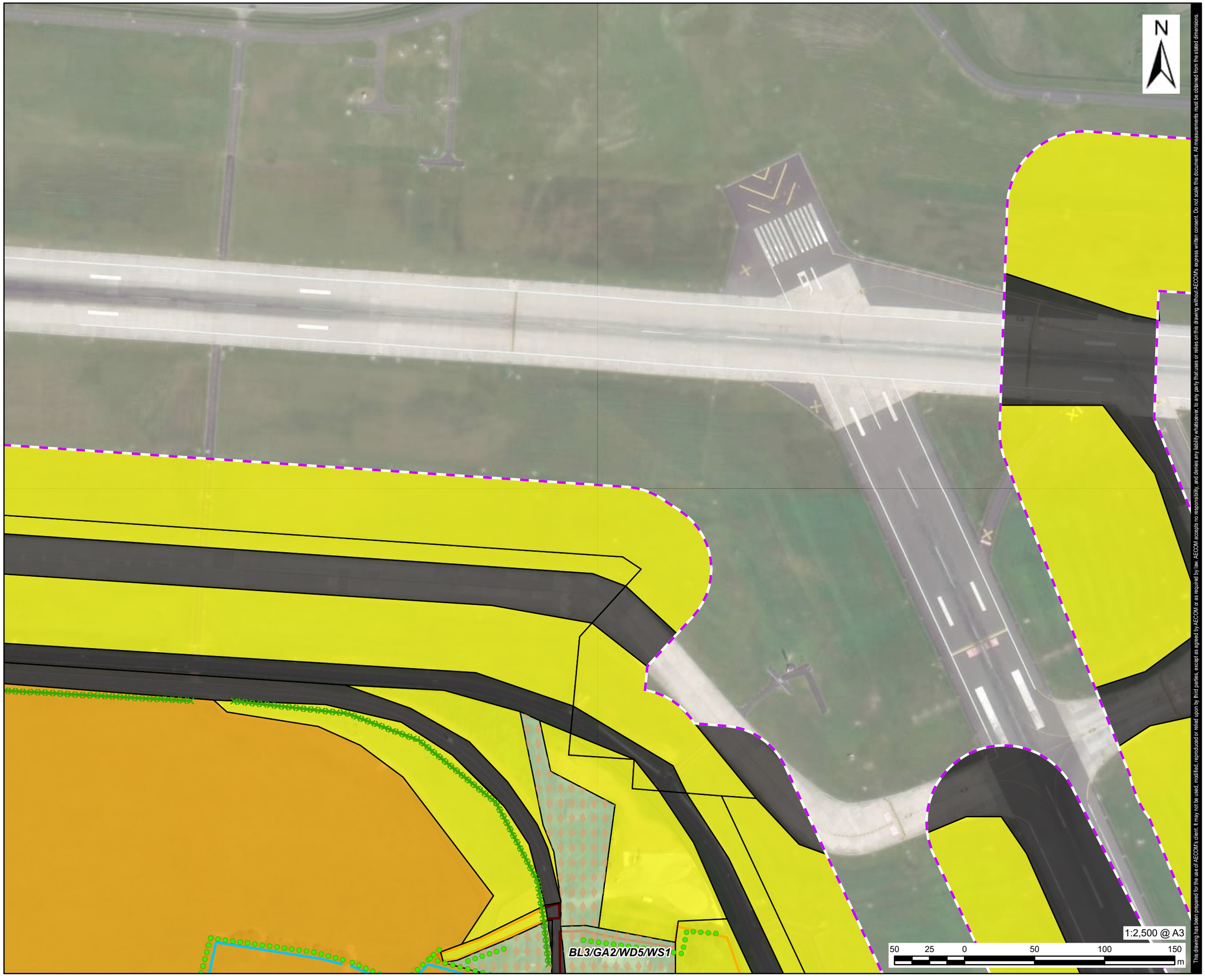
Habitats and Invasive Species
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FIGURE NUMBER

Figure 2e

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- Mosiac Habitat
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines

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ISSUE PURPOSE

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FIGURE TITLE

Habitats and Invasive Species
(Page 6 of 20)

FIGURE NUMBER

Figure 2f

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- Mosiac Habitat
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines

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FIGURE TITLE

Habitats and Invasive Species
(Page 7 of 20)

FIGURE NUMBER

Figure 2g

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- ED2 Spoil and bare ground
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- WL1 Hedgerows
- WL2 Treelines

Invasive Species

- Japanese knotweed

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FIGURE TITLE

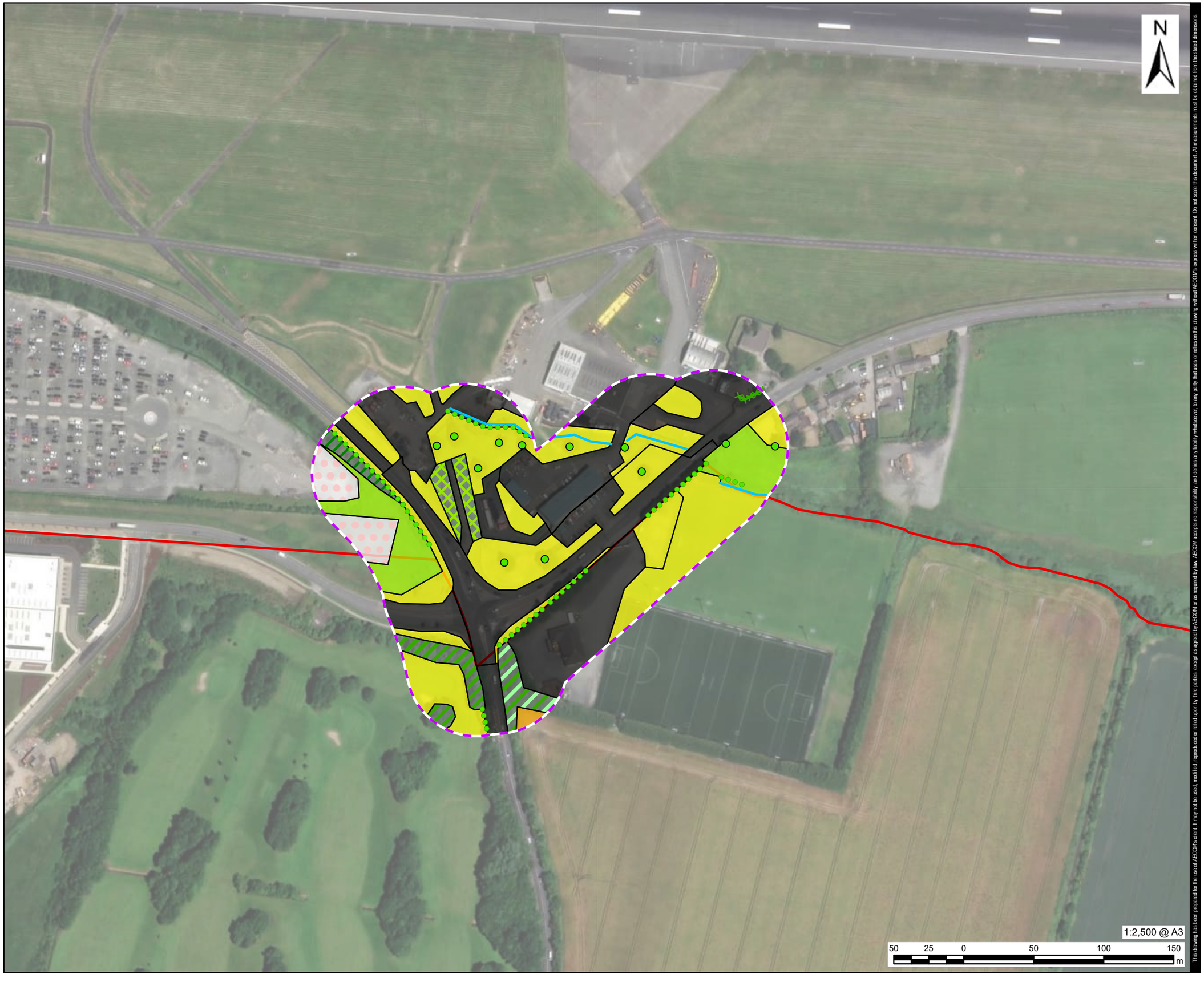
Habitats and Invasive Species
(Page 8 of 20)

FIGURE NUMBER

Figure 2h

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- ED2 Spoil and bare ground
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- WD1 (Mixed) broadleaved woodland
- WD2 Mixed broadleaved/conifer woodland
- WS1 Scrub
- WS2 Immature woodland
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines
- WD5 Scattered trees and parkland

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FIGURE TITLE

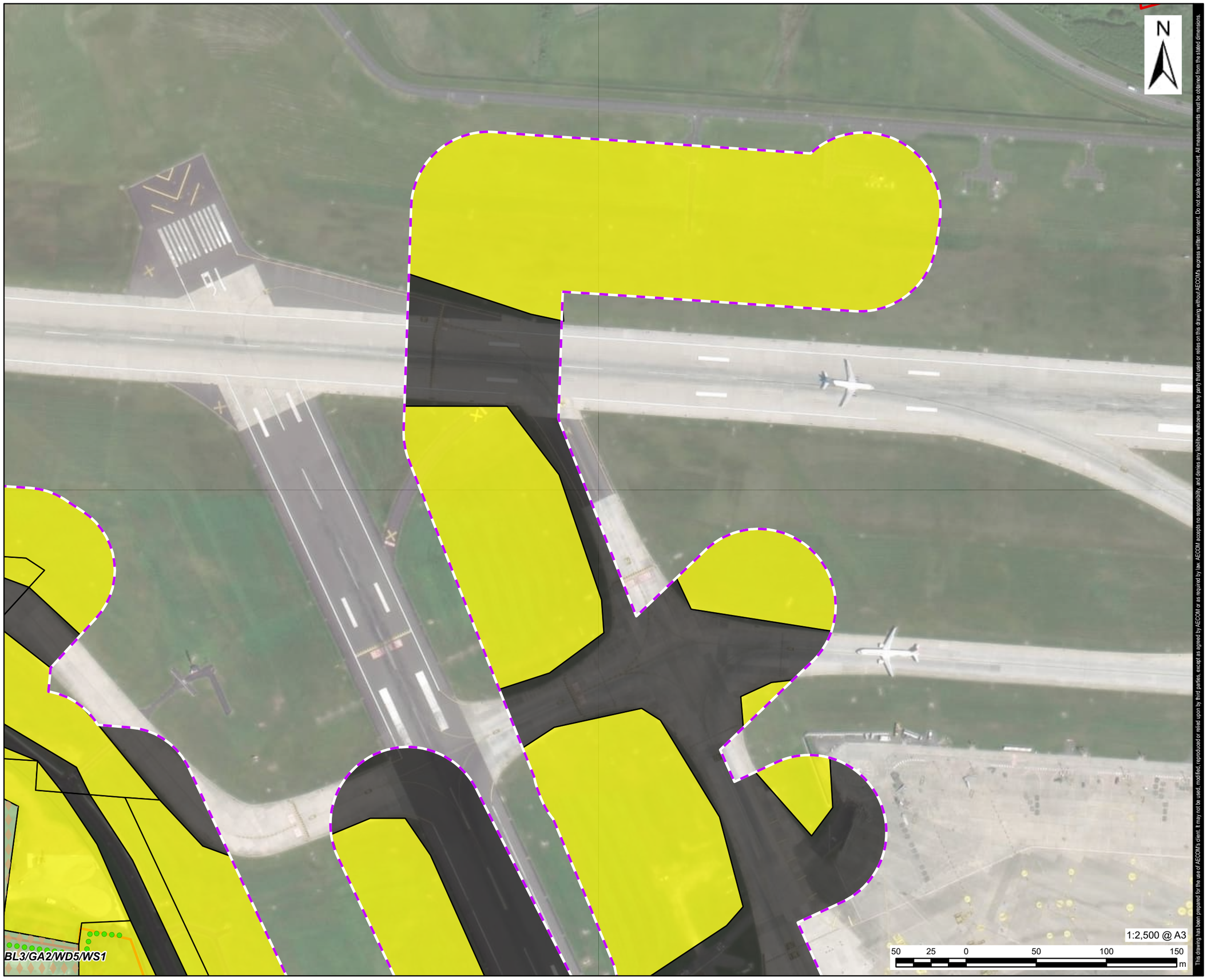
Habitats and Invasive Species
(Page 9 of 20)

FIGURE NUMBER

Figure 2i

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- GA2 Amenity grassland (improved)
- Mosiac Habitat
- WL2 Treelines

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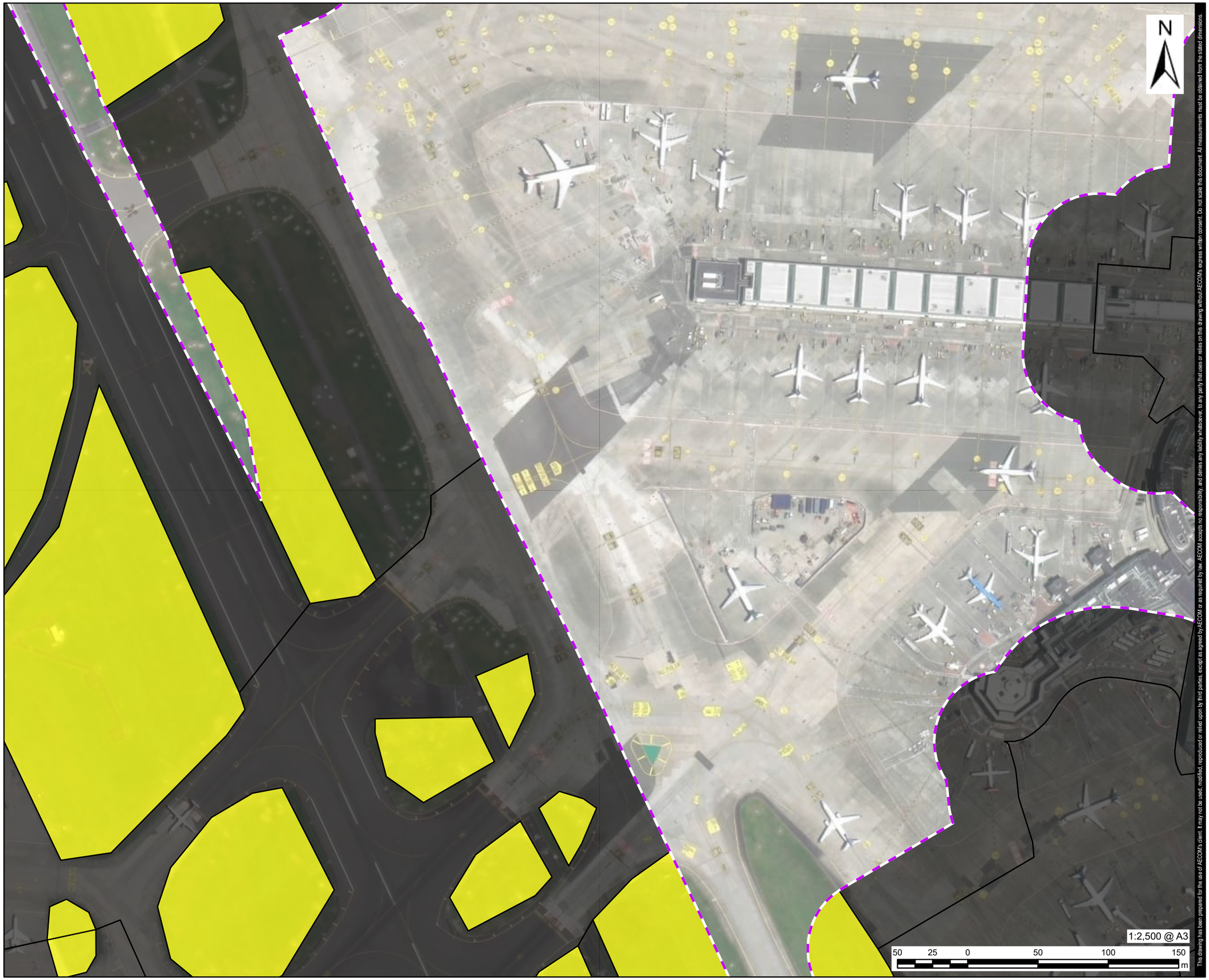
FIGURE TITLE

Habitats and Invasive Species
(Page 10 of 20)

FIGURE NUMBER

Figure 2j

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- GA2 Amenity grassland (improved)

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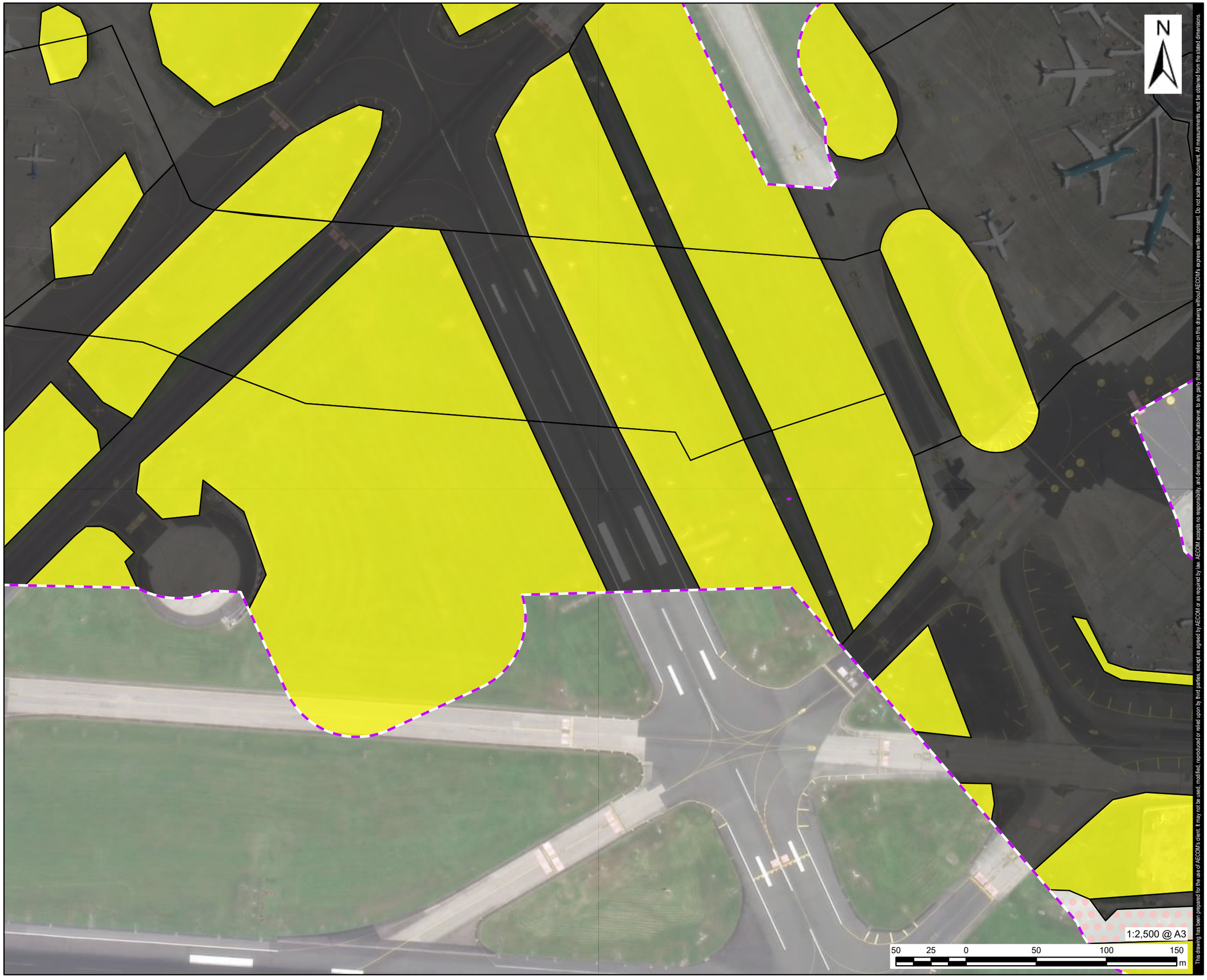
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FIGURE TITLE

Habitats and Invasive Species
(Page 11 of 20)

FIGURE NUMBER

Figure 2k



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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- ED2 Spoil and bare ground
- GA2 Amenity grassland (improved)

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FIGURE TITLE

Habitats and Invasive Species
(Page 12 of 20)

FIGURE NUMBER

Figure 2I

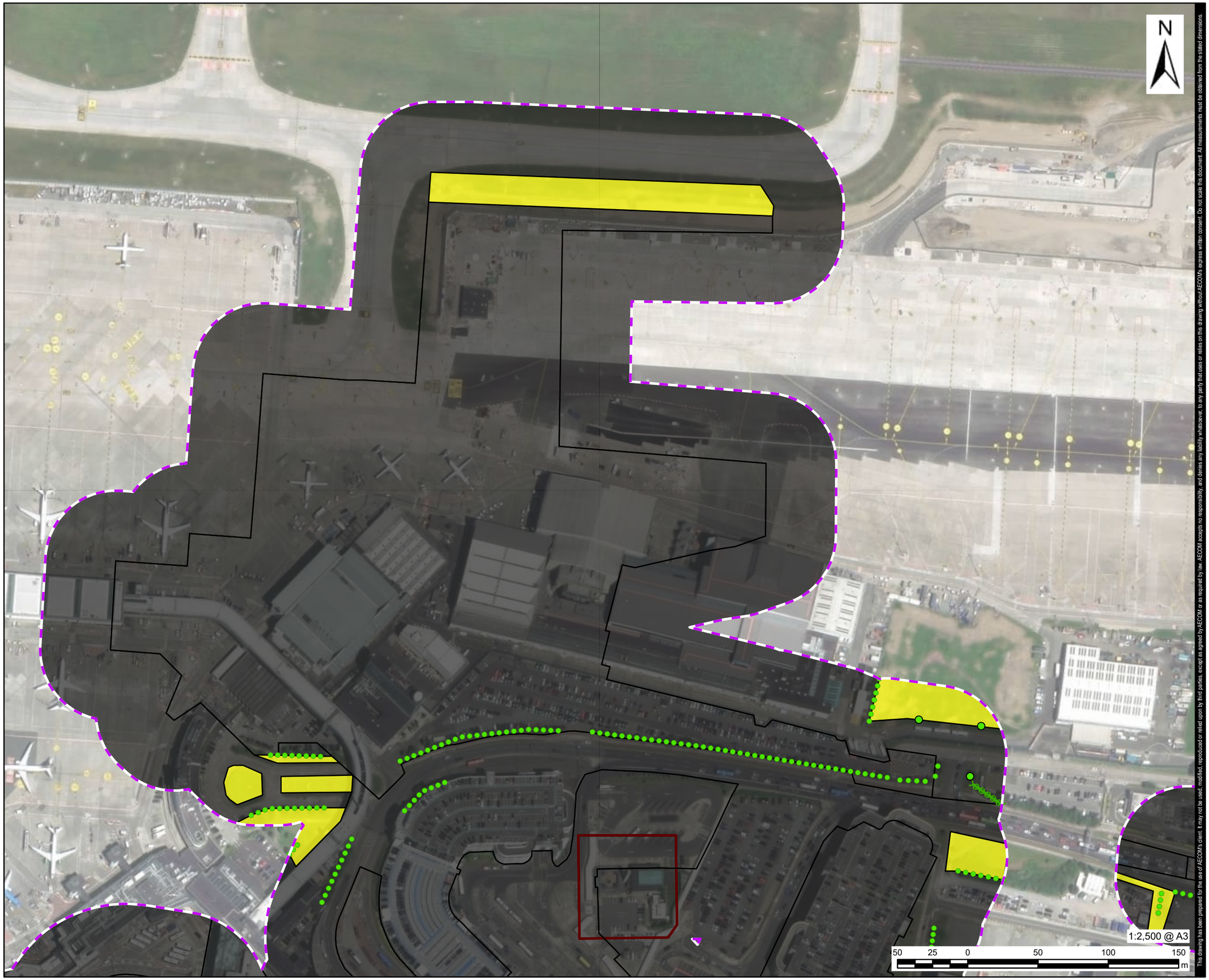
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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- GA2 Amenity grassland (improved)
- WL1 Hedgerows
- WL2 Treelines
- WD5 Scattered trees and parkland

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PROJECT NUMBER

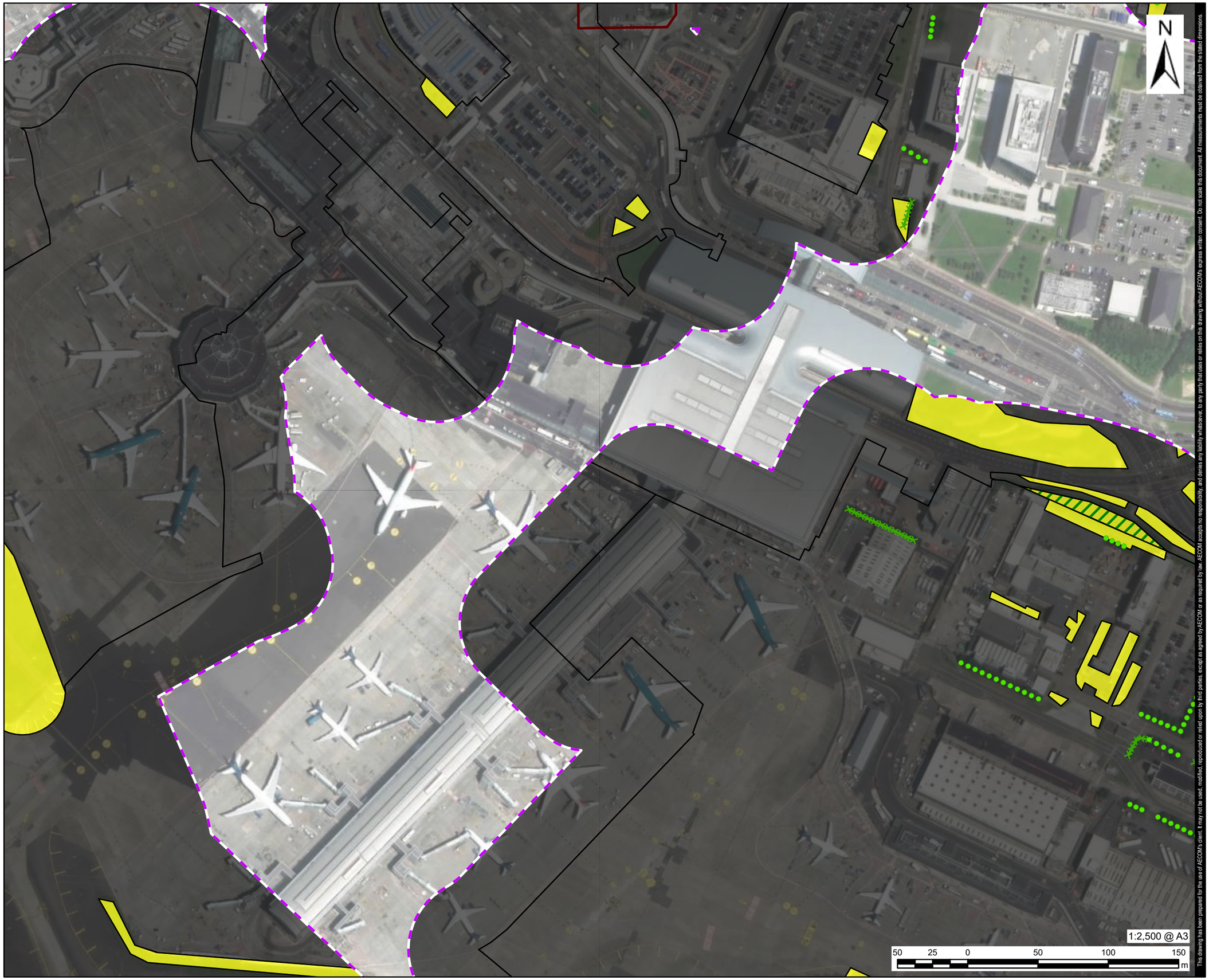
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FIGURE TITLE

Habitats and Invasive Species
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FIGURE NUMBER

Figure 2m



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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- GA2 Amenity grassland (improved)
- WS2 Immature woodland
- WL1 Hedgerows
- WL2 Treelines

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ISSUE PURPOSE

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FIGURE TITLE

Habitats and Invasive Species (Page 14 of 20)

FIGURE NUMBER

Figure 2n

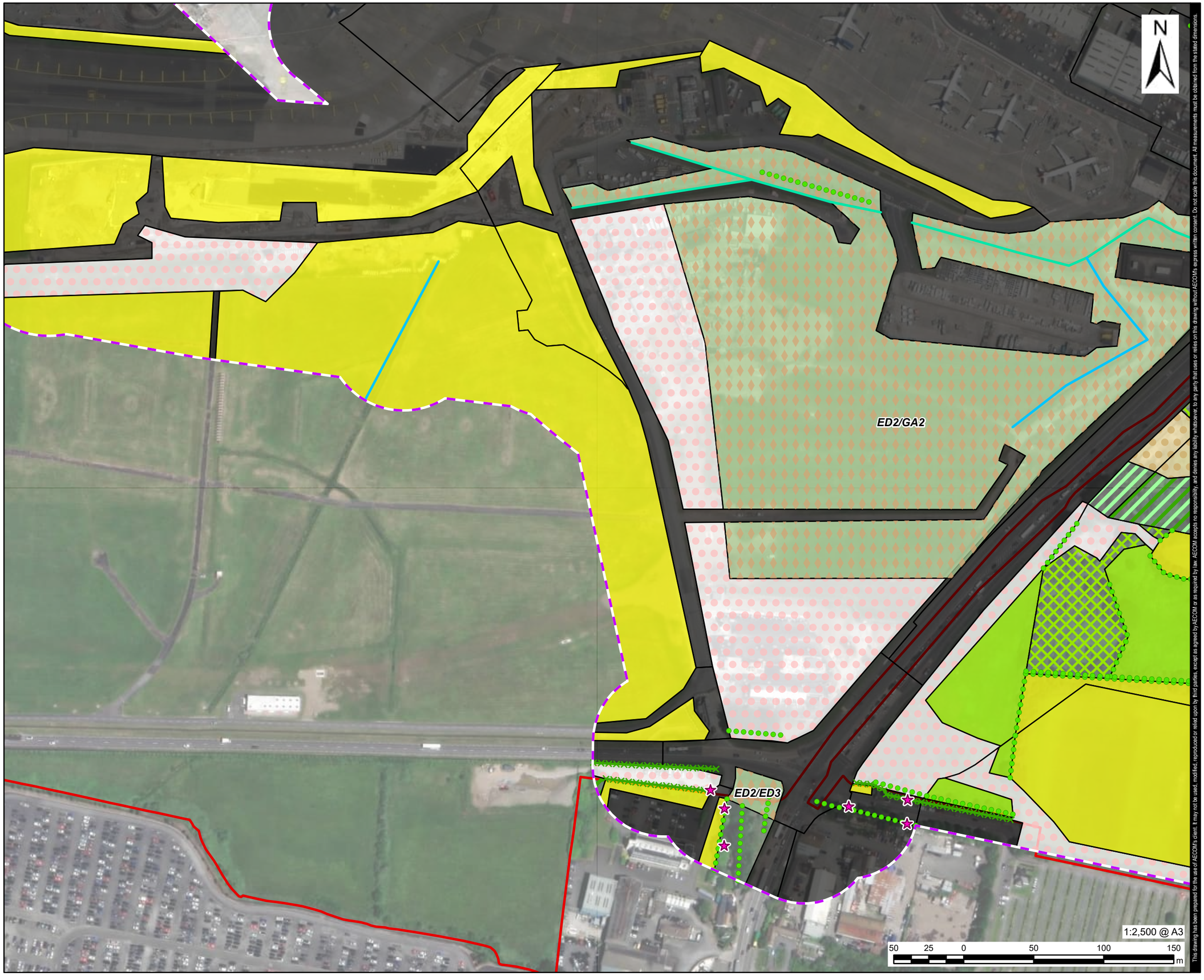
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LEGEND

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Fossitt Habitat Classification

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- ED2 Spoil and bare ground
- ED3 Recolonising bare ground
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- WD1 (Mixed) broadleaved woodland
- WD2 Mixed broadleaved/conifer woodland
- WD3 (Mixed) conifer woodland
- WS1 Scrub
- Mosiac Habitat
- FW2 Depositing/lowland rivers
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines

Invasive Species

- Cherry laurel

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FIGURE TITLE

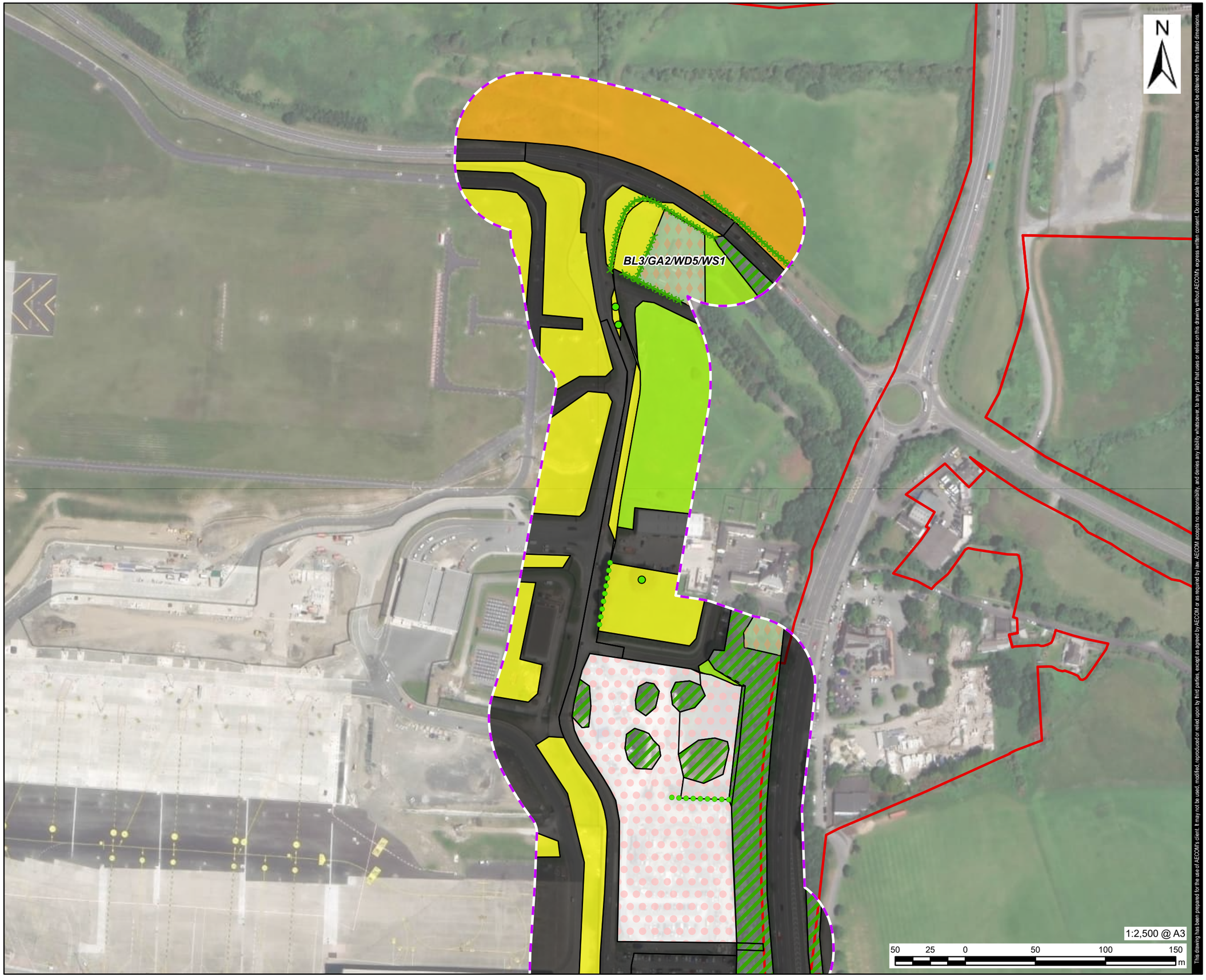
Habitats and Invasive Species
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FIGURE NUMBER

Figure 2n

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Dublin Airport (Passenger Capacity) Act 2026

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- ED2 Spoil and bare ground
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- WD1 (Mixed) broadleaved woodland
- Mosiac Habitat
- WL1 Hedgerows
- WL2 Treelines
- WD5 Scattered trees and parkland

NOTES

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60786817

FIGURE TITLE

Habitats and Invasive Species
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FIGURE NUMBER

Figure 2p

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- ED2 Spoil and bare ground
- GA1 Improved agricultural grassland
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- WD1 (Mixed) broadleaved woodland
- WL1 Hedgerows
- WL2 Treelines
- WD5 Scattered trees and parkland

Invasive Species

- Cherry laurel

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FIGURE TITLE

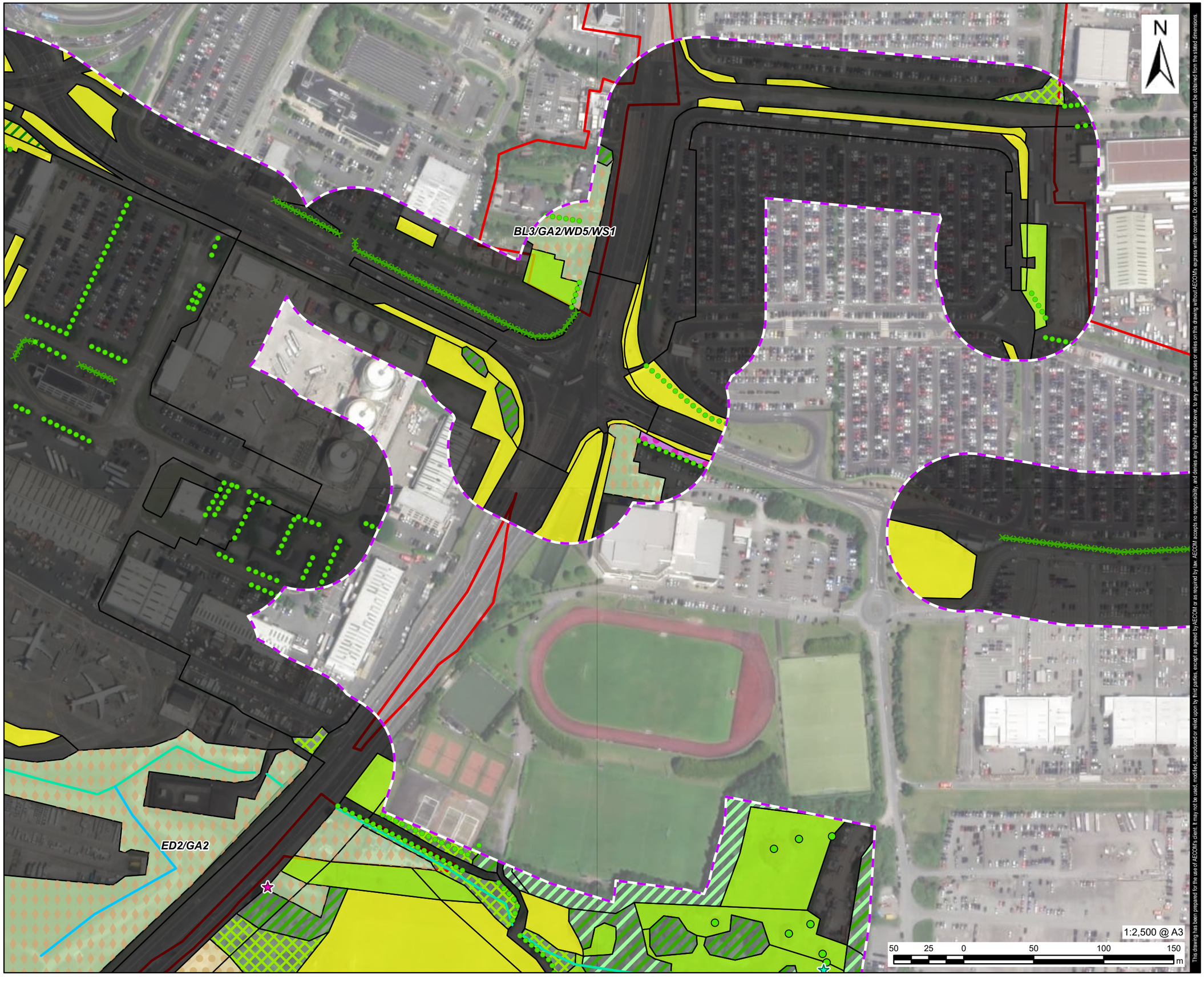
Habitats and Invasive Species (Page 17 of 20)

FIGURE NUMBER

Figure 2q

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BC4 Flower beds and borders
- BL3 Buildings and artifical surfaces
- ED3 Recolonising bare ground
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- WD1 (Mixed) broadleaved woodland
- WD2 Mixed broadleaved/conifer woodland
- WD3 (Mixed) conifer woodland
- WS1 Scrub
- WS2 Immature woodland
- Mosiac Habitat
- FW2 Depositing/lowland rivers
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines
- WD5 Scattered trees and parkland

Invasive Species

- Cherry laurel
- Giant hogweed

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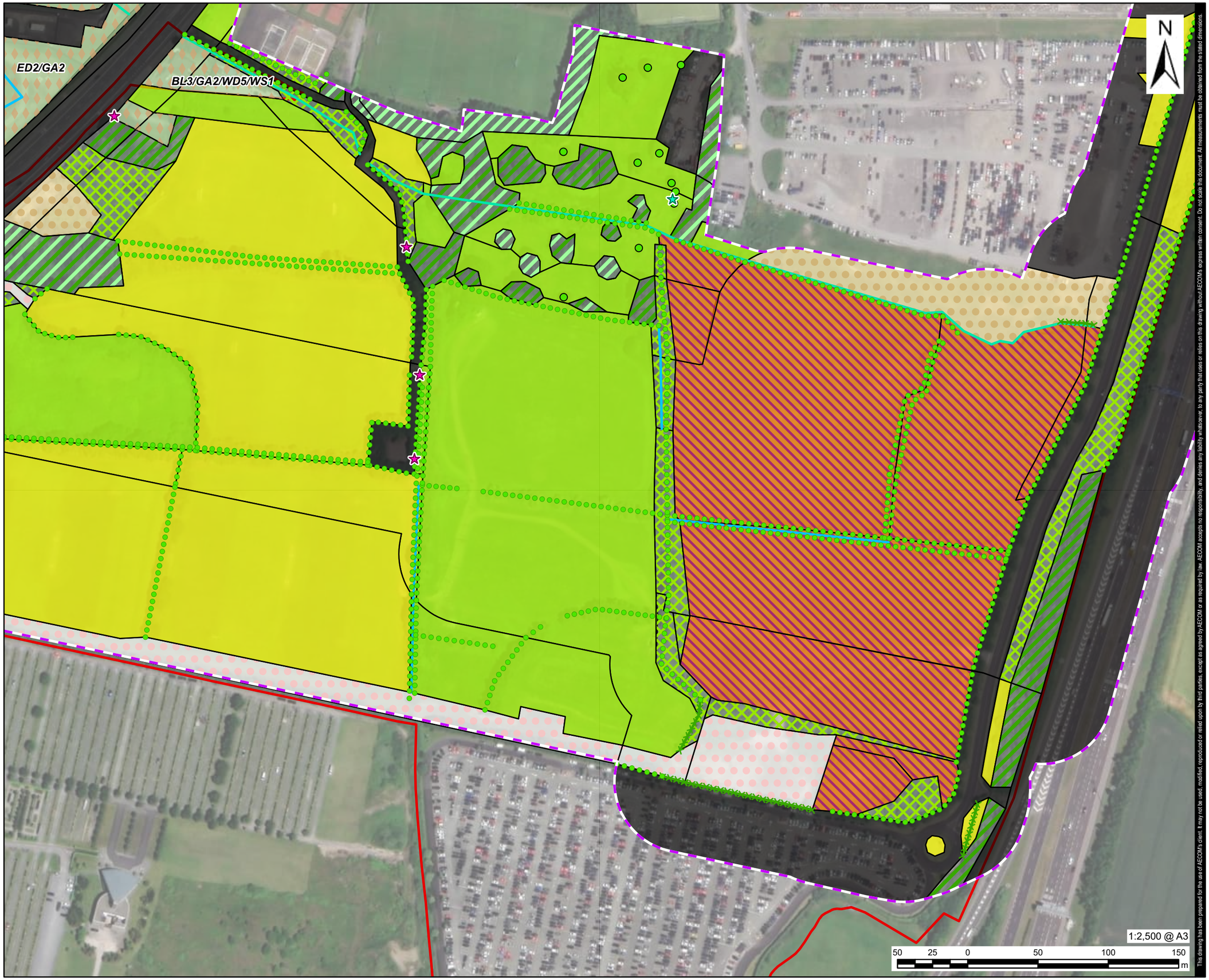
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FIGURE TITLE

Habitats and Invasive Species
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FIGURE NUMBER

Figure 2r



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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BL3 Buildings and artifical surfaces
- ED2 Spoil and bare ground
- ED3 Recolonising bare ground
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- GS4 Wet grassland
- WD1 (Mixed) broadleaved woodland
- WD2 Mixed broadleaved/conifer woodland
- WD3 (Mixed) conifer woodland
- WS1 Scrub
- Mosiac Habitat
- FW2 Depositing/lowland rivers
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines
- WD5 Scattered trees and parkland

Invasive Species

- Cherry laurel
- Giant hogweed

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FIGURE TITLE

Habitats and Invasive Species
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FIGURE NUMBER

Figure 2s

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LEGEND

- Proposed Order Boundary
- Survey Area

Fossitt Habitat Classification

- BC4 Flower beds and borders
- BL3 Buildings and artifical surfaces
- ED3 Recolonising bare ground
- GA2 Amenity grassland (improved)
- GS2 Dry meadows and grassy verdges
- GS4 Wet grassland
- WD1 (Mixed) broadleaved woodland
- WD2 Mixed broadleaved/conifer woodland
- WD3 (Mixed) conifer woodland
- WS1 Scrub
- Mosiac Habitat
- FW2 Depositing/lowland rivers
- FW4 Drainage ditches
- WL1 Hedgerows
- WL2 Treelines
- WD5 Scattered trees and parkland

Invasive Species

- Giant hogweed

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FIGURE TITLE

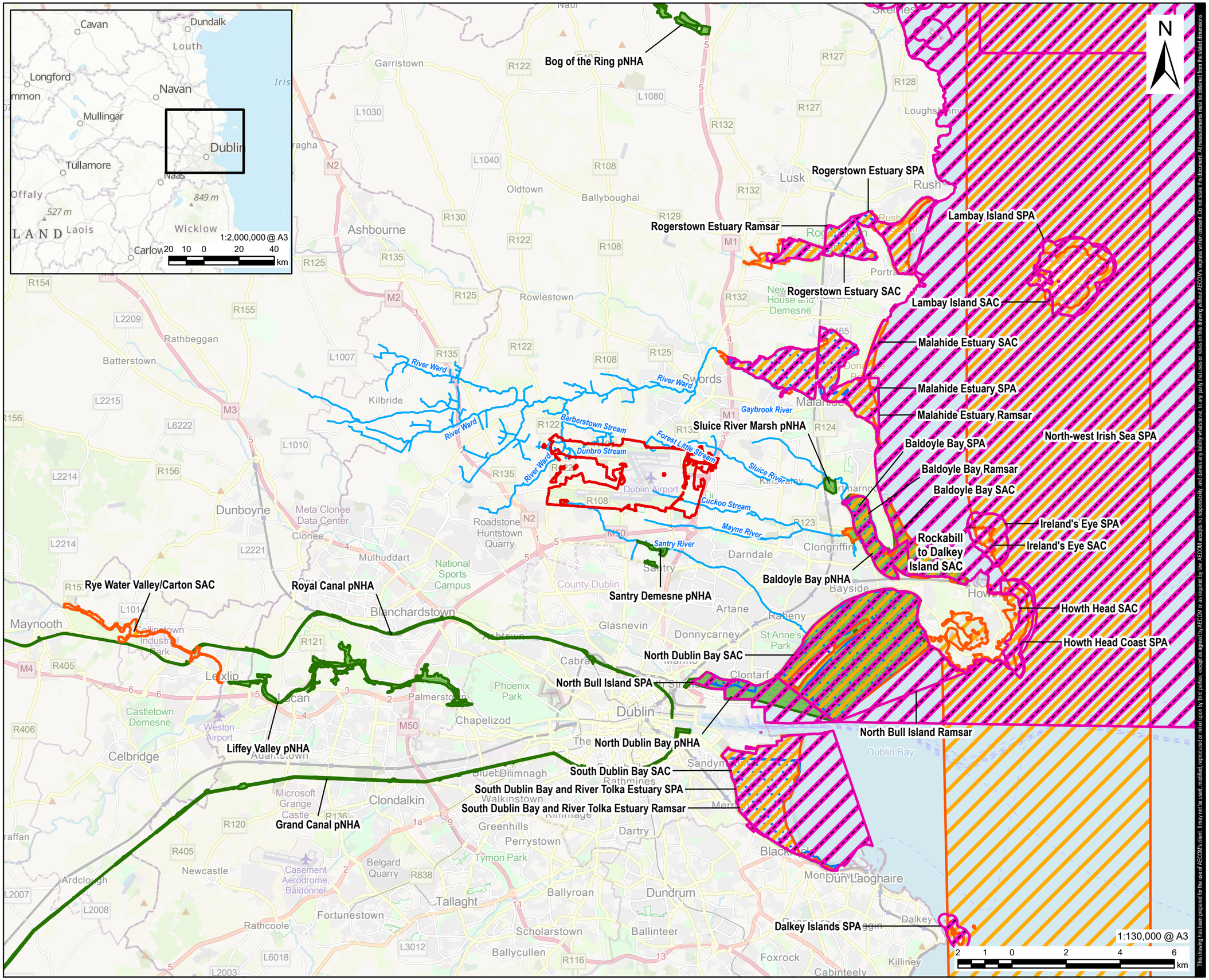
Habitats and Invasive Species
(Page 20 of 20)

FIGURE NUMBER

Figure 2t

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LEGEND

- Proposed Order Boundary
- Watercourse

Designated Sites

- Ramsar Site
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- Proposed Natural Heritage Area (pNHA)

NOTES

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FIGURE TITLE

Designated Sites and Watercourses

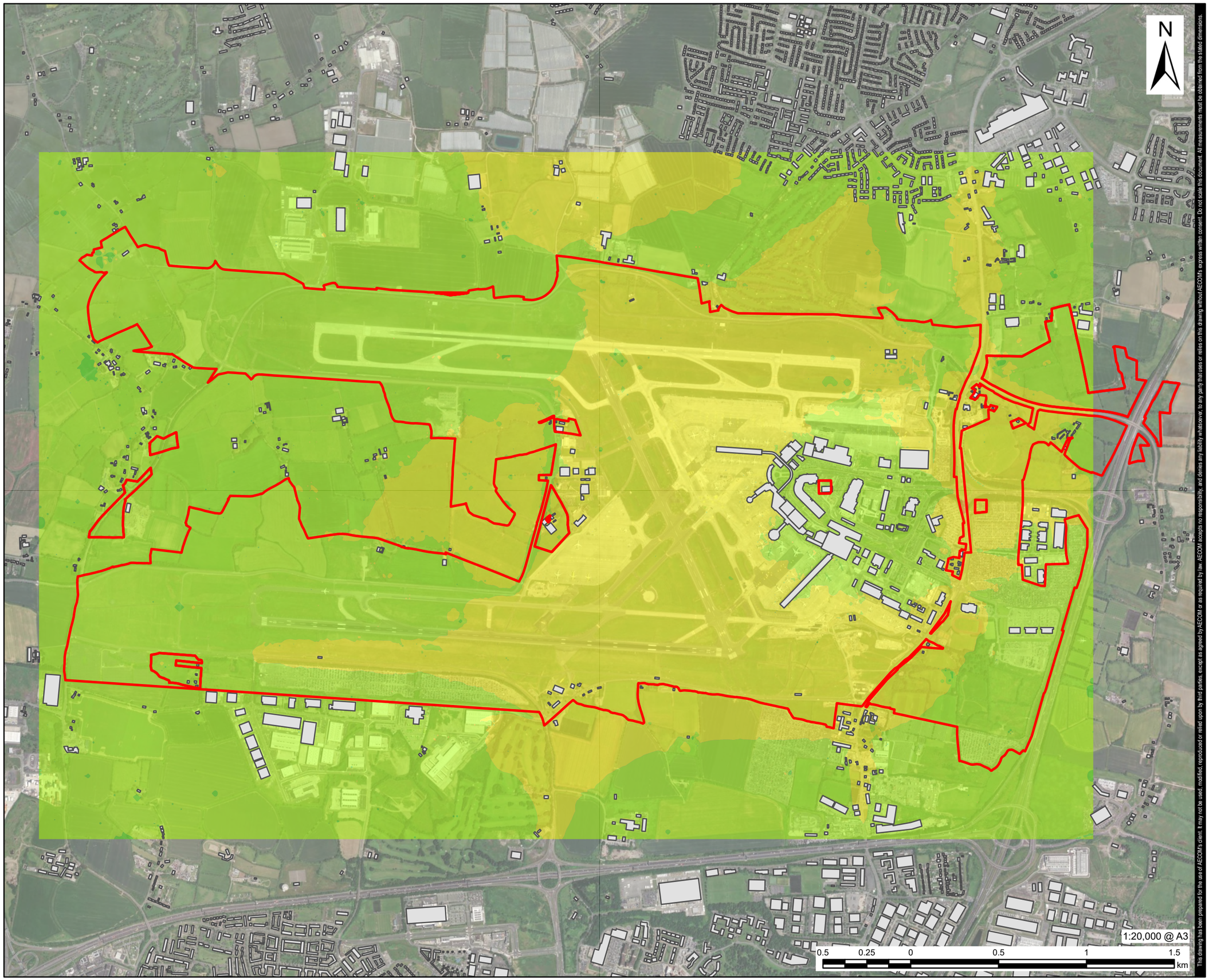
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Figure 3

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LEGEND

- Proposed Order Boundary
- Building

2029 Proposed Operations (40.0 MPPA) vs 2029 Permitted Operations (32.MPPA) Lden Road Traffic Noise Contours (dB)

- -3 - -1
- -1 - 0
- 0 - 0.1
- 0.1 - 1
- 1 - 3
- 3 - 5
- ≥ 5

NOTES

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PROJECT NUMBER

60786817

FIGURE TITLE

2029 Proposed Order vs 2029 Do Nothing Lden Road Traffic Noise Contours

FIGURE NUMBER

Figure 4

Appendix A Baseline Studies and Surveys

Introduction

This Appendix provides details of the desk-based study undertaken in 2026 to determine the baseline conditions relevant to the Proposed Order. The geographical extent of the desk study varied according to the ecological feature and data source considered, as set out in **Error! Reference source not found.**Table A - 1, which summarises the data sources and study areas used.

Desk Study

Table A - 1:Desk study data sources

Data source	Date last accessed	Data obtained
Environmental Protection Agency (EPA) Maps website (https://gis.epa.ie/EPAMaps/)	July 2026	• Information on the location of European sites relative to the Proposed Order
National Parks and Wildlife Service (NPWS) Protected Sites in Ireland website (https://www.npws.ie/protected-sites)	July 2026	• Data on the QI/SCI of relevant European sites • Conservation Objectives for relevant European sites • Pressures/threats to relevant European sites
NPWS map viewer	July 2026	• Records of important ecological features in the ZoI
APIS website (https://www.apis.ac.uk/)	July 2026	• Information on airborne pollutants • Critical level/load data
The Status of European Union (EU) Protected Habitats and Species in Ireland (Article 17 Report) (https://www.npws.ie/publications/article-17-reports/article-17-reports-2019)	July 2026	• Status of QI/SCI habitats and species in Ireland
Fingal County Council Planning Enquiry website (https://www.fingal.ie/view-or-search-planning-applications)	July 2026	• Planning applications potentially relevant to the Proposed Order.
National Planning Application Database (https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de)	July 2026	• Planning applications potentially relevant to the Proposed Order.
Ordnance Survey Ireland maps and aerial photography[9]	June 2026	• Habitats and connectivity relevant to interpretation of planning policy and potential protected/important species constraints
National Biodiversity Data Centre [10]	July 2026	• Records of important ecological features within 2km
BirdWatch Ireland IWeBs data[11]	July 2026	• Records of waterbirds in IWeBs sub-site locations
Dublin Airport North Runway (10L/28R) Relevant Action Application EIAR (Dublin Airport, 2021)	June 2026	• EIAR for the North Runway (10L/28R) development, which includes terrestrial biodiversity and aquatic biodiversity chapters
Coastal Waterbird Disturbance Study for daa at Rogerstown Estuary SPA and Baldoyle Bay SPA (RPS, 2018)	June 2026	• Information from RPS on aircraft disturbance on birds at Rogerstown Estuary SPA and Baldoyle Bay SPA in 2016 and 2017
Coastal Waterbird Disturbance Study for daa at Malahide Estuary SPA and Baldoyle Bay SPA (Appendix B)	June 2026	• Information on aircraft disturbance on birds at Malahide Estuary SPA and Baldoyle Bay SPA from surveys undertaken in 2024

[9] Ordnance Survey Ireland (OSI). Available at: https://www.osi.ie/

10 Biodiversity Maps. Available at: https://maps.biodiversityireland.ie/

[11] BirdWatch Ireland - Research & Monitoring. Available at: https://birdwatchireland.ie/our-work/surveys-research/research-monitoring/

Data source	Date last accessed	Data obtained
Airfield Drainage Project EIAR (in particular Appendix A Ornithology Report, Appendix V Site Survey, Appendix 9.2 Aquatic Survey) Nicolas O'Dwyer (2023)	June 2026	• Information from Jacobs on bird surveys and from Altemar on habitat surveys carried out for the Airfield Drainage project
A Water Quality and Fisheries Study of the Rivers and Stream Draining Dublin Airport in North County Dublin Using Macroinvertebrate Collections (Aquatic Survey Unit (UCC), (2020a))	June 2026	• Information from Aquatic Service Unit (UCC) on water quality and fisheries of rivers and streams draining Dublin Airport
Marine Intertidal Surveys at Three Protected Estuaries: Malahide Estuary, Baldoyle Estuary, and Dublin Bay (Aquatic Survey Unit (UCC), (2020b))	June 2026	• Information from Aquatic Services Unit (UCC) on habitats, species, and marine community types at Malahide Estuary, Baldoyle Estuary, and Dublin Bay
Dublin Airport Cargo Relocation Environmental Impact Assessment Report (EIAR) and associated survey data (AECOM, 2025)	June 2026	• Survey information on bats otter, badger, breeding birds and other important species at a proposed cargo facility on the southeastern corner of the Dublin Airport Site boundary.
Dublin Infrastructure Application Environmental Impact Assessment Report (EIAR) and associated survey data (AECOM, 2024)	June 2026	• Survey information on habitats, bats, otter, badger, amphibians, breeding birds and other important species within and adjacent to the Dublin Airport Site boundary.

Field survey

Baseline ecological conditions relevant to this Report to Inform AA Screening and NIS were established from targeted field surveys and information from published sources (Table 3-2).

The scope of field surveys described in this assessment was informed by the guidance contained within published documents referenced in the relevant sections below and in Table 3-3, the results of the desk study, and the results of completed ecological field surveys. Given the European sites in question, relevant surveys comprised bird surveys and the habitats they use around the airfield.

The ecology survey baseline includes comprehensive data from previous applications including the Dublin Airport Infrastructure Application (2024); this survey data includes all areas within the Dublin Airport Site boundary. Additionally, ecology surveys completed in 2025 provided an update to the Dublin Airport Infrastructure baseline and inform a proposed cargo facility application (2025).

A summary of the bird surveys with their scope and rationale to inform this assessment are presented in Table 3-3. A description of specific survey methods used for the habitats (used by birds) and bird surveys of relevance to this assessment is provided under the following sub-headings.

Table A - 2:Summary of field survey to inform this assessment

Ecological Survey	Dates	Scope/Survey Area	Rationale	Source
Breeding bird survey	Mid-April to early-August 2019 (four visits) Late May to late June 2022 (two visits) Mid-May to late June 2024 (three visits) Late July to early August 2025 (two visits)	A modified version of the Common Bird Census (CBC) (Gilbert *et al.* 1998) was used to survey the breeding bird assemblage where potentially suitable habitat for breeding birds was present. Six survey visits were carried out between April 2019 and June 2022. Survey Locations (SLs) surveyed comprised: • SL4 • SL9 • SL10 Other Survey Locations were not surveyed because these locations were either not accessible, not identified as part of the Proposed Order at the time of survey and/or did not comprise suitable habitat for breeding birds. Updated surveys were carried out in 2024 and 2025 within the Dublin Airport Site boundary plus a 50m buffer, in accessible lands potentially suitable for breeding birds. Three survey visits were carried out between May and June 2024 and two between July and August 2025. SLs surveyed comprised all those considered to contain suitable habitat for breeding birds, as follows: • SL2 • SL4 • SL6 • SL9 • SL10 • SL11 • SL12	Followed a modified version CBC methodology for breeding bird surveys. The survey area was determined based on an understanding of the habitats within the Dublin Airport Site boundary and the potential impacts on birds.	Bird Technical Appendix (Appendix 12-4, Dublin Airport (Passenger Capacity) Act 2026 EIAR).
Non-breeding bird survey	Late November 2018 to early March 2019 Early September 2019 to mid-March 2020 Late January and early February 2021 Mid-October 2022 to late March 2023	Non-breeding bird surveys adopted the method used for the Irish Wetland Bird Survey (I-WeBS), as described in the BirdWatch Ireland Counter Manual (Birdwatch Ireland & NPWS, undated), which itself is based on the 'look-see' method described by Bibby *et al.* (2000). Surveys of waterbirds[12] and other non-breeding bird species present (denoted herein as raptors and 'farmland birds') were carried out during the non-breeding bird season, which is taken to be between October and March (inclusive). Surveys were typically carried out monthly during the non-breeding season between 2018 to 2025; however, some months were not surveyed due to limitations such as Covid-19, access restrictions, and programme timings. Surveys comprised of all land within the Dublin Airport Site boundary that was considered suitable for non-breeding birds plus survey buffers surrounding. Survey buffers around the Dublin Airport Site	Followed I-WeBs methodology for non-breeding bird surveys. The survey area was determined based on an understanding of the habitats within the Dublin Airport Site boundary potential sensitive sites within the ZoI of the Dublin Airport Site boundary and the potential impacts from on birds.	Bird Technical Appendix (Appendix 12-4, Dublin Airport (Passenger Capacity) Act 2026 EIAR)

[12] Waterbirds comprise wildfowl (ducks, geese and swans), waders, rails, divers, grebes, cormorants, herons, gulls and terns.

Ecological Survey	Dates	Scope/Survey Area	Rationale	Source
	Mid-September 2024 to early March 2025 January 2024 to December 2024*	boundary varied from 100m to 1.5km in 2018-21, while a 500m buffer zone was used in in 2022-23 and 2024-25, Further details are presented in (Appendix 12-4, Dublin Airport (Passenger Capacity) Act 2026 EIAR. *Additional non-breeding bird surveys were undertaken between January to March 2024 and October to December 2024 to monitor coastal waterbirds at Baldoyle Bay SPA and Malahide Estuary SPA. The surveys were typically stratified according to tide times and focussed on high and low tides, to investigate use of the area by birds under different tidal conditions.		

Habitats

For ease of description, the airfield was divided up into useful sectors and survey locations. These are presented in Figure 1 and referred to extensively in this section and throughout the remainder of this document.

Habitats within the Dublin Airport Site boundary were surveyed and mapped on 04 and 05 June, 09 July, 01 August 2019, 23 and 24 June 2020, 09 May 2023 and 23 and 31 May, and 04, 07, and 17 and 19 June 2024 and 13 and 14 October 2025. The habitat surveys completed in May and June 2024 were carried out to a finer scale and linear boundary habitats were accurately defined and mapped (including narrow areas of scrub along treelines, and double treelines)[13]. The surveys completed in 2025 provided an update survey to confirm the status of the habitats within the Proposed Order following the detailed surveys in previous years. The surveys were carried out following the *Best Practice Guidance for Habitat Survey and Mapping* (Smith *et al.* 2011) and habitats were classified according to *A Guide to Habitats in Ireland* (Fossitt, 2000).

Habitats were mapped at an appropriate scale of 1:2,500. Notes were made for each habitat of dominant, typical and important plant species, and any relevant ecological characteristics (particularly where relevant to habitat condition), which reflect the conditions at the time of survey. Nomenclature for plant species followed that of Stace (2019), and this is also adopted in this chapter. As part of the update habitat survey in May and June 2024, plant species lists were collected, and a detailed classification of hedgerows and treelines was completed based on the *Hedgerow Appraisal System (HAS): Best Practice Guidance on Hedgerow Surveying, Data Collection and Appraisal* (Foulkes *et al.* 2013). The HAS criteria were used to assess the significance (term used in HAS guidance but not significant in EIA terms) and condition of hedgerows. This method was also extended and adapted based on professional judgement in the field to assess the HAS significance and condition of treelines.

Non-breeding waterbirds

Non-breeding bird surveys were carried out within the survey areas set out in Table 3-3 during the following periods:

- between November 2018 and March 2019
- between September 2019 and March 2020
- in January and February 2021
- Between October 2022 and March 2023
- Between September 2024 and March 2025

Survey dates and details are provided in Bird Technical Appendix 12-4, Dublin Airport (Passenger Capacity) Act 2026 EIAR.

Non-breeding bird survey adopted the method used for the Irish Wetland Bird Survey (I-WeBS), as described in the Counter Manual for the scheme (Birdwatch Ireland & NPWS, undated), which itself is based on the 'look-see' method described by *Bibby et al.* (2000). Non-breeding bird surveys were conducted around the high or low tide times where possible, reflecting best practice (e.g. as per British Trust for Ornithology research Armitage *et al.* (2002).

Field surveys involved a combination of driven transect and Vantage Point (VP) watches. A driving route was established outside airside[14] lands along which VPs were selected to visually assess fields. All VPs covering airside lands and land within Survey Location boundaries were surveyed for a minimum of ten minutes. Surveyors alternated start locations between surveys to reduce bias in observer effort. The majority of airside fields could be viewed from the driven transect route and VP locations, so airside access wasn't necessary for non-breeding bird surveys.

Non-breeding waterbird disturbance surveys

Between June 2016 and December 2017, and in April and May 2018, VP surveys were conducted by RPS on behalf of the Applicant at Baldoyle Bay SPA and Rogerstown Estuary SPA. These surveys are reported in RPS (2018). Surveys during this period covered the time when Dublin Airport was at its previous busiest time prior to the Covid-19 pandemic. The aims of the surveys were to:

[13] Chapter 12: Biodiversity Dublin Airport (Passenger Capacity) Act 2026 EIAR
[14] Landside refers to areas in the vicinity of the Dublin Airport that do not require strict security clearance through the airport to enter. Airside refers to areas within the Dublin Airport that do require strict security clearance to through the airport to enter.

- observe disturbance events and behavioural changes of waterbirds in response to over-flying aircraft; and,
- determine whether or not over-flying aircraft disturb waterbirds at these designated sites.

A total of 252 hours of survey were conducted during the survey period, covering a range of weather conditions, tidal states and times of day. During the VP watches, surveyors recorded all disturbance events, noting the time, source of disturbance, species affected, and the number of birds involved. The response of waterbirds was recorded on a scale of 0-3:

- 0 – no behavioural change;
- 1 – behavioural change (e.g. vigilance or alarm call) but no flight;
- 2 – flew but soon returned to the site; and,
- 3 – flew and abandoned the site.

The RPS surveys were then repeated by AECOM between January and March 2024, but in this period, surveys was carried out at Baldoyle Bay SPA (as done by RPS) and Malahide Estuary SPA. Surveys in 2024 were carried out from Malahide Estuary, rather than Rogerstown Estuary, as the site is closer to Dublin Airport. A single suitable VP location was adopted at each of Baldoyle Bay and Malahide Estuary which allowed for maximum visual coverage of the survey area. Each VP watch was carried out for a duration of six hours on each survey visit. During the vantage point watches, the observer recorded all disturbance events which involved recording the time, disturbance source, species disturbed, and numbers of birds affected, in the same way as adopted by RPS.

A total of eighteen hours were carried out at each site during the survey period, totalling a further 36 hours of non-breeding waterbird disturbance survey. A full report into this bird disturbance survey is presented in Appendix D of this assessment.

Breeding birds

A modified version of the Common Bird Census (CBC), as described in Gilbert *et al.* (1998), was used to survey the breeding bird assemblage within the survey areas set out in Table 3-3. Breeding bird surveys were carried out during the following periods (as detailed in Table 3-4):

- between April and August 2019 (four survey visits)
- in May and June 2022 (two survey visits)
- in May and June 2024 (three survey visits)
- In July and August 2025 (two survey visits)

These breeding bird survey visits were considered to provide an adequate survey effort and is common practice, rather than the ten visits prescribed by CBC methodology. This survey effort provides a reliable indication of the numbers of breeding birds in the survey area to determine the breeding bird assemblage and to identify species which may potentially be affected by the Proposed Order. All surveys were carried out during favourable weather conditions of light winds, with no heavy precipitation and good visibility. Surveys were carried out where possible in the early morning, avoiding the time period immediately after sunrise.

A pre-determined transect route was walked which allowed all parts of this survey area to be approached to within 50-100 m, depending upon the degree of openness of particular parts of the survey area. Binoculars were used to scan all parts of the survey area and surveyors included regular stops to listen for singing or calling birds.

All birds observed, either by sight or sound, their locations and activity / behaviour were recorded on field maps and/or mobile mapping software using standard British Trust for Ornithology (BTO) species codes and behaviour notation, as described in Gilbert *et al.* (1998).

Table A - 3:Breeding Bird Survey Details

Survey Date	Survey Visit Number	Surveyor	Time of Sunrise	Start Time	End Time	Weather Conditions
16 April 2019	1	CC	06:24	08:10	10:20	Overcast day with moderate wind and no rain. Good visibility.
17 April 2019		CC	06:21	06:45	09:40	Overcast day with moderate wind and no rain. Good visibility.

Survey Date	Survey Visit Number	Surveyor	Time of Sunrise	Start Time	End Time	Weather Conditions
04 June 2019	2	EV	05:01	09:50	15:45	Overcast day with light wind and showers. Moderate visibility.
05 June 2019		EV	05:00	9:00	11:00	Overcast day with light wind and showers. Moderate visibility.
09 July 2019	3	EV	05:08	10:00	13:00	Overcast day with light wind and no rain. Good visibility.
01 August 2019	4	EV	05:40	09:30	11:00	Overcast day with light wind and no rain. Good visibility.
27 May 2022	1	PL	05:08	05:00	11:30	Overcast day with a gentle breeze and drizzle. Good visibility.
28 June 2022	2	AD	04:59	06:15	09:50	Partly cloudy day with light winds and no rain. Excellent visibility.
16 May 2024	1	AD	05:23	07:10	11:30	Overcast day with light wind and no rain. Good visibility.
18 May 2024		AD	05:20	05:30	07:40	Clear day with still and no rain. Good visibility.
04 June 2024	2	AD	05:01	06:40	10:50	Overcast day with light wind and drizzle. Good visibility.
20 June 2024		AD	04:57	07:20	10:35	Overcast day with light wind and no rain. Good visibility.
26 June 2024	3	AD	04:59	07:06	10:30	Overcast day with light wind and no rain. Good visibility.
27 June 2024		AD	04:59	06:05	09:45	Overcast day with moderate breeze and no rain. Good visibility.
31 July 2025	1	SC	05:40	05:40	11:40	Low winds, moderate/good visibility, no persistent rain.
07 August 2025	2	KW	05:51	05:51	11:51	Low winds, moderate/good visibility, no persistent rain.

CC, Cameron Chester; EV, Emmi Virkki; PL, Paul Lynas; AD, Alison Donnelly; SC, S. Cully; KW, K. Westman

Territory Analysis

The results of the breeding bird surveys were used to determine breeding activity and to estimate territorial locations of protected and important species (e.g. SCI of SPA). Species not considered to be important (e.g. those on the Amber or Green Lists of BoCCI and not meeting any of the other criteria) were not included in the territory analysis.

Esri ArcGIS software was used to digitise and collate all observations made during the breeding bird survey visits. One or more records of territorial behaviour (e.g. singing, displaying or alarming, or the finding of nests or dependent young) were assumed to indicate a possible, probable or confirmed breeding territory, in accordance with standard BTO evidence codes, of non-breeding, possible, probable and confirmed breeding (adapted from the BTO Bird Atlas survey and is available at this link: https://www.bto.org/our-science/projects/birdatlas/methods/breeding-evidence). Obvious clusters of records were used to help identify breeding territories, taking into consideration the relevant ecologies of the species in question and using professional judgement.

Limitations

Information obtained during a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for particular species does not necessarily mean they do not occur in the study area. Likewise, the presence of records for a particular species does not automatically mean that these still occur within the area of interest or are relevant to the Proposed Order.

Baseline field survey for non-breeding birds was carried out over five non-breeding periods, the most recent being in 2024-2025 for disturbance surveys at the Ballydoyle and Malahide Estuaries. The data collected therefore range in age from approximately five and a half to one and a half years old. The Chartered Institute of Ecology and

Environmental Management advises that survey data of between 12-18 months old is “likely to be valid in most cases” (CIEEM, 2019). Moreover, CIEEM also advises that survey data between 18 months and three years old may also still be valid if there have been no significant changes to the habitats present and the local distribution of species in the wider area is not known to have changed. NatureScot (the statutory nature conservation agency in Scotland) similarly advise that ornithological data collected within the last five years, or three years if populations of key species are known to be changing rapidly, can be used to inform impact assessments for proposed wind farms (SNH, 2017).

These criteria are all met in the case of the Proposed Order, where there has been no significant change to baseline habitats between 2018 and 2025 (when update habitat surveys were conducted) and the distribution of non-breeding waterbirds is not known to have changed locally. Moreover, the very large quantity of data collected over the survey period 2018-2023 clearly demonstrates no change in the occurrence of non-breeding waterbirds in proximity to Dublin Airport over this time, either in terms of the species present or their abundance.

The aim of the desk study was to help characterise the baseline context of the Proposed Order and provide valuable background information that may not be captured by field survey alone. Information obtained during the desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for particular species does not necessarily mean that they do not occur in the study area. Likewise, the presence of records for particular species does not automatically mean that these still occur within the area of interest or are relevant to the Proposed Order. Elements of the desk study such as species records from within 2km of the Dublin Airport Site boundary were gathered in 2024, this data is still considered valid and sufficient to inform an assessment of effects from the Proposed Order.

Details of specific survey constraints and practical considerations associated with the bird disturbance assessment are presented in Appendix D. The surveys were undertaken using appropriate methodologies and represent the best available survey information for the purposes of the assessment. The identified constraints were minor and did not materially affect survey coverage, the identification or characterisation of relevant bird populations, or the ability to assess potential impacts and effects. The baseline information is therefore considered sufficiently robust and reliable to support the assessment presented in this chapter.

The data collected, which have informed this Report to Inform AA Screening and NIS, are therefore robust and valid, and there is no limitation to the reliability of the assessment presented in this document arising from the age of field survey data.

There are no other limitations to the reliability or robustness of the assessment in this Report to Inform AA Screening and NIS.

Appendix B Baseline Conditions

Habitats

Lands within the Dublin Airport Site boundary are dominated by hardstanding of buildings and artificial surfaces, amenity grassland, and improved agricultural grassland. Other habitats present include treelines, hedgerows, mixed broadleaved woodland, scattered trees and parkland, spoil and bare ground, dry meadows and grassy verges, wet grassland, and scrub. Areas of managed grassland including amenity and agricultural grassland within and surrounding the Dublin Airport Site boundary are suitable for SCI non-breeding birds.

Sector A

Sector A mainly comprises aircraft runways and taxiways. It is dominated by amenity grassland (Fossitt[55] code: GA2) and paved artificial surfaces (BL3). There are also some artificial drainage ditches (FW4) present. The habitats within Sector A are of low ecological importance as they are composed of species-poor and/or disturbed hardstanding habitats.

Sector B

Sector B comprises the northern section of the central built-up part of Dublin Airport. It is dominated by hardstanding, buildings and artificial surfaces (BL3) and comprises small sections of amenity grassland (GA2) and semi-mature to mature treelines (WL2) to the east.

The buildings and artificial surfaces within this Sector are of low ecological importance and are frequently subject to anthropogenic disturbance by way of usage by the staff at the airport. daa uses habitat management to actively deter birds from Dublin Airport to reduce the potential for collisions with aircraft. Therefore, these habitats are not considered likely to support any important species in notable numbers.

The amenity grassland and treelines in the south-eastern section of this Sector provide limited suitability to important species, including breeding birds, which may nest in these treelines. However, this habitat is surrounded by hardstanding and is well-lit. Therefore, it is unlikely to support any notable populations of important species if present.

Sector C

Sector C is located in the built-up central part of Dublin Airport that is dominated by buildings and artificial surfaces (BL3) and comprises a small area of amenity grassland (GA2) with planted immature trees to the north. These habitats are of low ecological importance as they are primarily hardstanding.

Sector D

Sector D is located in the southern section of the built-up central part of the Dublin Airport that is dominated by buildings and artificial structures (BL3) and comprises small areas of amenity grassland (GA2) to the north along the roads leading to the terminal. These habitats are of low ecological importance as they are primarily hardstanding.

Sector E

Sector E is located in the south-eastern section of Dublin Airport and is dominated by amenity grassland (GA2) and comprises buildings and artificial surfaces (BL3) associated with South Apron, the Cuckoo Stream (FW2), and drainage ditches (FW4).

Sector F

Sector F includes built up areas within the Dublin Airport such as the Ground Transport Centre (GTC), hotels, public transport bus locations and car parks including multi-storey car parks (MSCP) (BL3) and associated amenity grassland (GA2) and ornamental trees (WL2) and scrub (WS3).

Sector G

Sector G is located to the east of the Dublin Airport and includes built up areas within Dublin Airport such as the Ground Transportation Centre (GTC), hotels, public transport bus locations and car parks including MSCP (BL3)

and associated amenity grassland (GA2). In the survey area for these projects elements there are also some ornamental treelines (WL2), hedgerows (WL1), scrub (WS1) and grassy verges (GS2) associated with the buildings and roadsides.

Sector H

Sector H is located to the south-east of the Dublin Airport and predominately comprises fields surrounded by treelines and hedgerows. Habitats within this sector include amenity grassland (GA2), dry meadows and grassy verges (GS2), wet grassland (GS4), the Cuckoo Stream (FW2), mixed broadleaved woodland (WD1), scattered trees and parkland (WD5), hedgerows (WL1), treelines (WL2), scrub (WS1), recolonising bare ground (ED3), and buildings and artificial surfaces (BL3) associated with car parks, and the Aer Lingus Social and Athletic Association (ALSAA) Sports Centre.

Sector I

Sector I is located to the west of the Dublin Airport and comprises the West Apron and other facilities including the Irish Aviation Authority (IAA) Control Tower and the Dublin Airport Fire Station. This Sector is dominated by buildings and artificial surfaces (BL3) and comprises associated amenity grassland (GA2). These habitats have low ecological importance as they are composed of species-poor and/or disturbed hardstanding habitats.

Sector J

The eastern section of Sector J is dominated by agricultural fields (GA1) that are grazed by sheep and cattle and are bounded by hedgerows (WL1), treelines (WL2), and drainage ditches (FW4). The western section of Sector J is located on a recently used construction compound that comprises amenity grassland (GA2), spoil and bare ground (ED2), and buildings and artificial surfaces (BL3). The R108 road is located to the north and east of this Sector.

Sector K

Sector K is dominated by a car park (BL3) to the south. At the time of survey, the northern section of Sector K was in use as a construction site and was dominated by spoil and bare ground (ED2) with some mixed broadleaved woodland (WD1), dry meadows and grassy verges (GS2), treelines (WL2), and drainage ditches (FW4) also present. There is also mixed broadleaved woodland along the eastern and southern boundaries of this Sector.

Watercourses

The surface water at Dublin Airport drains to four primary catchments, subdivided into a further seven sub catchments.

The Mayne River sub-basin, which includes the Cuckoo Stream, is a sub-basin of the Liffey and Dublin Bay Catchment. The majority of the Proposed Order is within the Mayne River sub-basin, which covers the majority of the airport footprint, including Sectors A to J. The Cuckoo Stream flows into the Mayne River, which subsequently flows into the Baldoyle Estuary SPA and SAC.

The Sluice sub-basin includes the Forrest Little Stream, Kealy's Stream and Wad Stream. This sub-basin drains the majority of the North Runway (10L/28R), the North Apron, and GTC within sectors A, B, E, G, H, K. Forrest Little Stream and Kealy's Stream flow into the Sluice River, which then flows into the Baldoyle SPA and SAC.

The Santry River sub-basin, which extends across the western part of the South Runway (10R/28L) and airport car parking within Sector A. The Santry River flows into Dublin Bay behind North Bull Island SPA. This sub-basin is not hydrologically connected to any elements of the Dublin Airport Site boundary.

The Ward River sub-basin includes the Barberstown Stream and Huntstown Stream which flow into the Ward River to the north of the Application Site. The Ward River's natural catchment extends across the western part of the North Runway (10L/28R); however, it does not receive drainage from the North Runway (10L/28R) crossing Sectors A and J. The Ward River flows into the Malahide Estuary SAC. This sub-basin is not directly hydrologically connected to the Proposed Order.

Table B- 1: Summary of WFD Catchment, sub catchments and waterbodies

WFD Catchment	WFD Sub catchments	WFD River Sub Basin	Water Body	Water body within Sector	Sector within catchment
Liffey and Dublin Bay	Mayne_SC_010	Mayne River	Mayne Stream	None	A
			Cuckoo Stream	A, D, E, H	J, I, B, C, F, G
		Sluice River	Forrest Little Stream	A	
			Kealy Stream	F, G	H, E
			Wad Stream	None	K, F, B
		Santry River	Santry River	None	A
	Broadmeadow_SC_010	Ward River	Barberstown Stream	A (although the North Runway (10L/28R) itself does not drain to the Ward River)	**J**
			St. Margaret's Stream	A (although the North Runway (10L/28R) itself does not drain to the Ward River)	

Non-breeding waterbirds

Non-breeding waterbirds around Dublin Airport from 2018-2023

During the entire course of non-breeding bird surveys carried out between 2018-2023, nine species which are SCI of SPAs within the potential ZoI of the Proposed Order have been recorded:

- black-headed gull;
- common gull;
- cormorant;
- curlew;
- golden plover;
- herring gull;
- lesser black-backed gull;
- light-bellied brent goose; and,
- teal.

The summarised results of the non-breeding waterbird surveys for these species are given in **Error! Reference source not found.**. The locations of all records of these species are shown in Appendix 12-4: Baseline Report - Bird Technical Appendix in the Dublin Airport (Passenger Capacity) Act 2026 EIAR.

A summary of the results for each of the nine species listed above is given under the following sub-headings.

Black-headed gull

Black-headed gulls were the most widespread and frequently recorded SCI species, with a total of 215 records across all of the non-breeding bird surveys between 2018 and 2023. This species was present on 37 of the 47 survey dates, and was recorded during every month that was surveyed, with the exception of March 2023. A peak count of 210 individual black-headed gulls was recorded feeding in grassland between North Runway and South Runway in March 2019, approximately 240 m to the south-west of SL4.

Black-headed gulls were recorded on the ground within the Dublin Airport Site boundary on only four occasions across all surveys: one individual in December 2018, 53 individuals in December 2018, nine individuals in December 2022, and 27 individuals in January 2023, all located in the northern-most field of SL4.

The species was recorded using the fields between North Runway and South Runway fifteen times during the 2018 to 2019 survey season and was present each month during this period. However, during the most recent survey season in 2022 to 2023, only five records of black-headed gull were made on the ground in these fields, and this species was only present in the fields on two survey dates in December 2022 and January 2023. There were also a few records of black-headed gulls using amenity sports pitches and golf driving ranges in the surrounding area, and also a few records of black-headed gulls located airside in areas that were mainly grassland prior to the construction of North Runway (and which now no longer exist). However, the majority of black-headed gulls were recorded in flight around Dublin Airport and surrounding lands, in fields located over 500 m from the Dublin Airport Site boundary, and also nearby the pond in Santry Park, approximately 1.5 km south of SL2.

Common gull

Common gulls were recorded relatively infrequently, with only twenty records across all of the non-breeding surveys between 2018 and 2023. This species was present on fourteen survey dates which included the survey visits in January, February, March, October, December 2019, February and March 2020, December 2022, and January 2023. A peak count of 31 individuals was recorded feeding approximately 1.2 km north-east of SL10 in March 2020.

Common gulls were only recorded within the Dublin Airport Site boundary on two occasions, with one individual in a grassland field in SL4 in December 2022, and two individuals in SL4 in January 2023. However, this species was typically recorded in low numbers of approximately one or two individuals in the wider survey area.

Cormorant

Cormorant was recorded on only one occasion during the surveys, with one individual present nearby the pond in Santry Park, approximately 1.5 km south of SL2, in November 2019.

Curlew

Curlew was recorded relatively infrequently, with 34 records across all of the non-breeding bird surveys between 2018 and 2023. This species was present on twenty survey dates which encompassed each month in the 2018 to 2019 survey season, February 2021, and each month in the 2022 to 2023 survey season, with the exception of March 2023.

A peak count of 84 curlew was recorded approximately 350 m to the north of SL1 in January 2019 within lands that are now part of North Runway. A flock of 28 curlew were located airside, approximately 40 m to the east of the existing road component of SL4, in December 2018.

The majority of curlew were recorded before the North Runway development was completed. During surveys between 2021 and 2023 all curlew records have been located in a relatively large field to the east of the M1 and M50 motorway, adjacent to the Clayton Hotel approximately 300 m south-east of SL9.

Golden plover

Golden plover was recorded relatively infrequently, with only eight records across all of the non-breeding bird surveys between 2018 and 2023. This species was present on only six survey dates, in December 2018, January, February, and March 2019, and December 2022.

A peak count of 85 golden plover was recorded in flight approximately 1.2 km to the north-west of SL4, in March 2019. The record with the second highest count comprised 65 birds roosting in grassland approximately 350 m to the north of South Compound in January 2019.

Golden plover was recorded within the Dublin Airport Site boundary on one occasion, involving a flock of twelve individuals feeding in the northern-most grassland field in SL4 in December 2022. The next closest record to the Dublin Airport Site boundary comprised 35 individuals, approximately 100 m south-west of SL4 in December 2022.

Herring gull

Herring gull was recorded 124 times across all of the surveys between 2018 and 2023, mainly in flight or in grassland fields outside the airport. This species was present on 32 survey dates and was recorded in each month surveyed, with the exception of November 2018.

A peak count of 46 herring gulls was roosting in a grassland field approximately 600 m south of the southernmost surface road SL11 in November 2019. There were only two occasions that herring gulls were recorded on the ground within the airfield, which comprised five individuals in SL4 in November 2022, and ten individuals in SL4 in

January 2023. There were only five other occasions that herring gulls were recorded on the ground within 300 m of the airfield, which were associated with the Halpenny Golf Driving Range, approximately 100 m east of SL10, the ALSSA Sports Centre, approximately 200 m north of SL9, and grassland to the south of Dardistown Cemetery, approximately 250 m south-east of SL2. The majority of herring gulls were either in flight or located in larger grassland fields nearby the M1 and M50 motorways, over 400 m from the Dublin Airport Site boundary.

Lesser black-backed gull

Lesser black-backed gull was only recorded five times across all of the surveys. This species was present on one survey date in January 2019, and two survey dates in March 2019. Four out of the five records comprised birds in flight. A peak count of nine individuals was recorded feeding approximately 900 m west of the north-western part of SL11 in March 2019. The closest record to the Dublin Airport Site boundary comprised one individual in flight approximately 500 m east of the airport roundabout SL11.

Light-bellied brent goose

Light-bellied brent goose was recorded on only one occasion during the course of non-breeding bird surveys, with 40 individuals observed approximately 1.4 km north-east of SL10 in October 2019.

Teal

Teal was recorded on only one occasion during the surveys, with two individuals feeding at the pond in Santry Park, approximately 1.5 km to the south of SL2, in September 2019.

2024/25 Non-breeding Bird Surveys

During the survey period, seven non-breeding bird surveys were carried out. A total of 22 species were recorded, summarised below, as well as in **Error! Reference source not found.**. The results of the field surveys are shown in the Bird Technical Appendix (Appendix 12-4, Dublin Airport (Passenger Capacity) Act 2026 EIAR).

Five waterbird bird species were recorded comprising:

- four non-breeding SCI of nearby designated sites (Black-headed Gull, Common Gull, Curlew and Herring Gull)
- one breeding SCI of nearby designated sites (Herring Gull)
- one Red listed species (Curlew)
- two raptor species (Red listed Kestrel Falco tinnunculus and Green listed Buzzard Buteo buteo)
- fifteen species were farmland birds (including one Red listed species, Meadow Pipit)

The largest flocks, and species most regularly occurring in large flocks included:

- Starling (largest flock of 300 individuals calling on grassland approximately 70m east of SL4)
- Curlew (largest flock of 42 feeding birds within a grassland field approximately 270m south-east of SL4)
- Herring Gull (largest flock of 33 feeding birds within an agricultural field approximately 670m south of SL5)
- Black-headed Gull (largest flock of 25 roosting birds within an agricultural field approximately 560m south-west of SL2)

Waterbirds

There were 65 records of waterbirds between September 2024 and March 2025, with 32 of these records comprising birds in flight. The most frequently recorded species during the surveys were Herring Gull (20 records) and Black-headed Gull (23 records). Waterbirds were mainly recorded within areas of grassland, primarily south of the south runway and east of SL10, within the Halpenny golf course and in the wider survey area. Records captured from within the Dublin Airport Site boundary only comprise:

- one record of Curlew (comprising 14 individuals) feeding on grassland within SL5
- A number of Herring Gull records (comprising mainly single individuals or small numbers of less than five individuals) flying over SL10, SL11, SL2 and SL9
- one record of Black-headed Gull (one individual) flying over SL4
- All other waterbirds were recorded outside of the Dublin Airport Site boundary.

Peak counts from the whole study area are presented in Table 5-3.

Table B- 2: Peak Counts of Important Waterbirds (2024-2025)

Common Name	Scientific Name	Conservation Status (Conservation Concern)	Peak Number of Birds and Location	Activity
Curlew	*Numenius arquata*	Red	42, 270m south-east of SL4	Feeding
Black-headed Gull	*Chroicocephalus ridibundus*	Amber	25, 560m south-west of SL2	Roosting
Common Gull	*Larus canus*	Amber	One, *circa* 200m east of SL10	Feeding
Herring Gull	*Larus argentatus*	Amber	33, 670m south of SL5	Feeding

Raptors

Both Buzzard (three records) and Kestrel (one record) were noted roosting (perched) over grassland fields within the Dublin Airport Site boundary. One of these Buzzard records was from within SL4, while the remaining records were located more than 50m beyond the Dublin Airport Site boundary. The Kestrel was recorded approximately 35m north of SL4.

Farmland Birds

Farmland birds were mainly observed feeding in grassland fields between the north and south runway and grassland fields in the wider area outside of the airport. Of these, one species is classified as important (Red listed Meadow Pipit),

Meadow Pipit was recorded six times during the survey period with a peak count of three individuals observed flying 250m north of SL4. All Meadow Pipits were recorded feeding or calling outside the Dublin Airport Site boundary. The closest Meadow Pipit recorded was an individual feeding approximately 45 m west of SL4. Other birds recorded include 14 records of Amber listed Starling, primarily within grassland habitats. The peak count of 300 starling was recorded approximately 70m to the south-east of SL4, with a notable count of 85 also recorded within SL4 on 08 January 2025. No other important farmland birds were recorded during the September 2024 and March 2025 survey period.

Non-breeding Bird Summary (2018 to 2025)

Eighteen important bird species were recorded between 2018 and 2025, which comprised seven non-breeding SCI bird species, three breeding SCI bird species (species which are SCI of SPAs as breeding birds; not birds which were found to be breeding within the survey area), two Annex I bird species and ten Red listed bird species.

Table 5-4 below details these important SCI species recorded between 2018 and 2025 including the maximum number of individuals present during any one survey (the ‘peak count’) and the number of individuals present for the closest record to the Dublin Airport Site boundary. Table 5-5 details the relative percentage of the national population and populations of each SCI bird of SPAs with potential connectivity that was recorded within the survey area.

The results of the non-breeding bird surveys are shown in Appendix 12-4: Baseline Report - Bird Technical Appendix in the Dublin Airport (Passenger Capacity) Act 2026 EIAR.

Table B- 3: Summarised Results of Important Bird Species Recorded during the Non-Breeding Bird Surveys from 2018 to 2025

Conservation Status					Peak Count			Peak Count of Closest Record to the Proposed Order		
Species	Non-Breeding SCI	Breeding SCI	BoCCI Red List	Annex I	Peak Count	Location(s)	Date(s)	Peak Count	Location(s)	Date(s)
Light-bellied Brent Goose	✓				40	1.4km north-east of SL10	08/10/2019	40	1.4km north-east of SL10	08/10/2019
Teal	✓				2	1.5km south of SL2	12/09/2019	2	1.5km south of SL2	12/09/2019
Golden Plover	✓		✓	✓	85	1.2km north-west of SL4 (in flight)	07/03/2019	12	Within SL4	13/12/2022
Curlew	✓		✓		84	350m north of SL1	30/01/2019	28	40 m east of SL4	06/12/2018
Black-headed Gull	✓				210	240m south-west of SL4	07/03/2019	53	Within SL4	18/12/2018
Common Gull	✓				31	1.2km north-east of SL10	10/03/2020	2	Within SL4	26/01/2023
Herring gull	✓	✓			46	600m south SL11	15/11/2019	10	Within SL4	26/01/2023
Lesser Black-backed Gull		✓			9	900m west of SL4	07/03/2019	1	500 m east of SL11 (in flight)	08/03/2019
Cormorant		✓			1	1.5km south of SL2	15/11/2019	1	1.5km south of SL2	15/11/2019

Table B- 4: SCI Bird Species Recorded during the Non-Breeding Bird Surveys from 2018 to 2025

Species Name	Peak Count of all Survey Data	1% National population threshold [15]	% of National Population Represented by Peak Count	% Of Malahide Estuary SPA Population Represented by Peak Count[16]	% Of Baldoyle Bay SPA Population Represented by Peak Count[15]	% Of South Dublin Bay and River Tolka Estuary SPA Population Represented by Peak Count[15]	% Of North Bull Island SPA Population Represented by Peak Count[15]	% Of North-west Irish SPA Population Represented by Peak Count[15]	% Of Rogerstown Estuary SPA Population Represented by Peak Count[15]	% Of Irelands Eye SPA Population Represented by Peak Count[15]	% Of Lambay Island SPA Population Represented by Peak Count[15]
Light-bellied Brent Goose	40	350	0.11	2.96	3.13	1.15	1.15	N/A	3.44	N/A	N/A
Teal	2	360	<0.01	N/A	N/A	N/A	0.14	N/A	N/A	N/A	N/A
Golden Plover	85	920	0.09	4.47	2.43	N/A	87.6	N/A	N/A	N/A	N/A
Curlew	84	350	0.24	N/A	N/A	N/A	9.16	N/A	N/A	N/A	N/A
Black-headed Gull	210	N/A	N/A	N/A	N/A	7.16	7.16	41.34	N/A	N/A	N/A
Common Gull	31	N/A	N/A	N/A	N/A	N/A	N/A	1.08	N/A	N/A	N/A
Herring Gull	46	N/A	N/A	N/A	N/A	N/A	N/A	0.66	N/A	N/A	1.27
Lesser Black-backed Gull	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cormorant	1	110	<0.01	N/A	N/A	N/A	N/A	<0.01	N/A	<0.01	<0.01

[15] 1% National population threshold numbers are based on the most recent IWeBS data available from the IWeBS Website. Any species data not available was entered in as N/A. https://birdwatchireland.ie/app/uploads/2021/05/Fitzgerald-et-al-2021-I-WeBS-Report-2016-17-2017-18-S23-24.pdf

[16] The % of each relevant SPA population is based on the most recent population estimate data for each SCI non-breeding bird on the NPWS Conservation Objectives documents. Only birds that are designated for their non-breeding bird populations for these relevant SPAs are considered as 'SCI' within this Table 4.F (i.e., any birds not designated or only designated for their breeding bird populations are considered as 'N/A'). Note that in the Conservation Objectives Supporting Documents for South Dublin Bay River and Tolka Estuary SPA and North Bull Island SPA the most recent mean peak number for SCI birds are combined for these two SPAs.

Results of non-breeding waterbird disturbance surveys

A total of 252 hours of survey were carried out at Baldoyle Bay SPA and Rogerstown Estuary SPA between June 2016 and December 2017, and in April and May 2018, to survey disturbance of non-breeding waterbirds. RPS (2018) reports that there was an almost continuous stream of air traffic overhead during the course of the surveys. The results of the bird disturbance surveys are presented in Appendix D.

In summary, a total of 184 disturbance events were identified by the surveys, with 89 at Rogerstown Estuary and 95 at Baldoyle Bay. These were caused by a variety of disturbance sources, primarily walkers and/or dogs, but also including aquaculture activities, ground-based transport and predators. A single disturbance event was noted in response to a low-flying Coast Guard helicopter.

During the 21 months of survey, comprising 252 hours of VP watch, no disturbance events caused by aircraft passing overhead on established flight paths to or from Dublin Airport were recorded.

Similarly, AECOM recorded a total of 47 disturbance events during the course of 36 hours of survey in January, February and March 2024. The primary source of disturbance was again walkers with dogs, although sailing activities and train movements were also sources of disturbance in Malahide Estuary.

Using the application Flightradar24[17], AECOM surveyors were able to record the flight barometric altitude, ground speed and flight route of most of the aircraft passing overhead. Aircraft flying over Malahide Estuary SPA and Baldoyle Bay SPA were never recorded to fly below 300 m, apart from an Irish Coast Guard helicopter, which flew at approximately 198 m above Malahide Estuary SPA on 26 January 2024. While birds were present when the helicopter passed overhead, no birds were observed to be disturbed by it. The helicopter also returned approximately 56 minutes later but was flying at a much greater height and again, no birds were observed to be disturbed by the aircraft.

Like RPS, AECOM found no evidence of aircraft using Dublin Airport causing any disturbance of birds in either Baldoyle Bay or Malahide Estuary.

There is consequently no evidence that aircraft using Dublin Airport are causing disturbance of SCI bird species at the European sites closest to the Dublin Airport Site boundary.

Breeding Birds

No evidence of breeding by any SCI species was recorded during field surveys. A few individual herring gulls and lesser black-backed gulls were observed flying on occasion during the breeding bird surveys, however these gulls were not recorded nesting anywhere within the survey area.

[17] https://www.flightradar24.com/53.29,-6.04/10 Accessed January, February, and March 2024.

Appendix C Literature review

Introduction

To inform the Appropriate Assessment Screening and Natura Impact Statement, a literature review was carried out to investigate hearing in birds and the effects of noise and visual stimuli on birds and marine mammals, in particular seals and cetaceans (whales, dolphins and porpoises). The review focussed primarily on scientific studies which investigated the effects of aircraft noise on non-breeding waterbirds, breeding seabirds, and seals and porpoises. However, where relevant, or where they provide useful additional information, other studies into noise disturbance of birds or marine mammals were also included in the literature review.

Noise levels and bird hearing

Hearing in birds is not as well developed as in humans, in that most birds cannot hear as high or as low frequencies as humans. There are physiological reasons for this (summarised in Dooling and Popper (2007) and Beason (2004)). Additionally, the ability of birds to resolve similar frequencies is only about one-half to one-third that of humans within the range of peak sensitivity, which is similar to that of humans at 1 – 4 kHz (Beason, 2004).

Many of the studies referenced throughout this section use 'dB(A)' to measure sound levels. dB(A) is the sound level in decibels in the range of human hearing which, as set out above, is better than in most birds. However, because the studies referenced investigated the response of birds to noise levels measured in dB(A), this does not represent a limitation to the literature review. In simple terms, the studies sought to show where a response by a given species may be elicited by noise levels measured in dB(A).

By virtue of its logarithmic nature, the decibel (dB) scale covers many orders of magnitude of sound pressure within a relatively small numerical range, which can be counterintuitive to those not familiar with it. The following points, based on information provided by the UK Civil Aviation Authority (https://www.caa.co.uk/Consumers/Environment/Noise/Measuring-and-modelling-noise/) and in the *Fundamentals of Acoustics* by Hansen (1951) may be helpful:

- a difference of less than 3 dB is often not perceived by humans and perhaps, given the general inferiority of bird hearing compared to human hearing, not by birds either;
- a difference of 10 dB is perceived as roughly a doubling or halving; and,
- without barriers and varying also according to other physical aspects of the environment, sound levels from point sources tend to decrease by about 6 dB with each doubling of distance.

It is important to note that visual stimuli tend to have greater disturbance effects on birds than noise stimuli alone (as stated in Cutts *et al.* (2009)).

Non-breeding waterbirds

Although studies into aircraft disturbance of non-breeding waterbirds were found by the literature review, the majority of these investigated the effects of low-flying light aircraft, military jets and helicopters. Cutts *et al.* (2009), however, note that there appears to be a degree of habituation by waterfowl flocks on the Humber Estuary, England, to regular commercial aircraft flights to Humberside Airport. They state that birds showed no response to these flights, except when, on two occasions, they appeared to be 'spooked' by the shadow of an aircraft when its flightpath positioned the shadow over the mudflats of the estuary.

Hoang (2013) conducted a literature review of aircraft disturbance on shorebirds and seabirds. Of seven studies presented in the literature review which investigated effects on shorebirds (including several of the SCI species relevant to this assessment), the minimum distance at which disturbance was found to be caused by fixed-wing aircraft was 300 m above ground level. It should be noted that all aircraft considered by this study were small planes or military jets.

Komenda-Zehnder *et al.* (2003) performed 326 experimental flights over lakes in Switzerland to observe for behavioural responses by non-breeding waterbirds. They found that birds returned to a 'relaxed' behaviour (including preening, resting and feeding) within five minutes of the over-flights. Similar to the review of studies carried out by Hoang (2013), Komenda-Zehnder *et al.* (2003) also found that planes flying at heights of 300 m above ground level did not result in any significant change in the behaviour of birds.

In a study carried out in the Dutch Wadden Sea, the numbers and behaviours of knot *Calidris canutus* were found to be affected by over-flights of military jets, with fewer birds present on days with flights and the birds that were present being more restless and less approachable by humans (Koolhaas *et al.*, 1993). They also observed that 'light tourist airplanes' caused a more severe response in the birds than the military jets.

A substantial review of literature associated with the disturbance of waterbirds was produced for the Humber Industry Nature Conservation Association (INCA) by the University of Hull (Cutts *et al.*, 2009). Although not specifically relating to aircraft, this report recommended that (with respect to waterbirds on mudflats), construction noise levels should be restricted to below 70 dB(A) because birds would habituate to regular noise below that level, but that sudden irregular noise above 50 dB(A) should be avoided. The University of Hull subsequently produced refined guidance in the Waterbird Disturbance Mitigation Toolkit (Cutts *et al.*, 2013). It concluded that:

- high level disturbance effects are likely with continuous noise above 72 dB(A) or sudden noise above 60 dB(A);
- moderate level disturbance effects are likely with regular noise of 60 – 72 dB(A) or sudden noise of 55 – 60 dB(A); and,
- there is unlikely to be any response by waterbirds to any noises below 55 dB(A).

Breeding seabirds

Ireland's Eye SPA, Lambay Island SPA, South Dublin Bay and River Tolka Estuary SPA, Howth Head Coast SPA, and Dalkey Island SPA are designated for breeding seabirds and some of the studies described below are likely to be directly applicable to those sites. However, nesting birds are generally considered to be more sensitive to disturbance and the results of these investigations may provide a conservative assessment of how non-breeding SCI birds may react to similar disturbance sources.

Dunnet (1977) carried out a study into the disturbance caused by aircraft (including fixed-wing planes and helicopters) passing over a cliff-nesting seabird colony in Aberdeenshire, Scotland. The species present included herring gull *Larus argentatus*, kittiwake *Rissa tridactyla*, guillemot *Uria aalge* and razorbill *Alca torda*. The study found no evidence that aircraft passing at heights of 100 m or more above the cliff-top affected attendance of the birds, and whilst groups of kittiwake took to the air in response to planes it was noted that they did so frequently through the course of the day for no obvious cause. Although this study did not measure sound levels, it is clear that aircraft passing 100 m above the cliff would have generated a much larger amount of noise than aircraft passing overhead at 300 m or higher into or out of Dublin Airport. Furthermore, these aircraft would certainly have also presented a visual disturbance stimulus and thus be expected to be more likely to elicit a response from the birds present.

A study of nesting herring gulls beside an airport (Burger, 1981) found that normal colony noise was 77 dB(A), and (in this case, where birds were habituated to normal jet aircraft) behavioural reactions (taking flight) only occurred when Concorde passed by, generating noise exceeding 101 dB(A). This is rather an extreme example, however, involving birds that were habituated to noise from nearby passenger jets at levels which were liable to have caused hearing damage, but is useful as a further demonstration that birds may tolerate high levels of constant or frequently-occurring noise.

In an Australian study of nesting terns (Brown, 1990), aircraft noise was simulated using speakers placed beside a colony which was not accustomed to aircraft. In doing so, visual disturbance stimuli were eliminated and there was no prior habituation. It found that playback of aircraft noise at 65 dB(A) had a minimal reaction, causing the majority of terns to 'scan' (cocking the head or turning it horizontally). At 70 dB(A), about half the terns engaged in 'alert' behaviour (extending the neck, making minor whole-body movements or wing tensing). 'Startle' (preparation to fly) and 'escape' (flying off) behaviours only affected a small proportion of the terns and were largely restricted to sound levels above 85 dB(A). An observation study of harlequin ducks *Histrionicus histrionicus* (Goudie and Jones, 2004) similarly found that behavioural changes increased substantially when sound from passing aircraft exceeded 80 dB(A). However, this and other studies (e.g. Buxton *et al.*, 2017) noted that whilst disturbance may not cause birds to take flight, less obvious stress-related behavioural changes can occur such as reduced courtship behaviour and increased time engaged in agonistic, disturbance or predator evasion behaviour, which may adversely affect survival.

A study conducted in Minnesota aimed to investigate the effects of an airport expansion on nearby nesting black-crowned night herons *Nycticorax nycticorax*, great blue herons *Ardea herodias* and great white egrets *Ardea alba* (Grubb, 1979). A single engine propeller aircraft was flown over the nesting site of these species at heights between

490 and 2,620 m above ground level. The noise levels generated by the aircraft at these heights ranged from 61 – 88 dB(A), and were 9 dB(A) greater than the maximum existing aircraft noise levels. No reactions were observed in the birds in response to the test flights.

Marine mammals

Seals

Hoang (2013) reports a study of human disturbance of harbour seal in the Wadden Sea which found that, in 200 cases of potentially disturbing aircraft activities, eight events caused seals to enter the water. Out of 330 seals, on average twelve fled into the water and five became alert. The authors mentioned that aircraft at lower altitudes appeared to cause more disturbances, and that aerial surveys by small aircraft 980 feet (380 m) only caused alert behaviour and did not cause 'active' disturbance.

Born *et al.* (1999) report that hauled out ringed seals *Phoca hispida* on Arctic ice were disturbed into the sea by aircraft at distances of approximately 600 m or less 'in front of' of twin-engine fixed-wing aircraft flying at heights of approximately 150 m. The study they carried out indicated that the risk of scaring ringed seals into the water could be substantially reduced if small fixed-wing aircraft did not approach closer than about 500 m.

Scottish Government has prepared an advice document – *Guidance on the Offence of Harassment at Seal Haul-out Sites* – to help avoid harassment of seals at haul out sites (Scottish Government, 2014). It is stated in that document that the intentional or reckless repeated over-flight of fixed wing aircraft or helicopters over a seal haul out site at heights below 1,000 feet (304 metres) would likely constitute a legal offence due to high probability of causing harassment (involving disturbance). It therefore recommends that such aircraft should maintain a minimum height of 1,000 feet (approximately 300 m) above colonies or groups of seals.

Cetaceans

The UK Joint Nature Conservation Committee (JNCC) carried out a conservation literature review for harbour porpoise (*A Conservation Literature Review for the Harbour Porpoise* (*Phocoena phocoena*), JNCC, 2015). They state that although disturbance reactions in cetaceans have been found in response to low flying aircraft, including aerial surveys to assess harbour porpoise abundance, there is no evidence for a negative impact of low flying aircraft on harbour porpoise populations in UK waters.

Hoang (2013) reports a study from the Gulf of Mexico which examined the responses of different cetaceans to aerial surveys from a fixed-wing aircraft. The plane flew at 750 feet (229 m) altitude and at a minimum horizontal distance of 305 m from cetaceans. It was found that some species reacted more strongly to the aircraft than others. For example, bottlenose dolphins *Tursiops* sp. reacted in 28% of the sightings, and for Risso's dolphin *Grampus griseus*, in 16% of sightings.

Patenaude *et al.* (2006) studied disturbance of bowhead whales *Balaena mysticetus* and beluga whales *Delphinapterus leucas* by fixed-wing aircraft and found that few (2.2% of bowhead, and 3.2% of belugas) reacted to over-flights at altitudes 60-460 m. Most observed reactions occurred when the aircraft was at altitudes of less than 182 m.

Summary of literature review

Bird hearing is, for most species, less developed than that of humans. Although noise can act in isolation to cause disturbance to both non-breeding and breeding birds, greater responses typically occur when there is also a visual stimulus.

There are very few studies into the effects of commercial aircraft on birds, with most investigations involving light aircraft, military jets and/or helicopters. The majority of studies have found that over-flights of fixed-wing aircraft do not result in disturbance to birds when these flights are 300 m or higher above the ground.

From the studies quoted, noise levels of around 60 dB(A) or lower appear unlikely to result in disturbance responses. Noises greater than 60 dB(A) have been shown to elicit disturbance responses in some studies, although others have shown that birds were not disturbed by noises ranging from 77 – 88 dB(A).

Similarly, all of the studies into disturbance of marine mammals found as part of the literature review involved small aircraft. However, these consistently found that below approximately 500 m (approximately 1,600 feet), or lower,

there were no significant impacts of disturbance from such aircraft on seals and cetaceans, including harbour porpoise.

Appendix D Non-breeding Bird Disturbance Monitoring Survey Report

AECOM

Appendix D: Non-breeding Bird Disturbance Monitoring Survey Report

Malahide Estuary SPA and Baldoyle Bay SPA

July 2026

Delivering a better world

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1. Introduction

1.1 Background and purpose of survey

AECOM Ireland Limited (AECOM) was commissioned by daa to carry out non-breeding bird surveys to gather any evidence of disturbance of waterbirds[1] in Special Protection Areas (SPAs) beneath flight paths of aircraft coming into and departing from Dublin Airport.

RPS previously carried out similar monitoring of potential disturbance of waterbirds at Rogerstown Estuary SPA and Baldoyle Bay SPA between June 2016 and May 2018 (reported in RPS (2018)). The RPS surveys identified no disturbance events as a result of aircraft passing overhead on established flight-paths to/from Dublin Airport.

The aim of the non-breeding bird disturbance monitoring surveys carried out by AECOM were to monitor coastal waterbirds at Baldoyle Bay SPA and Malahide Estuary SPA[2] where aircraft regularly overfly to:

1. observe disturbance events and behavioural changes of waterbirds to disturbance stimuli; and,
2. determine if overflying aircraft disturb coastal waterbirds in SPAs beneath flight paths of aircraft arriving at and departing from Dublin Airport.

The purpose of this Report is to establish whether existing aircraft activity on current flight paths results in disturbance to coastal waterbirds.

AECOM was commissioned by daa to prepare an Environmental Impact Assessment Report (EIAR) and a report to inform an Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) in relation to the removal of the existing 32mppa (million passengers per annum) passenger planning cap at Dublin Airport and the facilitation of passenger growth beyond that level to 40mppa by 2029 using existing and permitted airport infrastructure (hereafter referred to as the 'Proposed Order'. Throughout this Report, species are given their common and scientific names when first referred to and their common names only thereafter. All distances are cited as the shortest distance 'as the crow flies', unless otherwise specified.

1.2 Relevant Special Areas of Conservation

Using the Environmental Protection Agency (EPA) maps website[3] and the National Parks and Wildlife Service (NPWS) Protected Sites in Ireland website[4], a number of SPAs were noted to be located within Dublin Bay, including SPAs designated for internationally important populations of non-breeding waterbirds. Malahide Estuary SPA and Baldoyle Bay SPA are the closest SPAs to Dublin Airport (approximately 4.0 km and 5.3 km distant, respectively). The Special Conservation Interests (SCI) of Malahide Estuary SPA and Baldoyle Bay SPA are listed in **Table 1-1.**

Malahide Estuary SPA and Baldoyle Bay SPA are located beneath flight-paths for Dublin Airport, therefore non-breeding waterbird surveys to monitor disturbance events and behavioural changes in response to disturbance stimuli were carried out in these SPAs.

[1] Waterbirds, in this Report, comprise wildfowl (ducks, geese and swans), terns, waders, rails, divers, grebes, cormorants, gulls and herons.
[2] In the previous disturbance monitoring study carried out by RPS (2018) for daa, Rogerstown Estuary SPA was surveyed but due to the height of aircrafts flying over Rogerstown Estuary SPA (typically greater than 6,000 ft), Malahide Estuary SPA was instead surveyed for this Report given its distance to Dublin Airport and the comparatively lower flight heights over this SPA.
[3] https://gis.epa.ie/EPAMaps/ Accessed July 2026
[4] https://www.npws.ie/protected-sites Accessed July 2026

Table 1-1. SCI non-breeding waterbird species of Malahide Estuary SPA and Baldoyle Bay SPA

Site name [site code]	Summary of Special Conservation Interests (SCI)	Distance from Dublin Airport
Malahide Estuary SPA [004025]	• Great crested grebe *Podiceps cristatus* [A005] • Light-bellied brent goose *Branta bernicla hrota* [A046] • Shelduck *Tadorna tadorna* [A048] • Pintail *Anas acuta* [A054] • Goldeneye *Bucephala clangula* [A067] • Red-breasted merganser *Mergus serrator* [A069] • Oystercatcher *Haematopus ostralegus* [A130] • Golden plover *Pluvialis apricaria* [A140] • Grey plover *Pluvialis squatarola* [A141] • Knot *Calidris canutus* [A143] • Dunlin *Calidris alpina* [A149] • Black-tailed godwit *Limosa limosa* [A156] • Bar-tailed godwit *Limosa lapponica* [A157] • Redshank *Tringa totanus* [A162] • Wetland and waterbirds [A999]	Approximately 4.0 km north-east.
Baldoyle Bay SPA [004016]	• Light-bellied brent goose [A046] • Shelduck [A048] • Ringed plover *Charadrius hiaticula* [A137] • Golden plover [A140] • Grey plover [A141] • Bar-tailed godwit [A157] • Wetland and waterbirds [A999]	Approximately 5.3 km east.

1.3 Quality assurance

This Report and field survey described within it, has been completed in accordance with the AECOM Integrated Management System (IMS). Our IMS places emphasis on professionalism, technical excellence, quality, as well as covering health, safety, environment and sustainability management. All AECOM staff members are committed to maintaining our accreditation to those parts of BS EN ISO 9001:2015 and 14001:2015 that are relevant to consultancy service.

The field surveys for non-breeding waterbirds were carried out by trained and experienced AECOM ornithologists. The field surveys carried out to inform this Report were completed by Dr Paul Lynas and Alison Donnelly.

Dr Paul Lynas is a Chartered Environmentalist and full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Paul holds a 2.1 BSc (Hons) degree in Environmental Biology from Queen's University Belfast and has a PhD in Ecology. Paul is an Associate Director and has over 21 years' experience with professional conservation and consultancy. Paul has extensive experience in surveying of birds having conducted breeding and non-breeding birds and used the results obtained to identify the impacts of infrastructure developments and to devise suitable mitigation / enhancement strategies.

Alison Donnelly holds a 2.1 BSc (Hons) degree in Marine Science from the University of Galway and a 2.1 MRes in Marine Biology. Alison is a Senior Ecologist with over seven years' of experience as a professional ecologist on projects for private and public sector clients. She has experience in ecological assessments and has carried out several surveys for both breeding birds and non-breeding including transect and vantage point surveys. Alison Donnelly updated this Report following the updated 2025 surveys.

Aoife Whyte originally authored this Report. Aoife is a Graduate Ecologist with over two years' experience as a professional ecologist on projects for private and public sector clients. Aoife holds a 1st Class BSc (Hons) degree in Biomedical Sciences with a specialisation in Zoology from Trinity College Dublin and is a Qualifying Member of CIEEM. She has experience in ecological assessments and has carried out several surveys for both non-breeding and breeding birds including transect and vantage point surveys. Aoife was involved in data management and also helped with the vantage point surveys. As, mentioned above Alison Donnely updated this Report following the updated 2025 surveys.

The Report was reviewed by Tony Marshall is a Chartered Ecologist and full member of the CIEEM. He holds a 1st Class BSc (Hons) degree in Biological Sciences (Ecology) from the University of Edinburgh. Tony has fifteen years' experience as a professional ecologist on projects for private and public sector clients. He has conducted many surveys for breeding and non-breeding birds and used the results obtained to identify the impacts of infrastructure developments and to devise suitable mitigation/enhancement strategies.

Verification of this Report was carried out by Robbie Watt, AECOM Associate Director. Robbie is an Associate member of CIEEM and holds BSc (hons) and MRes degrees from the University of Glasgow and University of Lund respectively. Robbie has over thirteen years' experience as a professional ecologist and in that time has authored/reviewed a number of consent documents for projects with potential impacts to wintering birds associated with European designated sites. Robbie is also experienced at scoping and undertaking wintering bird surveys.

2. Legislation and planning policy context

The following relevant legislation was considered for this Report:

- Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive');
- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive');
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (as amended) (the 'Water Framework Directive');
- Convention on Wetlands of International Importance ('Ramsar Convention');
- The European Communities (Birds and Natural Habitats) Regulations 2011 and 2015 (S.I. No. 477/2011) (as amended) (the 'Habitats Regulations');
- The Wildlife Act 1976 and the Wildlife (Amendment) Act 2000 (together known as the 'Wildlife Acts');
- The Planning & Development Act 2024 S.I. 30/2000 as amended; the Planning and Development (Amendment) Act 2010 S.I. 30/2010 as amended; The Planning & Development (Amendment) Act 2010 S.I 16/2018 as amended (collectively known as the 'Planning Acts'); and,
- EC Environmental Objectives (Surface Waters) Regulations 2009 (SI 272 of 2009).

The Birds Directive instructs Member States of the European Union (EU) to take measures to maintain populations of all bird species naturally occurring in the wild state in the EU (Article 2). Such measures may include the maintenance and/or re-establishment of habitats in order to sustain these bird populations (Article 3). A subset of bird species has been identified in the Birds Directive and are listed in Annex I as requiring special conservation measures in relation to their habitats. These species have been listed on account of, *inter alia*: their risk of extinction; vulnerability to specific changes in their habitat; and/or, due to their relatively small population size or restricted distribution. SPAs, such as Baldoyle Bay SPA and Malahide Estuary SPA, are identified and designated to protect these Annex I listed species as well as certain regularly occurring migratory species, paying particular attention to the protection of wetlands (Article 4). The requirements of the Birds Directive are translated into Irish national law by the Habitats Regulations.

3. Field survey methods

3.1 Important bird species

For the purposes of field survey and this Report, important waterbird species were defined as:

- waterbird species listed on Annex I of the Birds Directive;
- all SCI species of Baldoyle Bay SPA and Malahide Estuary SPA, and other SPAs in Dublin Bay (NPWS, 2012; 2013; website);
- waterbird species listed on the Birds of Conservation Concern in Ireland (BoCCI) Red List and BoCCI Amber List (Gilbert *et al*, 2021); and,
- other species, that may be rare, scarce, or otherwise notable, were included where deemed appropriate through available information and/or professional judgement.

3.2 Non-breeding waterbird survey

Two survey methods for non-breeding waterbirds were carried out once a month at Baldoyle Bay SPA and Malahide Estuary SPA between January 2024 and December 2024, inclusive. The primary aim of the survey was to watch for evidence of disturbance of non-breeding waterbirds, in particular as a result of over-flying aircraft using Dublin Airport. The secondary aim of the survey was to then record the general bird assemblage present (i.e. species presence and numbers of individuals) within the survey area. These surveys were carried out at a single VP location at each SPA (i.e. two VPs locations in total) during the same visit around high or low tide; however, primary focus was given to the disturbance monitoring survey. Timing and weather details of the non-breeding waterbird surveys are provided in **Table 3-1** and are discussed in further detail in **Section 3.2.1** and **3.2.2**.

Table 3-1. Non-breeding waterbird survey details

Survey date	Vantage point	Start time	End time	High tide	Low tide	Weather conditions	Visibility
23/01/2024	Baldoyle Bay	10:00	16:00	10:11	15:58	3°C, 8/8 cloud cover, north-westerly moderate breeze, showers.	Good
26/01/2024	Malahide Estuary	09:00 12:45	12:00 15:45	12:43	18:44	4-8°C, south-westerly wind, dry.	Excellent
16/02/2024	Malahide Estuary	09:20	15:20	16:32	09:57	7°C, 7/8 cloud cover, south-westerly light breeze, dry.	Good
23/02/2024	Baldoyle Bay	10:40	16:40	11:07	16:16	4°C, 5/8 cloud cover, easterly light breeze, dry.	Good
08/03/2024	Malahide Estuary	11:07	17:07	10:06	15:34	7°C, 8/8 cloud cover, westerly moderate breeze, dry.	Good
15/03/2024	Baldoyle Bay	09:03	15:10	15:06	20:56	8°C, 5/8 cloud cover, south-easterly light breeze, dry.	Excellent
22/10/2024	Malahide Estuary	11:48	17:48	15:45	09:11	12°C, 1/8 cloud cover, south-easterly light breeze, dry.	Good
23/10/2024	Baldoyle Bay	10:46	16:46	13:16	19:03	12°C, 1/8 cloud cover, south-easterly light air, dry.	Good
15/11/2024	Malahide Estuary	10:00	16:00	11:42	16:27	11°C, 4/8 cloud cover, south-westerly light breeze, dry.	Excellent
22/11/2024	Baldoyle Bay	08:01	14:01	16:23	09:34	2°C, 1/8 cloud cover, north-easterly light breeze, dry.	Good
11/12/2024	Baldoyle Bay	10:10	16:10	07:42	13:15	5°C, 4/8 cloud cover, westerly light breeze, dry.	Good
12/12/2024	Malahide Estuary	09:53	15:53	08:41	14:19	5°C, 5/8 cloud cover, westerly light air, dry.	Good

The survey area and location of Baldoyle Bay SPA and Malahide Estuary SPA in relation to Dublin Airport are shown on **Figure 1**.

3.2.1 Primary survey – non-breeding waterbird disturbance monitoring

Vantage point (VP) watches were conducted at both Malahide Estuary SPA and Baldoyle Bay SPA. The methodology of these VP watches followed previous disturbance monitoring surveys carried out by RPS (2018). A single suitable VP location was chosen at each SPA which allowed for maximum visual coverage of the survey area (**Figure 1**). Each VP watch was carried out for a duration of six hours. During the vantage point watches, the observer recorded all disturbance events, noting the time, disturbance source, species disturbed, and numbers of birds affected.

The response of waterbirds present was recorded on a scale from 1 to 3:

1 - Behavioural change (e.g. vigilance or alarm call) but not flight.

2 - Flew but soon returned to the site[5].

3 - Flew and abandoned the site.

Potential disturbance events from aircraft passing over the SPAs were the primary focus of the survey. During the survey, surveyors used the Flightradar24[6] on their mobile devices to record real-time flight data, including barometric altitude, ground speed, and flight route for most aircraft passing overhead.

3.2.2 Secondary survey – non-breeding waterbird assemblage survey

The assemblage of non-breeding waterbirds at Baldoyle Bay SPA and Malahide Estuary SPA were recorded at the beginning of the VP watches (only if there were no disturbance events occurring) to identify areas of importance to bird species. This survey was carried out using the method used for the Irish Wetland Bird Survey (I-WeBS), as described in the *Counter Manual* for the scheme (BirdWatch Ireland and NPWS, undated), which itself is based on the 'look-see' method described by Bibby *et al.* (2000). The species, number of individuals and their main activity (e.g. feeding, roosting or loafing) was recorded. Additional species were recorded later in the survey if they were of significance (e.g. a large flock of a new species landed in the survey area).

3.3 Limitations

Non-breeding bird surveys are carried out during months when days are short and light levels are generally low. Survey dates were picked with weather conditions in mind so that surveys could be carried out with sufficient visibility. All surveys were carried out under reasonable weather conditions and there was no limitation to surveys as a result.

Although the recording of species assemblage was not the primary purpose of the survey, discrete flocks of non-breeding waterbirds present across Baldoyle Bay SPA and Malahide Estuary SPA were recorded at the start of each vantage point watch. Where new flocks arrived during the survey, these were also noted. At times, birds may have left and later returned as part of larger groups, creating the possibility that some individuals were counted more than once. This may consequently have resulted in a slight overestimation of the number of birds present during a given survey due to 'double counting'. However, any such overestimation would be minor and the results still provide a valuable indication of the species and numbers of birds present. Further, since the primary purpose of the surveys was to document disturbance events rather than produce precise population estimates, such potential overcounting is not considered a limitation in the context of this report.

4. Field survey results

4.1 Primary survey – non-breeding bird disturbance monitoring

No disturbance events as a result of aircrafts passing overhead on flight-paths to/from Dublin Airport were recorded in either Baldoyle Estuary SPA or Malahide Estuary SPA. The full detailed results of the disturbance monitoring are given in **Tables A1-A2** in **Appendix A** of this Report. Overall, there were 59 individual disturbance events recorded, and 57 of these disturbance events involved important bird species (according to the definition

[5] In this context, the term 'site' simply refers to the location where the birds were observed.
[6] https://www.flightradar24.com/53.29,-6.04/10. Accessed during survey period

in **Section 3.1**). The main cause of disturbance in Baldoyle Estuary SPA were walkers with dogs. In Malahide Estuary SPA walkers with dogs, sailing activities and trains were the main causes of disturbance.

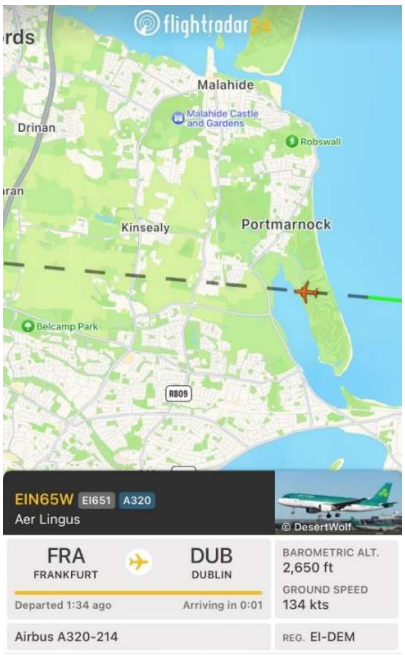
A total of eight disturbance events were recorded in Baldoyle Bay SPA. The species affected were curlew *Numenius arquata*, little egret *Egretta garzetta*, mallard *Anas platyrhynchos*, oystercatcher, and redshank. None of the species are SCI of Baldoyle Bay SPA however, oystercatcher and redshank are SCI of Malahide Estuary SPA. Seven of the events were categorised as level 3 (birds flew and abandoned the site) and all were caused by dog walkers. One event was level 2 (birds flew and returned) and was also caused by a dog walker.

A total of 51 disturbance events were recorded in Malahide Estuary SPA. These comprised sixteen level 3 events (flew away and did not return), 30 level 2 events (flew but soon returned), and seven level 1 events (behavioural change). All 51 events involved important species. Of these, 17 events involved SCI species of Malahide Estuary SPA, which were limited to three species: light-bellied brent goose, oystercatcher, and red-breasted merganser. Additional species which are SCI of other SPAs in Dublin Bay (including Baldoyle Bay SPA) were also disturbed, including black-tailed godwit, herring gull, black-headed gull, great black-backed gull *Larus marinus*, and red-breasted merganser. The only sources of disturbance were walkers (including those with dogs), trains, and sailing activities with a few construction related activities also.

Aircraft flying over Malahide Estuary SPA and Baldoyle Bay SPA were never recorded to fly below 300 m apart from an Irish Coast Guard helicopter which flew at approximately 198 m above Malahide Estuary SPA on 26 January 2024. While birds were present when the helicopter passed overhead, no birds were observed to be disturbed by the aircraft. The helicopter also returned approximately 56 minutes later but was flying at a much greater height and again, no birds were observed to be disturbed by the aircraft.

The typical flight path of aircraft recorded flying over Baldoyle Bay SPA were heading westward towards Dublin Airport as shown in **Plate 1**. Aircraft were observed less frequently over Malahide Estuary SPA with the typical flight paths heading eastward towards the Irish Sea from Dublin Airport.

Plate 1. Screenshot of typical flight path over Baldoyle Bay SPA.



4.2 Secondary survey – non-breeding waterbird assemblage survey

The full results of the non-breeding waterbird assemblage survey are given in **Tables B1-B6** in **Appendix B** of this Report. A summary of the results is provided in **Table 4-1** below. **Table 4-1** details the species recorded during the surveys, number of surveys that each species was recorded, and the minimum and maximum counts ('peak counts') of each species during any one visit. The locations of bird species recorded during the surveys are shown in **Figure 2a-2l**.

It can be seen from **Table 4-1** that a total of 34 non-breeding waterbird species were observed from the vantage points at Malahide Estuary SPA and Baldoyle Bay SPA, including 30 which are considered to be important, per

the definition in **Section 3.1**. Important species included bar-tailed godwit, black-headed gull *Chroicocephalus ridibundus*, black-tailed godwit, light-bellied brent goose, common gull *Larus canus*, cormorant *Phalacrocorax carbo*, curlew, dunlin, great black-backed gull, goldeneye, great-crested grebe, grey plover, herring gull *Larus argentatus*, knot, lapwing *Vanellus vanellus*, lesser black-backed gull, little egret, mallard, mute swan *Cygnus olor*, oystercatcher, red-breasted merganser, redshank, scaup *Anas marila*, shag *Phalacrocorax aristotelis*, shelduck, tufted duck *Aythya fuligula*, teal *Anas crecca*, turnstone *Arenaria interpres* and wigeon. Of these 30 important bird species, 23 are SCI species (thirteen species are SCIs of either Baldoyle Bay SPA or Malahide Estuary SPA and 18 species are SCIs of other SCIs in Dublin Bay). The SCI species and their relevant SPA designation are as follows and listed in **Table 4-1**:

- bar-tailed godwit (Malahide Estuary SPA, Baldoyle Bay SPA, South Dublin Bay & River Tolka Estuary SPA, North Bull Island SPA, Rogerstown Estuary SPA);
- black-headed gull (South Dublin Bay and River Tolka SPA, North Bull Island SPA, North-West Irish Sea SPA);
- black-tailed godwit (Malahide Estuary SPA, and North Bull Island SPA, Rogerstown Estuary SPA);
- cormorant (North-west Irish Sea SPA, Lambay Island SPA);
- common gull (North-West Irish Sea SPA);
- curlew (North Bull Island SPA);
- dunlin (Malahide Estuary SPA, South Dublin Bay and River Tolka SPA, North Bull Island SPA, and Rogerstown Estuary SPA);
- golden plover (North Bull Island SPA);
- goldeneye (Malahide Estuary SPA);
- great-crested grebe (Baldoyle Bay SPA);
- great black-backed gull (North-West Irish Sea SPA);
- grey plover (Malahide Estuary SPA, Baldoyle Bay SPA, South Dublin Bay and River Tolka SPA, North Bull Island SPA, and Rogerstown Estuary SPA);
- herring gull (North-West Irish Sea SPA and Lambay Island SPA);
- knot (Malahide Estuary SPA, South Dublin Bay and River Tolka SPA, North Bull Island SPA, and Rogerstown Estuary SPA);
- light-bellied brent geese (Malahide Estuary SPA, Baldoyle Bay SPA, South Dublin Bay and River Tolka SPA, North Bull Island SPA, and Rogerstown Estuary SPA);
- lesser black-backed gull (North-west Irish Sea SPA, Lambay Island SPA);
- oystercatcher (Malahide Estuary SPA, South Dublin Bay and River Tolka SPA, North Bull Island SPA, and Rogerstown Estuary SPA);
- red-breasted merganser (Malahide Estuary SPA);
- redshank (Malahide Estuary SPA, South Dublin Bay and River Tolka SPA, North Bull Island SPA, and Rogerstown Estuary SPA);
- shag (North-west Irish Sea SPA, Lambay Island SPA);
- shelduck (Malahide Estuary SPA, Baldoyle Bay SPA, North Bull Island SPA and Rogerstown Estuary SPA)
- teal (North Bull Island SPA); and,
- turnstone (North Bull Island SPA).

A total of 315 individual bird accounts were recorded across the two SPAs. All bird accounts recorded during the non-breeding bird assemblage surveys are listed in Tabes B1 – B6. These tables detail the species, number of individuals and their main activity noted. Light-bellied brent geese were recorded in the highest numbers, with 661 individuals recorded roosting in Malahide Estuary in February 2024 (Table B4), and 299 were recorded roosting in Baldoyle Bay in March 2024 (Table B5). Grey plover and dunlin were also recorded in relatively high numbers, with 230 grey plover recorded feeding in Baldoyle Bay and 380 dunlin recorded loafing in Baldoyle Bay, both in January 2024 (Table B1). The smallest number of individuals recorded were little egret, grey heron, shag, and tufted duck, with peak counts of just one individual. These species were typically recorded feeding or

roosting, and they were generally only observed once across all the survey visits in Baldoyle Bay and Malahide Estuary.

Table 4-1. Summarised results of 2024 non-breeding bird surveys in Malahide Estuary SPA and Baldoyle Bay SPA

Species name	Scientific name	British Trust for Ornithology (BTO) code	BoCCI Status	Are they an SCI of Malahide Estuary SPA or Baldoyle Bay SPA?	Are they an SCI on another SPA in Dublin Bay?	Number of surveys during which species was present	Minimum count (during any survey when present)	Peak count during one survey	Peak count survey date	Peak count location
Bar-tailed godwit	*Limosa lapponica*	BA	Red	Malahide Estuary SPA; Baldoyle Bay SPA	South Dublin Bay & River Tolka Estuary SPA; North Bull Island SPA; Rogerstown Estuary SPA	4	3	80	11/12/2024	Baldoyle Bay
Black-headed gull	*Chroicocephalus ridibundus*	BH	Amber	-	South Dublin Bay & River Tolka Estuary SPA, North Bull Island SPA, North-west Irish Sea SPA	12	1	50	16/02/2024	Malahide Estuary
Black-tailed godwit	*Limosa limosa*	BW	Red	Malahide Estuary SPA	North Bull Island SPA; Rogerstown Estuary SPA	2	2	44	15/03/2024	Baldoyle Bay
Brent goose (light-bellied)	*Branta bernicla*	BG	Amber	Malahide Estuary SPA; Baldoyle Bay SPA	South Dublin Bay & River Tolka Estuary SPA; North Bull Island SPA; Rogerstown Estuary SPA	12	1	661	16/02/2024	Malahide Estuary
Common gull	*Larus canus*	CM	Amber	-	North-west Irish Sea SPA	8	1	8	16/02/2024	Malahide Estuary
Cormorant	*Phalacrocorax carbo*	CA	Amber	-	North-west Irish Sea SPA,	8	1	10	22/10/2024	Malahide Estuary

Species name	Scientific name	British Trust for Ornithology (BTO) code	BoCCI Status	Are they an SCI of Malahide Estuary SPA or Baldoyle Bay SPA?	Are they an SCI on another SPA in Dublin Bay?	Number of surveys during which species was present	Minimum count (during any survey when present)	Peak count during one survey	Peak count survey date	Peak count location
					Lambay Island SPA					
Curlew	*Numenius arquata*	CU	Red	-	North Bull Island SPA	6	1	100	23/01/2024	Baldoyle Bay
Dunlin	*Calidris alpina*	DN	Red	Malahide Estuary SPA	South Dublin Bay & River Tolka Estuary SPA; North Bull Island SPA; Rogerstown Estuary SPA	4	10	380	23/01/2024	Baldoyle Bay
Golden plover	*Pluvialis apricaria*	GP	Red	Malahide Estuary SPA; Baldoyle Bay SPA	North Bull Island SPA	2	23	30	23/10/2024	Baldoyle Bay
Goldeneye	*Bucephala clangula*	GN	Red	Malahide Estuary SPA	-	2	4	21	08/03/2024	Malahide Estuary
Great black-backed gull	*Larus marinus*	GB	Green	-	-	8	2	6	23/01/2024	Baldoyle Bay
Great crested grebe	*Podiceps cristatus*	GG	Amber	Malahide Estuary SPA	-	7	1	40	12/12/2024	Malahide Estuary
Greenshank	*Tringa nebularia*	GK	Green	-	-	3	1	2	15/03/2024	Baldoyle Bay
Grey heron	*Ardea cinerea*	H.	Green	-	-	2	1	1	15/03/2024	Baldoyle Bay
Grey plover	*Pluvialis squatarola*	GV	Red	Malahide Estuary SPA; Baldoyle Bay SPA	South Dublin Bay & River Tolka Estuary SPA; North Bull Island SPA; Rogerstown Estuary SPA	3	5	230	23/01/2024	Baldoyle Bay
Herring gull	*Larus argentatus*	HG	Amber	-	North-west Irish Sea SPA,	12	1	101	23/10/2024	Baldoyle Bay

Species name	Scientific name	British Trust for Ornithology (BTO) code	BoCCI Status	Are they an SCI of Malahide Estuary SPA or Baldoyle Bay SPA?	Are they an SCI on another SPA in Dublin Bay?	Number of surveys during which species was present	Minimum count (during any survey when present)	Peak count during one survey	Peak count survey date	Peak count location
					Lambay Island SPA					
Knot	*Calidris canutus*	KN	Red	Malahide Estuary SPA	South Dublin Bay & River Tolka Estuary SPA; North Bull Island SPA; Rogerstown Estuary SPA	1	51	51	23/02/2024	Baldoyle Bay
Lapwing	*Vanellus vanellus*	L.	Red	-	-	4	42	155	23/01/2024	Baldoyle Bay
Lesser black-backed gull	*Larus fuscus*	LB	Amber	-	North-west Irish Sea SPA, Lambay Island SPA	3	1	3	24/01/2024	Baldoyle Bay
Little egret	*Egretta garzetta*	ET	Green	-	-	7	1	1	Multiple dates	Baldoyle Bay
Little grebe	*Tachybaptus ruficollis*	LG	Green	-	-	3	1	15	15/11/2024	Malahide Estuary
Mallard	*Anas platyrhynchos*	MA	Amber	-	-	12	1	14	12/12/2024	Malahide Estuary
Mute swan	*Cygnus olor*	MS	Amber	-	-	5	2	58	16/02/2024	Malahide Estuary
Oystercatcher	*Haematopus ostralegus*	OC	Red	Malahide Estuary SPA	South Dublin Bay & River Tolka Estuary SPA; North Bull Island SPA; Rogerstown Estuary SPA	12	1	36	22/10/2024	Malahide Estuary
Red-breasted merganser	*Mergus serrator*	RM	Amber	Malahide Estuary SPA	-	8	1	33	12/12/2024	Malahide Estuary
Redshank	*Tringa totanus*	RK	Red	Malahide Estuary SPA	South Dublin Bay & River	11	1	40	23/02/2024	Baldoyle Bay

Species name	Scientific name	British Trust for Ornithology (BTO) code	BoCCI Status	Are they an SCI of Malahide Estuary SPA or Baldoyle Bay SPA?	Are they an SCI on another SPA in Dublin Bay?	Number of surveys during which species was present	Minimum count (during any survey when present)	Peak count during one survey	Peak count survey date	Peak count location
					Tolka Estuary SPA; Rogerstown Estuary SPA, North Bull Island SPA					
Red-throated diver	*Gavia stellata*	RH	Amber	-	North-west Irish Sea SPA	1	2	2	12/12/2024	Malahide Estuary
Scaup	*Aythya marila*	SP	Red	-	-	1	5	5	23/02/2024	Malahide Estuary
Shag	*Phalacrocorax aristotelis*	SA	Amber	-	North-west Irish Sea SPA, Lambay Island SPA	1	1	1	24/02/2024	Baldoyle Bay
Shelduck	*Tadorna tadorna*	SU	Amber	Malahide Estuary SPA; Baldoyle Bay SPA	North Bull Island SPA; Rogerstown Estuary SPA	6	10	120	23/01/2024	Baldoyle Bay
Teal	*Anas crecca*	T.	Amber	-	North Bull Island SPA	5	1	85	22/11/2024	Baldoyle Bay
Tufted duck	*Aythya fuligula*	TU	Amber	-	-	1	1	1	26/01/2024	Malahide Estuary
Turnstone	*Arenaria interpres*	TT	Amber	-	-	1	4	4	26/01/2024	Malahide Estuary
Wigeon	*Mareca penelope*	WN	Amber	-	North Bull Island SPA	6	2	38	11/12/2024	Baldoyle Bay

Species highlighted in grey are important bird species.
*Species in **bold** are Annex 1 species.*

5. Discussion and conclusion

A total of 34 bird species were recorded between the two SPAs, with 30 considered to be important and 23 listed as SCI species of SPAs located within Dublin Bay.

Anthropogenic disturbance activities have the potential to impact and disturb important bird species including non-breeding waterbirds. No disturbance events as a result of aircraft passing overhead were recorded in either Baldoyle Estuary SPA or Malahide Estuary SPA. Instead, trains and walkers (including those with dogs) were the main sources of disturbance and accounted for 54% (n = 32) and 24% (n = 14), respectively, of all disturbance events. These results are similar to findings of other surveys carried out to assess disturbance to non-breeding waterbirds (Phalan and Nairn, 2009; NPWS, 2012, 2013; RPS, 2018). Disturbance assessments by NPWS carried out in 2011/2012 in Malahide Estuary SPA and Baldoyle Bay SPA found aircraft either did not have potential to cause disturbance or did not cause disturbance to waterbirds at these locations (NPWS, 2012, 2013). Likewise, RPS (2018) also recorded no disturbance events as a result of aircraft passing overhead on established flight-paths to/from Dublin Airport in Rogerstown Estuary SPA and Baldoyle Bay SPA. Instead, these reports found that the majority of disturbance events were caused by walkers with dogs.

Based on the results of the surveys, and supported by the literature and previous studies, it is concluded that non-breeding waterbirds at Baldoyle Estuary SPA and Malahide Estuary SPA are not presently disturbed by overflying aircraft operating within Dublin Airport flightpaths.

6. References

Bibby C., N. Burgess, D. Hill and Mustoe, S. (2000). *Bird Census Techniques*. 2nd edition. Academic Press.

BirdWatch Ireland and NPWS (undated). *Counter Manual – Guidelines for Irish Wetland Bird Survey counters*. Available from: https://birdwatchireland.ie/publications/i-webs-counter-manual/.

Gilbert, G., Stanbury, A. and Lewis, L. (2021). *Birds of Conservation Concern in Ireland 2020–2026*. *Irish Birds* **43**: pp 1-122.

NPWS (2013) *Malahide Estuary Special Protection Area (Site Code 4025).* Conservation Objectives Supporting Document. Version 1. Available from: https://www.npws.ie/sites/default/files/publications/pdf/004025_Malahide%20Estuary%20SPA%20Supporting%20Doc_V1.pdf

NPWS (2012) *Baldoyle Bay Special Protection Area (Site Code 4016)*. Conservation Objectives Supporting Document. Version 1. Available from: https://www.npws.ie/sites/default/files/publications/pdf/004016_Baldoyle%20Bay%20SPA%20Supporting%20Doc_V1.pdf

Phalan, B., & Nairn, R.G.W. (2007) *Disturbance to waterbirds in South Dublin bay*. Irish Birds 8, 223- 230.

RPS (2018). *Coastal Waterbird Disturbance Study for daa at Rogerstown Estuary SPA and Baldoyle Bay SPA*. Document reference NI1583.Rpt.Ec07D02. Coastal Waterbird Disturbance Study Report.

7. Figures

Figure 1: Location of Baldoyle Bay SPA and Malahide Estuary SPA in relation to Dublin Airport



Figure 2a: Baldoyle Bay SPA Non-Breeding Bird Survey Results Visit 1 (23 January 2024)



Figure 2b: Malahide Estuary SPA Non-Breeding Bird Survey Results Visit 1 (26 January 2024)

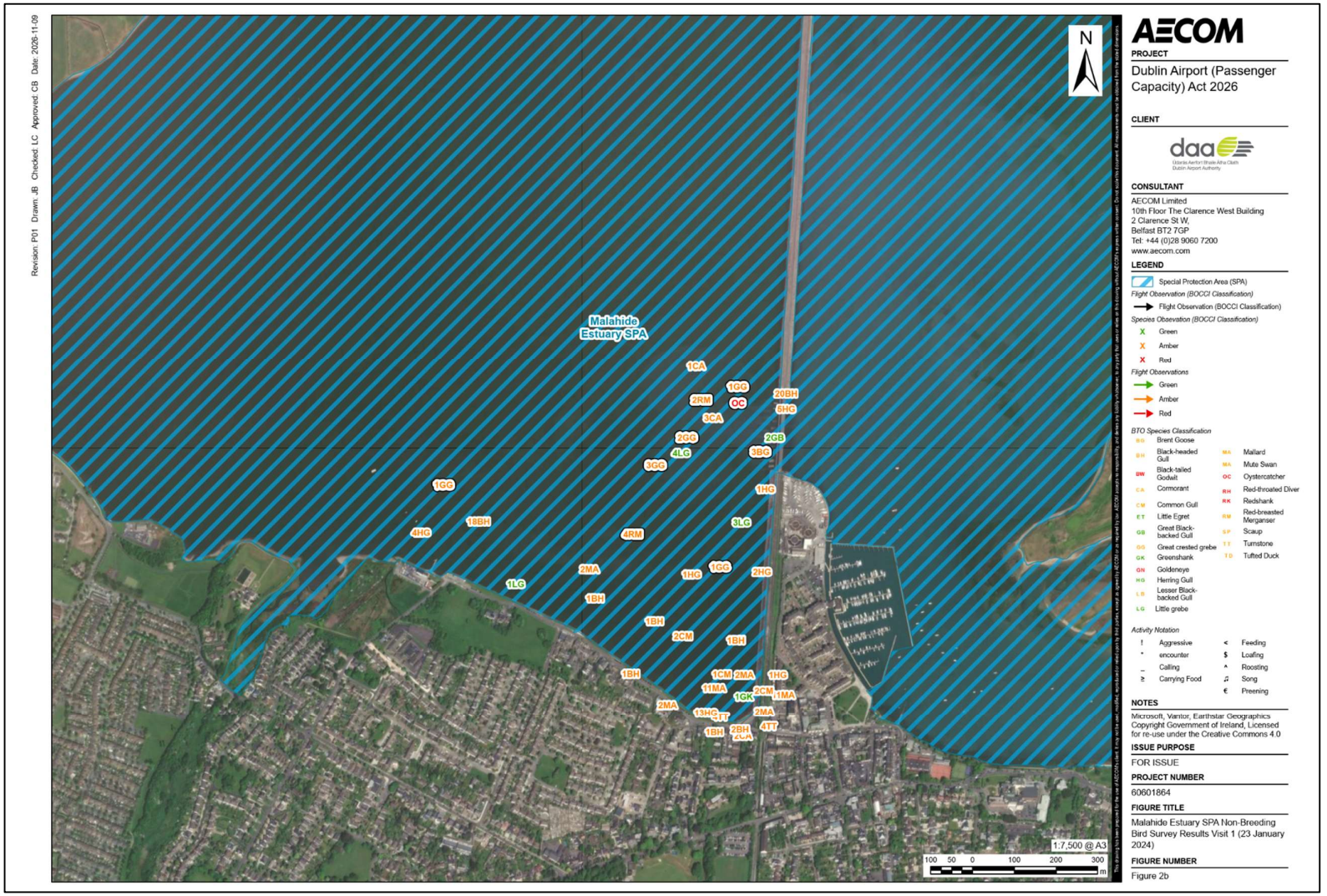


Figure 2c: Baldoyle Bay Non-Breeding Bird Survey Results Visit 2 (23 February 2024)



Figure 2d: Malahide Estuary SPA Non-Breeding Bird Survey Results Visit 2 (16 February 2024)



Figure 2e: Baldoyle Bay SPA Non-Breeding Bird Survey Results Visit 3 (15 March 2024)

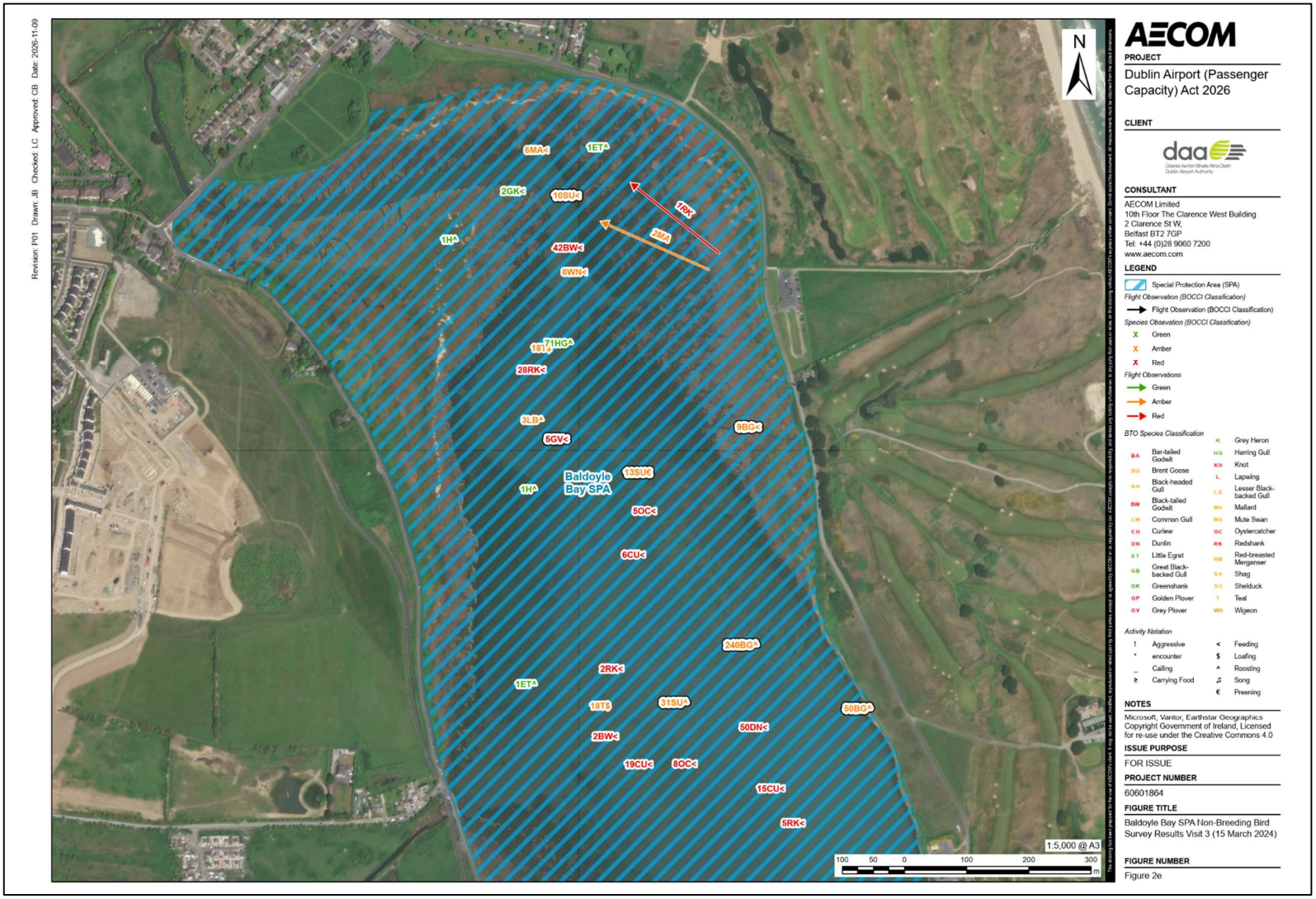


Figure 2f: Malahide Estuary SPA Non-Breeding Bird Survey Results Visit 3 (08 March 2024)

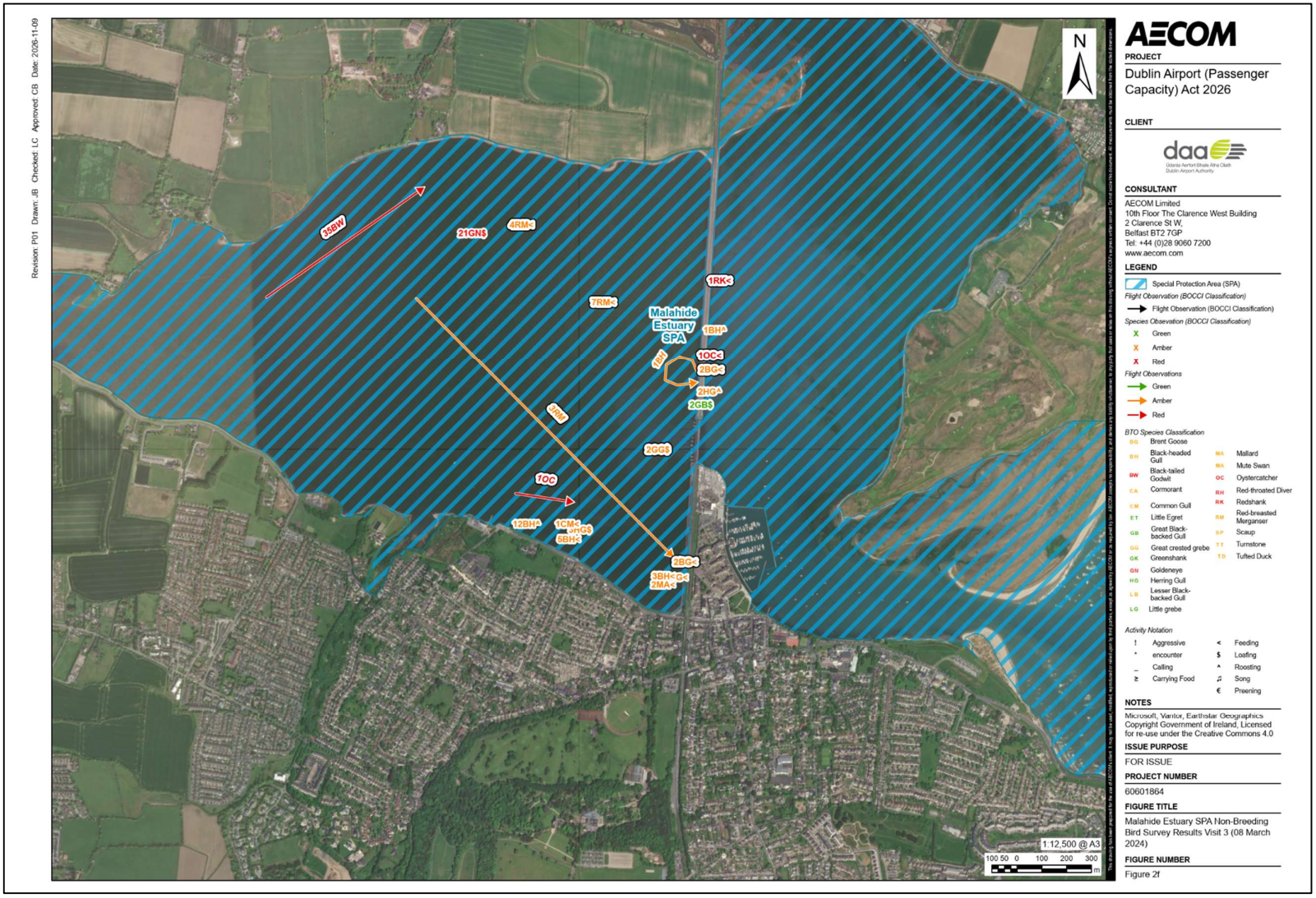


Figure 2g: Baldoyle Bay SPA Non-Breeding Bird Survey Results Visit 4 (23 October 2024)



Figure 2h: Malahide Estuary SPA Non-Breeding Bird Survey Results Visit 4 (22 October 2024)



Figure 2i: Baldoyle Bay SPA Non-Breeding Bird Survey Results Visit 5 (22 November2024)

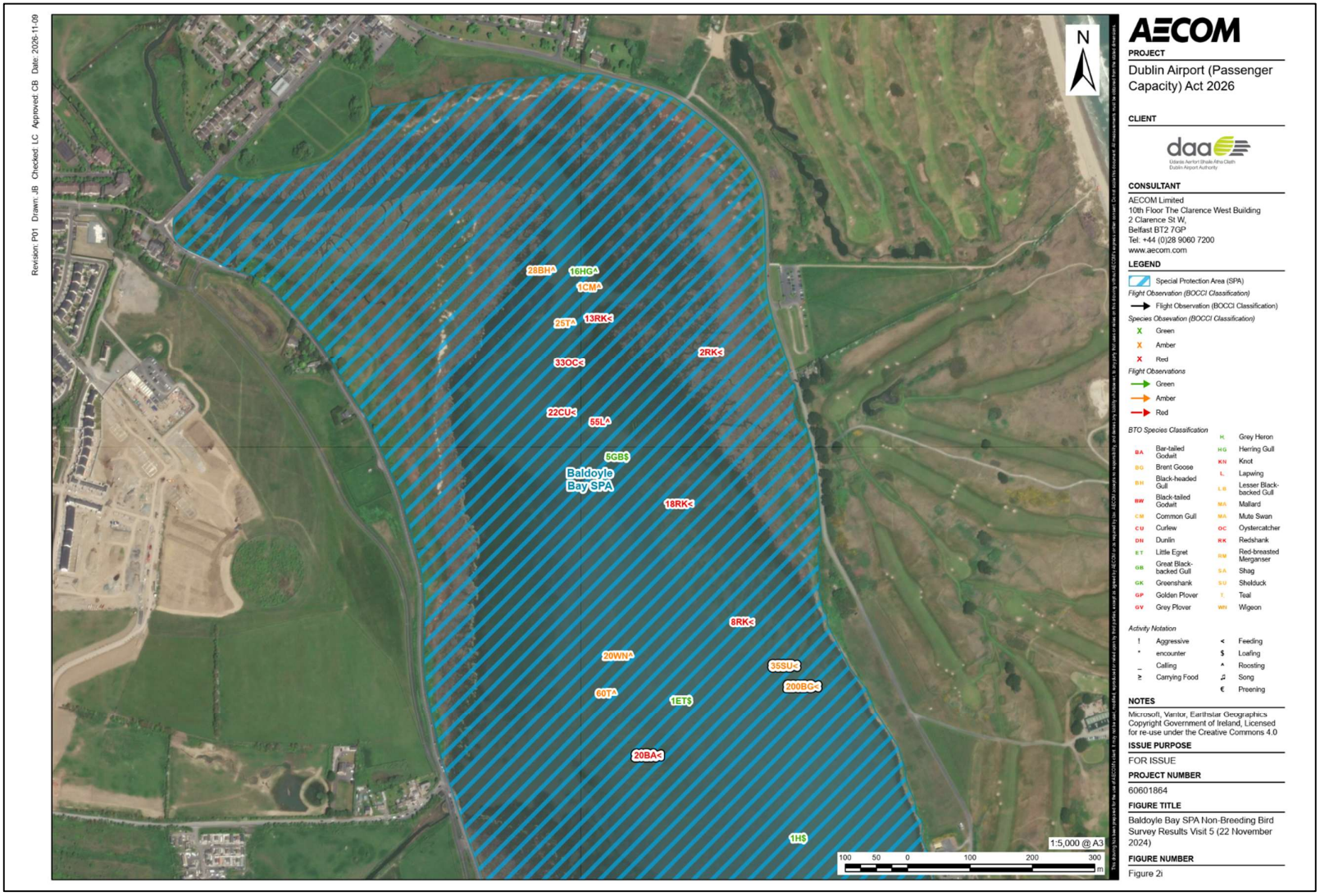


Figure 2j: Malahide Estuary SPA Non-Breeding Bird Survey Results Visit 5 (15 November 2024)



Figure 2k: Baldoyle Bay SPA Non-Breeding Bird Survey Results Visit 6 (11 December 2024)

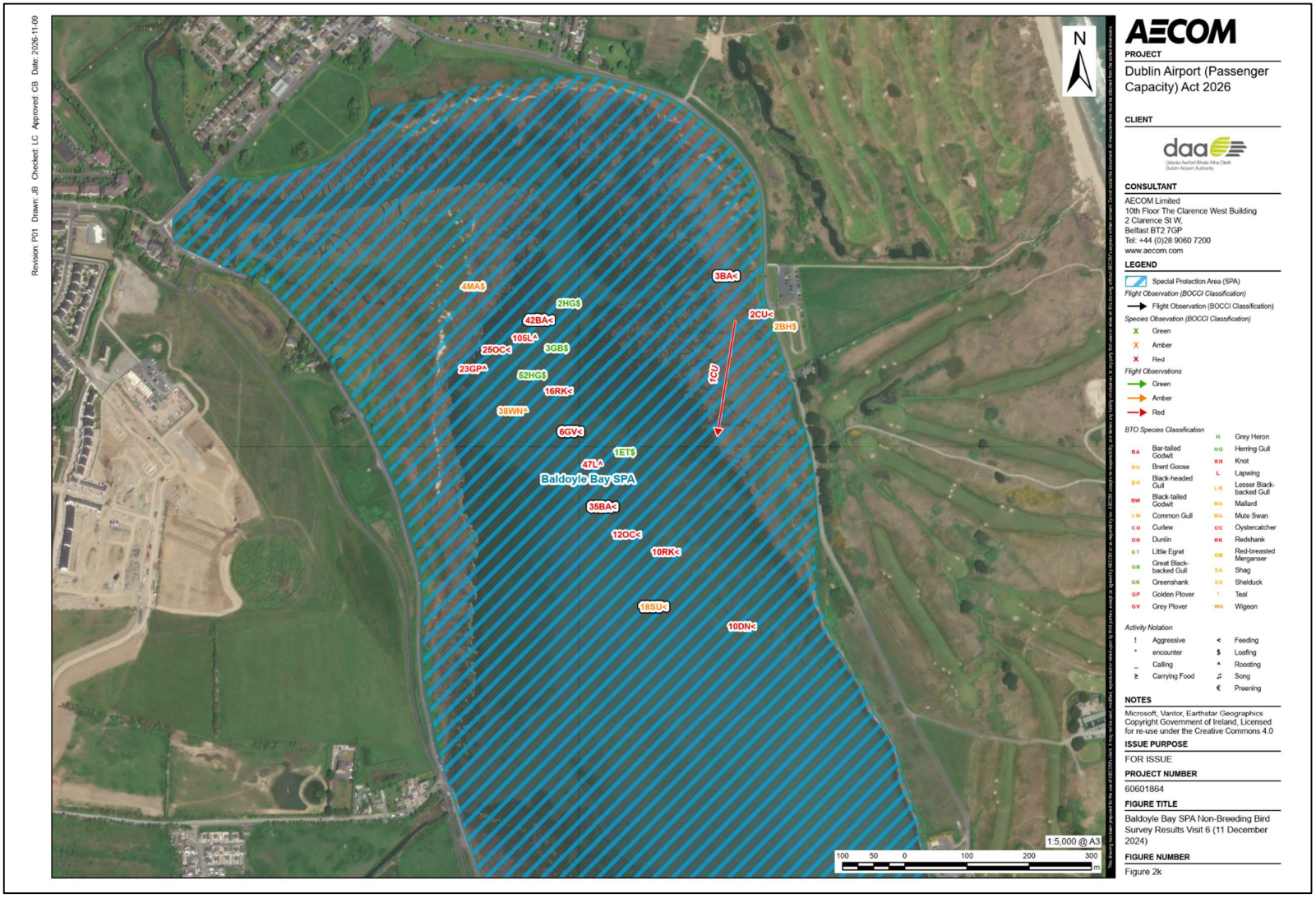


Figure 2I: Malahide Estuary SPA Non-Breeding Bird Survey Results Visit 6 (12 December 2024)



Appendix A Non-breeding bird disturbance monitoring survey results

Tables A1-A2 present the results of the non-breeding bird disturbance monitoring survey from the relevant SPAs between January and December 2024 (Non-Breeding Survey (NBS)1 to NBS 6).

Table A1. Baldoyle Bay SPA NBS1 – NBS6

Date	Time	Species affected	Number of individuals affected	Disturbance level	Disturbance source	Important species Y/N?
23/01/2024	11:03	Curlew	1	3 (flew away and did not return)	Walker (with dog)	✓
11/12/2024	12:09	Curlew	1	3 (flew away and did not return)	Walker	✓
15/03/2024	13:55	Little Egret	1	3 (flew away and did not return)	Buzzard overhead	✓
15/03/2024	11:05	Mallard	2	3 (flew away and did not return)	Walker (with dog)	
15/03/2024	13:55	Oystercatcher	3	3 (flew away and did not return)	Buzzard overhead	✓
15/03/2024	14:45	Redshank	1	2 (flew and returned)	Walker (with dog)	✓
23/01/2024	10:13	Redshank	2	3 (flew away and did not return)	Walker (with dog)	✓
15/03/2024	10:22	Redshank	1	3 (flew away and did not return)	Walker (with dog)	✓

Table A2. Malahide Estuary SPA NBS1 – NBS6

Date	Time	Species affected	Number of individuals affected	Disturbance level	Disturbance source	Important species Y/N?
26/01/2024	13:40	Black-headed gull	2	2 (flew and returned)	Sailing	✓
26/01/2024	13:43	Black-headed gull	10	2 (flew and returned)	Train (inbound & outbound)	✓
26/01/2024	14:09	Black-headed gull	10	2 (flew and returned)	Train (outbound)	✓
26/01/2024	14:16	Black-headed gull	5	2 (flew and returned)	Train (inbound)	✓
26/01/2024	14:40	Black-headed gull	5	2 (flew and returned)	Train (inbound)	✓
26/01/2024	14:47	Black-headed gull	5	2 (flew and returned)	Train (outbound)	✓
26/01/2024	14:56	Black-headed gull	5	2 (flew and returned)	Train (inbound)	✓
26/01/2024	15:07	Black-headed gull	12	2 (flew and returned)	Train (inbound & outbound)	✓
26/01/2024	15:26	Black-headed gull	15	2 (flew and returned)	Train (inbound)	✓
16/02/2024	11:26	Black-headed gull	7	2 (flew and returned)	Walker	✓
16/02/2024	13:05	Black-headed gull	3	2 (flew and returned)	Walker (with dog)	✓

Date	Time	Species affected	Number of individuals affected	Disturbance level	Disturbance source	Important species Y/N?
16/02/2024	14:33	Black-headed gull	2	3 (flew away and did not return)	Train	✓
16/02/2024	15:38	Black-headed gull	1	2 (flew and returned)	Train	✓
22/10/2024	10:11	Black-headed gull	5	2 (flew and returned)	Walker (with dog)	✓
22/10/2024	13:47	Black-headed gull	1	3 (flew away and did not return)	Walker (with dog)	✓
16/02/2024	12:29	Black-tailed godwit	35	3 (flew away and did not return)	Sailing	✓
16/02/2024	11:25	Brent goose (light-bellied)	2	3 (flew away and did not return)	Walker	✓
16/02/2024	12:47	Brent goose (light-bellied)	2	1 (raised heads, continued foraging)	Train	✓
22/10/2024	14:09	Brent goose (light-bellied)	1	3 (flew away and did not return)	Windsurfer + dog walker	✓
26/01/2024	10:51	Cormorant	2	1 (head lift)	Train (outbound)	✓
26/01/2024	13:40	Cormorant	1	2 (flew and returned)	Sailing	✓
26/01/2024	13:08	Great black-backed gull	1	2 (flew and returned)	Train (outbound)	✓
26/01/2024	13:16	Great black-backed gull	2	1 (head lift)	Train (inbound)	✓
26/01/2024	13:33	Great black-backed gull	2	2 (flew and returned)	Train (outbound)	✓
26/01/2024	13:40	Great black-backed gull	6	2 (flew and returned)	Sailing	✓
26/01/2024	14:28	Great black-backed gull	2	2 (flew and returned)	Train	✓
26/01/2024	14:47	Great black-backed gull	1	2 (flew and returned)	Train (outbound)	✓
26/01/2024	15:07	Great black-backed gull	2	2 (flew and returned)	Train (inbound & outbound)	✓
26/01/2024	13:43	Herring gull	5	2 (flew and returned)	Train (inbound & outbound)	✓
26/01/2024	14:09	Herring gull	1	2 (flew and returned)	Train (outbound)	✓
26/01/2024	14:28	Herring gull	2	2 (flew and returned)	Train	✓
26/01/2024	14:40	Herring gull	8	2 (flew and returned)	Train (inbound)	✓
26/01/2024	15:07	Herring gull	5	2 (flew and returned)	Train (inbound & outbound)	
26/01/2024	15:26	Herring gull	6	2 (flew and returned)	Train (inbound)	✓
22/10/2024	11:25	Herring gull	1	3 (flew away and did not return)	Sailing	✓
22/10/2024	13:13	Herring gull	1	3 (flew away and did not return)	Construction vehicle	✓
16/02/2024	12:01	Mallard	1	3 (flew away and did not return)	Walker	
26/01/2024	09:48	Oystercatcher	6	1 (head lift)	Train (inbound)	✓
26/01/2024	09:48	Oystercatcher	1	2 (flew, returned)	Train (inbound)	✓
26/01/2024	09:53	Oystercatcher	6	1 (head lift)	Train (inbound)	✓

Date	Time	Species affected	Number of individuals affected	Disturbance level	Disturbance source	Important species Y/N?
26/01/2024	09:53	Oystercatcher	1	2 (flew and returned)	Train (inbound)	✓
26/01/2024	10:04	Oystercatcher	3	1 (head lift)	Train (outbound)	✓
26/01/2024	10:07	Oystercatcher	4	1 (head lift)	Train (outbound)	✓
16/02/2024	12:01	Oystercatcher	1	3 (flew away and did not return)	Walker	✓
16/02/2024	12:12	Oystercatcher	1	3 (flew away and did not return)	Sailing	✓
16/02/2024	13:08	Oystercatcher	1	3 (flew away and did not return)	Train	✓
22/10/2024	12:20	Oystercatcher	1	3 (flew away and did not return)	Construction personnel	✓
22/10/2024	12:40	Oystercatcher	1	3 (flew away and did not return)	Sailing	✓
22/10/2024	13:20	Oystercatcher	1	3 (flew away and did not return)	Construction work	✓
22/10/2024	15:29	Oystercatcher	1	3 (flew away and did not return)	Pedestrians	✓
16/02/2024	12:23	Red-breasted merganser	3	3 (flew away and did not return)	Sailing	✓

Appendix B Non-breeding bird assemblage survey results from January to December 2024

Tables B1-B6 present the results of each non-breeding bird survey completed for the relevant SPAs between January and December 2024. As mentioned, in Section 3.3 Limitations, bird numbers reported in **Tables B1-B6** may slightly overestimate actual numbers due to possible double counting. This is not considered a limitation, as the surveys were designed to record disturbance events rather than provide precise population estimates.

Table B1. Baldoyle Bay non-breeding bird assemblage survey – 23 January 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BH	Black-headed gull	*Chroicocephalus ridibundus*	27	Roosting
BG	Light-bellied brent goose	*Branta bernicla*	13	Feeding
BG	Light-bellied brent goose	*Branta bernicla*	75	Feeding
BG	Light-bellied brent goose	*Branta bernicla*	35	Feeding
CU	Curlew	*Numenius arquata*	5	Feeding
CU	Curlew	*Numenius arquata*	23	Roosting
CU	Curlew	*Numenius arquata*	6	Feeding
CU	Curlew	*Numenius arquata*	65	Feeding
CU	Curlew	*Numenius arquata*	1	Flight out
DN	Dunlin	*Calidris alpina*	200	Loafing
DN	Dunlin	*Calidris alpina*	180	Feeding
GB	Great black-backed gull	*Larus marinus*	6	Roosting
GV	Grey plover	*Pluvialis squatarola*	230	Feeding
HG	Herring gull	*Larus argentatus*	2	Roosting
HG	Herring gull	*Larus argentatus*	2	Roosting
HG	Herring gull	*Larus argentatus*	9	Roosting
L	Lapwing	*Vanellus vanellus*	45	Roosting
L	Lapwing	*Vanellus vanellus*	110	Roosting
LB	Lesser black-backed gull	*Larus fuscus*	3	Roosting
MA	Mallard	*Anas platyrhynchos*	2	Loafing
MS	Mute swan	*Cygnus olor*	3	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	30	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	13	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	5	Feeding
RK	Redshank	*Tringa totanus*	2	Feeding
RK	Redshank	*Tringa totanus*	6	Feeding
RK	Redshank	*Tringa totanus*	4	Feeding
RK	Redshank	*Tringa totanus*	3	Feeding
RK	Redshank	*Tringa totanus*	25	Feeding
RK	Redshank	*Tringa totanus*	2	Flight out
SU	Shelduck	*Tadorna tadorna*	90	Feeding
SU	Shelduck	*Tadorna tadorna*	30	Loafing
T	Teal	*Anas crecca*	17	Roosting
T	Teal	*Anas crecca*	4	Feeding
WN	Wigeon	*Mareca penelope*	28	Loafing

Table B2. Malahide Estuary non-breeding bird assemblage survey – 26 January 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BH	Black-headed gull	*Chroicocephalus ridibundus*	18	Feeding and/or loafing
BH	Black-headed gull	*Chroicocephalus ridibundus*	1	Feeding and/or loafing
BH	Black-headed gull	*Chroicocephalus ridibundus*	1	Feeding and/or loafing
BH	Black-headed gull	*Chroicocephalus ridibundus*	1	Feeding and/or loafing
BH	Black-headed gull	*Chroicocephalus ridibundus*	1	Feeding and/or loafing
BH	Black-headed gull	*Chroicocephalus ridibundus*	2	Feeding and/or loafing
BH	Black-headed gull	*Chroicocephalus ridibundus*	20	Feeding and/or loafing
BG	Light-bellied brent goose	*Branta bernicla*	3	Feeding and/or loafing
CM	Common gull	*Larus canus*	2	Feeding and/or loafing
CM	Common gull	*Larus canus*	2	Feeding and/or loafing
CM	Common gull	*Larus canus*	1	Feeding and/or loafing
CA	Cormorant	*Phalacrocorax carbo*	3	Feeding and/or loafing
CA	Cormorant	*Phalacrocorax carbo*	2	Feeding and/or loafing
CA	Cormorant	*Phalacrocorax carbo*	1	Feeding and/or loafing
GB	Great black-backed gull	*Larus marinus*	2	Feeding and/or loafing
GG	Great crested grebe	*Podiceps cristatus*	1	Feeding and/or loafing
GG	Great crested grebe	*Podiceps cristatus*	1	Feeding and/or loafing
GG	Great crested grebe	*Podiceps cristatus*	2	Feeding and/or loafing
GG	Great crested grebe	*Podiceps cristatus*	1	Feeding and/or loafing
GK	Greenshank	*Tringa nebularia*	1	Feeding and/or loafing
HG	Herring gull	*Larus argentatus*	4	Feeding and/or loafing
HG	Herring gull	*Larus argentatus*	1	Feeding and/or loafing
HG	Herring gull	*Larus argentatus*	13	Feeding and/or loafing
HG	Herring gull	*Larus argentatus*	1	Feeding and/or loafing
HG	Herring gull	*Larus argentatus*	2	Feeding and/or loafing
HG	Herring gull	*Larus argentatus*	1	Feeding and/or loafing
HG	Herring gull	*Larus argentatus*	5	Feeding and/or loafing
LG	Little grebe	*Tachybaptus ruficollis*	3	Feeding and/or loafing
LG	Little grebe	*Tachybaptus ruficollis*	4	Feeding and/or loafing
LG	Little grebe	*Tachybaptus ruficollis*	1	Feeding and/or loafing
MA	Mallard	*Anas platyrhynchos*	1	Feeding and/or loafing
MA	Mallard	*Anas platyrhynchos*	2	Feeding and/or loafing
MA	Mallard	*Anas platyrhynchos*	11	Feeding and/or loafing
MA	Mallard	*Anas platyrhynchos*	2	Feeding and/or loafing
MA	Mallard	*Anas platyrhynchos*	11	Feeding and/or loafing
MA	Mallard	*Anas platyrhynchos*	2	Feeding and/or loafing
OC	Oystercatcher	*Haematopus ostralegus*	6	Feeding and/or loafing
RM	Red-breasted merganser	*Mergus serrator*	2	Feeding and/or loafing
RM	Red-breasted merganser	*Mergus serrator*	4	Feeding and/or loafing
RK	Redshank	*Tringa totanus*	1	Feeding and/or loafing
RK	Redshank	*Tringa totanus*	1	Feeding and/or loafing

BTO code	Common name	Scientific name	Number of individuals	Activity
TT	Turnstone	*Arenaria interpres*	4	Feeding and/or loafing
TT	Turnstone	*Arenaria interpres*	4	Feeding and/or loafing

Table B3. Baldoyle Bay non-breeding bird assemblage survey – 23 February 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BA	Bar-tailed godwit	*Limosa lapponica*	3	Feeding
BH	Black-headed gull	*Chroicocephalus ridibundus*	42	Feeding
BG	Brent goose	*Branta bernicla*	150	Feeding
BG	Brent goose	*Branta bernicla*	85	Feeding
DN	Dunlin	*Calidris alpina*	45	Feeding
GB	Great black-backed gull	*Larus marinus*	2	Roosting
HG	Herring gull	*Larus argentatus*	2	Feeding
KN	Knot	*Calidris canutus*	51	Feeding
ET	Little egret	*Egretta garzetta*	1	Feeding
MA	Mallard	*Anas platyrhynchos*	6	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	20	Roosting
OC	Oystercatcher	*Haematopus ostralegus*	13	Feeding
RM	Red-breasted merganser	*Mergus serrator*	1	Feeding
RK	Redshank	*Tringa totanus*	40	Feeding
SA	Shag	*Phalacrocorax aristotelis*	1	Feeding
SU	Shelduck	*Tadorna tadorna*	17	Feeding
SU	Shelduck	*Tadorna tadorna*	41	Feeding
T	Teal	*Anas crecca*	1	Loafing
WN	Wigeon	*Mareca penelope*	2	Feeding

Table B4. Malahide Estuary non-breeding bird assemblage survey – 16 February 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BH	Black-headed gull	*Chroicocephalus ridibundus*	7	Loafing
BH	Black-headed gull	*Chroicocephalus ridibundus*	6	Roosting and feeding
BH	Black-headed gull	*Chroicocephalus ridibundus*	8	Loafing and feeding
BH	Black-headed gull	*Chroicocephalus ridibundus*	15	Loafing, feeding, and roosting
BH	Black-headed gull	*Chroicocephalus ridibundus*	2	Roosting
BH	Black-headed gull	*Chroicocephalus ridibundus*	7	Flight out
BH	Black-headed gull	*Chroicocephalus ridibundus*	3	Flight out
BH	Black-headed gull	*Chroicocephalus ridibundus*	2	Flight out
BG	Light-bellied brent goose	*Branta bernicla*	2	Roosting
BG	Light-bellied brent goose	*Branta bernicla*	600	Roosting
BG	Light-bellied brent goose	*Branta bernicla*	45	Loafing
BG	Light-bellied brent goose	*Branta bernicla*	12	Feeding
BG	Light-bellied brent goose	*Branta bernicla*	2	Flight out
CM	Common gull	*Larus canus*	6	Loafing
CM	Common gull	*Larus canus*	2	Loafing
GN	Goldeneye	*Bucephala clangula*	8	Feeding
GN	Goldeneye	*Bucephala clangula*	4	Feeding
GG	Great crested grebe	*Podiceps cristatus*	6	Loafing
GG	Great crested grebe	*Podiceps cristatus*	3	Loafing
GK	Greenshank	*Tringa nebularia*	1	Feeding
HG	Herring gull	*Larus argentatus*	12	Loafing
HG	Herring gull	*Larus argentatus*	3	Loafing
HG	Herring gull	*Larus argentatus*	5	Loafing
HG	Herring gull	*Larus argentatus*	2	Roosting
LG	Little grebe	*Tachybaptus ruficollis*	1	Feeding
MA	Mallard	*Anas platyrhynchos*	5	Loafing
MA	Mallard	*Anas platyrhynchos*	1	Flight out
MS	Mute swan	*Cygnus olor*	7	Feeding
MS	Mute swan	*Cygnus olor*	51	Loafing, feeding, and roosting
OC	Oystercatcher	*Haematopus ostralegus*	1	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	7	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	1	Flight out
OC	Oystercatcher	*Haematopus ostralegus*	1	Flight out
RM	Red-breasted merganser	*Mergus serrator*	18	Feeding
RM	Red-breasted merganser	*Mergus serrator*	2	Loafing
RK	Redshank	*Tringa totanus*	2	Feeding
SP	Scaup	*Aythya marila*	5	Feeding
TU	Tufted duck	*Aythya fuligula*	1	Roosting

Table B5. Baldoyle Bay non-breeding bird assemblage survey – 15 March 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BW	Black-tailed godwit	*Limosa limosa*	42	Feeding
BW	Black-tailed godwit	*Limosa limosa*	2	Feeding
BG	Light-bellied brent goose	*Branta bernicla*	9	Feeding
BG	Light-bellied brent goose	*Branta bernicla*	50	Roosting
BG	Light-bellied brent goose	*Branta bernicla*	240	Roosting
CU	Curlew	*Numenius arquata*	6	Feeding
CU	Curlew	*Numenius arquata*	15	Feeding
CU	Curlew	*Numenius arquata*	19	Feeding
DN	Curlew	*Calidris alpina*	50	Feeding
GK	Greenshank	*Tringa nebularia*	2	Feeding
H	Grey heron	*Ardea cinerea*	1	Roosting
H	Grey heron	*Ardea cinerea*	1	Roosting
GV	Grey plover	*Pluvialis squatarola*	5	Feeding
HG	Herring gull	*Larus argentatus*	71	Roosting
LB	Lesser Black-backed gull	*Larus fuscus*	3	Roosting
ET	Little egret	*Egretta garzetta*	1	Roosting
ET	Little egret	*Egretta garzetta*	1	Roosting
MA	Mallard	*Anas platyrhynchos*	6	Feeding
MA	Mallard	*Anas platyrhynchos*	2	Flight out
OC	Oystercatcher	*Haematopus ostralegus*	5	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	8	Feeding
RK	Redshank	*Tringa totanus*	28	Feeding
RK	Redshank	*Tringa totanus*	2	Feeding
RK	Redshank	*Tringa totanus*	5	Feeding
RK	Redshank	*Tringa totanus*	1	Flight out
SU	Shelduck	*Tadorna tadorna*	10	Feeding
SU	Shelduck	*Tadorna tadorna*	13	Preening
SU	Shelduck	*Tadorna tadorna*	31	Roosting
T	Teal	*Anas crecca*	18	Loafing
T	Teal	*Anas crecca*	18	Loafing
WN	Wigeon	*Mareca penelope*	8	Feeding

Table B6. Malahide Estuary non-breeding bird assemblage survey – 08 March 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BH	Black-headed gull	*Chroicocephalus ridibundus*	12	Roosting
BH	Black-headed gull	*Chroicocephalus ridibundus*	3	Feeding
BH	Black-headed gull	*Chroicocephalus ridibundus*	5	Feeding
BH	Black-headed gull	*Chroicocephalus ridibundus*	1	Roosting
BH	Black-headed gull	*Chroicocephalus ridibundus*	1	Flight out
BW	Black-tailed godwit	*Limosa limosa*	35	Flight out
BG	Light-bellied brent goose	*Branta bernicla*	2	Feeding
BG	Light-bellied brent goose	*Branta bernicla*	2	Feeding
CM	Common gull	*Larus canus*	1	Feeding
GN	Goldeneye	*Bucephala clangula*	21	Loafing
GB	Great black-backed gull	*Larus marinus*	2	Loafing
GG	Great crested grebe	*Podiceps cristatus*	2	Loafing
HG	Herring gull	*Larus argentatus*	5	Feeding
HG	Herring gull	*Larus argentatus*	3	Loafing
HG	Herring gull	*Larus argentatus*	2	Roosting
MA	Mallard	*Anas platyrhynchos*	2	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	1	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	1	Flight out
RM	Red-breasted merganser	*Mergus serrator*	4	Feeding
RM	Red-breasted merganser	*Mergus serrator*	7	Feeding
RM	Red-breasted merganser	*Mergus serrator*	3	Flight out
RK	Redshank	*Tringa totanus*	1	Feeding

Table B7. Malahide Estuary non-breeding bird assemblage survey – 22 October 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BH	Black-headed gull	*Chroicocephalus ridibundus*	3	Loafing
BH	Black-headed gull	*Chroicocephalus ridibundus*	2	Roosting
BH	Black-headed gull	*Chroicocephalus ridibundus*	1	Flight (disturbed)
BG	Light-bellied brent goose	*Branta bernicla*	6	Feeding
CM	Common gull	*Larus canus*	2	Loafing
CA	Cormorant	*Phalacrocorax carbo*	8	Feeding
CA	Cormorant	*Phalacrocorax carbo*	2	Feeding
GB	Great black-backed gull	*Larus marinus*	2	Roosting
GG	Great crested grebe	*Podiceps cristatus*	7	Feeding
GG	Great crested grebe	*Podiceps cristatus*	2	Feeding
HG	Herring gull	*Larus argentatus*	12	Roosting
HG	Herring gull	*Larus argentatus*	8	Loafing
HG	Herring gull	*Larus argentatus*	5	Roosting
HG	Herring gull	*Larus argentatus*	1	Flight (disturbed)
ET	Little egret	*Egretta garzetta*	1	Feeding
MA	Mallard	*Anas platyrhynchos*	2	Roosting
MS	Mute swan	*Cygnus olor*	14	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	35	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	1	Flight (disturbed)
RM	Red-breasted merganser	*Mergus serrator*	18	Loafing
RM	Red-breasted merganser	*Mergus serrator*	1	Feeding
RK	Redshank	*Tringa totanus*	2	Feeding
RK	Redshank	*Tringa totanus*	1	Feeding

Table B8. Baldoyle Bay non-breeding bird assemblage survey – 23 October 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BA	Bar-tailed godwit	*Limosa lapponica*	12	Feeding
BH	Black-headed gull	*Chroicocephalus ridibundus*	25	Roosting
BH	Black-headed gull	*Chroicocephalus ridibundus*	21	Roosting
BH	Black-headed gull	*Chroicocephalus ridibundus*	1	Roosting
BG	Light-bellied brent goose	*Branta bernicla*	65	Feeding
BG	Light-bellied brent goose	*Branta bernicla*	4	Feeding
CM	Common gull	*Larus canus*	3	Roosting
CU	Curlew	*Numenius arquata*	16	Feeding
GP	Golden plover	*Pluvialis apricaria*	30	Roosting
HG	Herring gull	*Larus argentatus*	61	Roosting
HG	Herring gull	*Larus argentatus*	40	Roosting
L.	Lapwing	*Vanellus vanellus*	82	Feeding
L.	Lapwing	*Vanellus vanellus*	42	Feeding
ET	Little egret	*Egretta garzetta*	1	Flight (disturbed)
ET	Little egret	*Egretta garzetta*	1	Roosting
ET	Little egret	*Egretta garzetta*	1	Feeding
ET	Little egret	*Egretta garzetta*	1	Feeding
MA	Mallard	*Anas platyrhynchos*	6	Roosting
OC	Oystercatcher	*Haematopus ostralegus*	21	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	12	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	6	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	3	Flight (disturbed)
RK	Redshank	*Tringa totanus*	18	Feeding
RK	Redshank	*Tringa totanus*	10	Feeding
RK	Redshank	*Tringa totanus*	1	Flight (disturbed)
T.	Teal	*Anas crecca*	50	Roosting
WN	Wigeon	*Mareca penelope*	36	Roosting
WN	Wigeon	*Mareca penelope*	33	Roosting

Table B9. Malahide Estuary non-breeding bird assemblage survey – 15 November 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BH	Black-headed gull	*Chroicocephalus ridibundus*	23	Loafing
BH	Black-headed gull	*Chroicocephalus ridibundus*	5	Flight (disturbed)
BG	Light-bellied brent goose	*Branta bernicla*	63	Loafing
BG	Light-bellied brent goose	*Branta bernicla*	1	Flight (disturbed)
GG	Great crested grebe	*Podiceps cristatus*	8	Feeding
GG	Great crested grebe	*Podiceps cristatus*	2	Feeding
HG	Herring gull	*Larus argentatus*	32	Loafing
HG	Herring gull	*Larus argentatus*	1	Flight (disturbed)
LB	Lesser black-backed gull	*Larus fuscus*	1	Loafing
LG	Little grebe	*Tachybaptus ruficollis*	15	Loafing
LG	Little grebe	*Tachybaptus ruficollis*	2	Feeding
MS	Mute swan	*Cygnus olor*	17	Roosting
MS	Mute swan	*Cygnus olor*	2	Feeding
OC.	Oystercatcher	*Haematopus ostralegus*	1	Flight (disturbed)
RM	Red-breasted merganser	*Mergus serrator*	12	Feeding

Table B10. Baldoyle Bay non-breeding bird assemblage survey – 22 November 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BA	Bar-tailed godwit	*Limosa lapponica*	20	Feeding
BH	Black-headed gull	*Chroicocephalus ridibundus*	28	Roosting
BG	Light-bellied brent goose	*Branta bernicla*	200	Feeding
CM	Common gull	*Larus canus*	1	Roosting
CU	Curlew	*Numenius arquata*	22	Feeding
GB	Great black-backed gull	*Larus marinus*	5	Loafing
GG	Great crested grebe	*Podiceps cristatus*	4	Loafing
H.	Grey heron	*Ardea cinerea*	1	Loafing
HG	Herring gull	*Larus argentatus*	16	Roosting
L.	Lapwing	*Vanellus vanellus*	55	Roosting
ET	Little egret	*Egretta garzetta*	1	Loafing
OC	Oystercatcher	*Haematopus ostralegus*	33	Feeding
RM	Red-breasted merganser	*Mergus serrator*	4	Loafing
RK	Redshank	*Tringa totanus*	18	Feeding
RK	Redshank	*Tringa totanus*	13	Feeding
RK	Redshank	*Tringa totanus*	8	Feeding
RK	Redshank	*Tringa totanus*	2	Feeding
SU	Shelduck	*Tadorna tadorna*	35	Feeding
T.	Teal	*Anas crecca*	60	Roosting
T.	Teal	*Anas crecca*	25	Roosting
WN	Wigeon	*Mareca penelope*	20	Roosting

Table B11. Malahide Estuary non-breeding bird assemblage survey – 12 December 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BH	Black-headed gull	*Chroicocephalus ridibundus*	3	Feeding
BG	Brent goose	*Branta bernicla*	8	Feeding
CM	Common gull	*Larus canus*	2	Feeding
GG	Great crested grebe	*Podiceps cristatus*	40	Feeding
HG	Herring gull	*Larus argentatus*	15	Feeding
ET	Little egret	*Egretta garzetta*	1	Feeding
MA	Mallard	*Anas platyrhynchos*	14	Loafing
MS	Mute swan	*Cygnus olor*	21	Loafing
OC	Oystercatcher	*Haematopus ostralegus*	8	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	7	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	1	Flight (disturbed)
OC	Oystercatcher	*Haematopus ostralegus*	1	Flight (disturbed)
RM	Red-breasted merganser	*Mergus serrator*	33	Feeding
RK	Redshank	*Tringa totanus*	1	Feeding
RH	Red-throated diver	*Gavia stellata*	2	Feeding

Table B12. Baldoyle Bay non-breeding bird assemblage survey – 11 December 2024

BTO code	Common name	Scientific name	Number of individuals	Activity
BA	Bar-tailed godwit	*Limosa lapponica*	42	Feeding
BA	Bar-tailed godwit	*Limosa lapponica*	35	Feeding
BA	Bar-tailed godwit	*Limosa lapponica*	3	Feeding
BH	Black-headed gull	*Chroicocephalus ridibundus*	2	Loafing
BG	Brent goose	*Branta bernicla*	9	Feeding
CU	Curlew	*Numenius arquata*	2	Feeding
CU	Curlew	*Numenius arquata*	1	Flight (disturbed)
DN	Dunlin	*Calidris alpina*	10	Feeding
GP	Golden plover	*Pluvialis apricaria*	23	Roosting
GB	Great black-backed gull	*Larus marinus*	3	Loafing
GV	Grey plover	*Pluvialis squatarola*	6	Feeding
HG	Herring gull	*Larus argentatus*	52	Loafing
HG	Herring gull	*Larus argentatus*	2	Loafing
L.	Lapwing	*Vanellus vanellus*	105	Roosting
L.	Lapwing	*Vanellus vanellus*	47	Roosting
ET	Little egret	*Egretta garzetta*	1	Loafing
MA	Mallard	*Anas platyrhynchos*	4	Loafing
OC	Oystercatcher	*Haematopus ostralegus*	25	Feeding
OC	Oystercatcher	*Haematopus ostralegus*	12	Feeding
RK.	Redshank	*Tringa totanus*	16	Feeding
RK	Redshank	*Tringa totanus*	10	Feeding
SU	Shelduck	*Tadorna tadorna*	18	Feeding
WN	Wigeon	*Mareca penelope*	38	Roosting

Appendix E Information on European sites within the potential ZoI of the Proposed Order

Below are the details of the European sites which were determined to be within the potential ZoI of the Proposed Order.

Malahide Estuary SPA

Site code: 004025

Local planning authority(ies): Dublin County Council

Special Conservation Interests:

Non-breeding waterbirds:

- Great crested grebe [A005]
- Light-bellied brent goose [A046]
- Shelduck [A048]
- Pintail [A054]
- Goldeneye [A067]
- Red-breasted merganser [A069]
- Oystercatcher [A130]
- Golden plover [A140]
- Grey plover [A141]
- Knot [A143]
- Dunlin [A149]
- Black-tailed godwit [A156]
- Bar-tailed godwit [A157]
- Redshank [A162]

Wetland habitats supporting waterbirds:

- Wetland and waterbirds [A999]

Conservation Objectives:

- To maintain the favourable conservation condition of great crested grebe, light-bellied Brent geese, shelduck, pintail, goldeneye, red-breasted merganser, oystercatcher, golden plover, grey plover, knot, dunlin, black-tailed godwit, bar-tailed godwit and redshank in Malahide Estuary SPA, which is defined by the following list of attributes and targets:
  - Population trend: Target of long-term population trend stable or increasing.
  - Distribution: Target of no significant decrease of the range, timing, and intensity of use of areas by great crested grebe, other than that occurring from natural patterns of variation.
- To maintain the favourable conservation condition of the wetland habitat in Malahide Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:
  - Habitat area: Target of the permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 765 hectares, other than that occurring from natural patterns of variation.

Identified negative pressures / threats:

- Adjacent land-use, habitat loss and modification
- Water quality
- Fisheries & aquaculture
- Recreational disturbance
- Other – wildfowling

Malahide Estuary SAC

Site code: 000205

Local planning authority(ies): Dublin County Council

Special Conservation Interests:

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Salicornia and other annuals colonising mud and sand [1310]
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]
- Mediterranean salt meadows (*Juncetalia maritimi*) [1410]
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]
- Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]

Conservation Objectives:

- To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Malahide Estuary SAC, which is defined by the following list of attributes and targets:
  - Habitat area: Target that the permanent habitat area is stable or increasing, subject to natural processes
  - Community extent: Target to maintain the extent of the *Zostera*-dominated community and the *Mytilus edulis*-dominated community complex, subject to natural processes
  - Community structure: *Zostera* density: Target to conserve the high quality of the *Zostera*-dominated community, subject to natural processes
  - Community structure: *Mytilus edulis* density: Target to Conserve the high quality of the *Mytilus edulis*-dominated community, subject to natural processes
  - Community distribution: Target to conserve the following community types in a natural condition: Fine sand with oligochaetes, amphipods, bivalves and polychaetes community complex; Estuarine sandy mud with Chironomidae and *Hediste diversicolor* community complex; and Sand to muddy sand with *Peringia ulvae*, *Tubificoides benedii* and *Cerastoderma edule* community complex
- To maintain the favourable conservation condition of *Salicornia* and other annuals colonising mud and sand in Malahide Estuary SAC, which is defined by the following list of attributes and targets:
  - Habitat area: Target for stable or increasing area, subject to natural processes, including erosion and succession
  - Habitat distribution: Target of no decline, or change in habitat distribution, subject no natural processes
  - Physical structure: sediment supply: Target to maintain, or where necessary restore, natural circulation of sediments and organic matter without any physical obstructions
  - Physical structure: creeks and pans: Target to maintain creek and pan structure, subject to natural processes, including erosion and succession
  - Physical structure: flooding regime: Target to maintain natural tidal regime
  - Vegetation structure: zonation: target to maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
  - Vegetation structure: vegetation height: Target to maintain structural variation within sward
  - Vegetation structure: vegetation cover: Target to maintain more than 90% of area outside creeks vegetated
  - Vegetation composition: typical species and sub-communities: Target to maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)
  - Vegetation structure: negative indicator species - *Spartina anglica:* Target if no significant expansion of common cordgrass (*Spartina anglica*). No new sites for this species and an annual spread of less than 1% where it is already known to occur
- To restore the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Malahide Estuary SAC, which is defined by the following list of attributes and targets:
  - Habitat area: Target for the area to be stable or increasing, subject to natural processes, including erosion and succession
  - Habitat distribution: Target of no decline or change in habitat distribution, subject to natural processes
  - Physical structure: sediment supply: Target to maintain natural circulation of sediments and organic matter, without any physical obstructions
  - Physical structure: creeks and pans: Target to allow creek and pan structure to develop, subject to natural processes, including erosion and succession
  - Physical structure: flooding regime: Target to maintain natural tidal regime
  - Vegetation structure: zonation: Target to maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
  - Vegetation structure: vegetation height: Target to maintain structural variation within sward
  - Vegetation structure: vegetation cover: Target to maintain more than 90% area outside creeks vegetated
  - Vegetation composition: typical species and sub-communities: Target to maintain range of subcommunities with typical species listed in SMP (McCorry and Ryle, 2009)
  - Vegetation structure: negative indicator species - *Spartina anglica:* Target of no significant expansion of common cordgrass with an annual spread of less than 1% where it is known to occur
- To maintain the favourable conservation condition of Mediterranean salt meadows (*Juncetalia maritimi*) in Malahide Estuary SAC, which is defined by the following list of attributes and targets:

  - Habitat area: Target for the area to be stable or increasing, subject to natural processes, including erosion and succession
  - Habitat distribution: Target of no decline, subject to natural processes. See map 5 for known distribution
  - Physical structure: sediment supply: Target to maintain/restore natural circulation of sediments and organic matter, without any physical obstructions
  - Physical structure: creeks and pans: target to maintain creek and pan structure, subject to natural processes, including erosion and succession
  - Physical structure: flooding regime: Target to maintain natural tidal regime
  - Vegetation structure: zonation: Target to maintain range of saltmarsh habitats including transitional zones, subject to natural processes including erosion and succession
  - Vegetation structure: vegetation height: Target to maintain structural variation in the sward
  - Vegetation structure: vegetation cover: Target to maintain more than 90% of area outside creeks vegetated
  - Vegetation composition: typical species and sub-communities: Target to maintain range of subcommunities with characteristic species listed in SMP (McCorry and Ryle, 2009)
  - Vegetation structure: negative indicator species - *Spartina anglica:* Target of no significant expansion of common cordgrass, with an annual spread of less than 1% where it is already known to occur
- To restore the favourable conservation condition of Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes') in Malahide Estuary SAC, which is defined by the following list of attributes and targets:
  - Habitat area: Target for the area to be stable or increasing, subject to natural processes including erosion and succession
  - Habitat distribution: Target of no decline, or change in habitat distribution, subject to natural processes
  - Physical structure: functionality and sediment supply: Target to maintain the natural circulation of sediment and organic matter, without any physical obstructions
  - Vegetation structure: zonation: Target to maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
  - Vegetation composition: plant health of dune grasses: Target for 95% of marram grass (*Ammophila arenaria*) and / or lyme-grass (*Leymus arenarius*) to be healthy (i.e. green plant parts above ground and flowering heads present)
  - Vegetation composition: typical species and subcommunities: target to maintain the presence of species-poor communities dominated by marram grass and/or lyme-grass
  - Vegetation composition: negative indicator species: Target for negative indicator species (including non-natives) to represent less than 5% cover
- To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Malahide Estuary SAC, which is defined by the following list of attributes and targets:
  - Habitat area: Target for the area to be stable or increasing, subject to natural processes including erosion and succession
  - Habitat distribution: Target of no decline, or change in habitat distribution, subject to natural processes
  - Physical structure: functionality and sediment supply: Target to maintain the natural circulation of sediment and organic matter, without any physical obstructions
  - Vegetation structure: zonation: Target to maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
  - Vegetation structure: bare ground: Target for the bare ground not to exceed 10% of fixed dune habitat, subject to natural processes
  - Vegetation structure: sward height: Target to maintain structural variation within sward
  - Vegetation composition: typical species and sub-communities: Target to maintain range of subcommunities with typical species listed in Ryle *et al.* (2009)
  - Vegetation composition: negative indicator species (including *Hippophae rhamnoides*): Target for negative indicator species (including non-natives) to represent less than 5% cover
  - Vegetation composition: scrub/trees: Target of no more than 5% cover or under control
- Spartina swards (*Spartinion maritimae*) was originally listed as a qualifying Annex I habitat for Malahide Estuary SAC due to historical records of two rare forms of cordgrass– small cordgrass (Spartina maritima) and Townsend's cordgrass (S . x townsendii.). However, Preston *et al.* (2002) considers both forms to be alien. In addition, all stands of cordgrass in Ireland are now regarded as common cordgrass (S. anglica) (McCorry *et al*., 2003; McCorry and Ryle, 2009). As a consequence, a conservation objective has not been prepared for this habitat. It will therefore not be necessary to assess the likely effects of plans or projects against this Annex I habitat at this site

Identified negative pressures / threats:

- Recreational activities
- Water pollution
- Infilling

Baldoyle Bay SPA

Site code: 004016

Local planning authority(ies): Dublin County Council

Special Conservation Interests:

Non-breeding waterbirds:

- Light-bellied brent goose [A046]
- Shelduck [A048]
- Ringed plover [A137]
- Golden plover [A140]
- Grey plover [A141]
- Bar-tailed godwit [A157]

Wetland habitats supporting waterbirds:

- Wetland and waterbirds [A999]

Conservation Objectives:

- To maintain the favourable conservation condition of light-bellied brent goose, shelduck, ringed plover, golden plover, grey plover and bar-tailed godwit which is defined by the following list of attributes and targets:
  - Population trend: Long term population trend stable or increasing. Measurable by percentage change
  - Distribution: There should be no significant decrease in the range, timing or intensity of use of areas by the SCI bird species other than that occurring from natural patterns of variation. Measurable by range, timing and intensity of use
- To maintain the favourable conservation condition of the wetland habitat in the SPA which is defined by the following list of attributes and targets:
  - Wetland habitat area: The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 263 ha, other than that occurring from natural patterns of variation. Measurable by hectares

Identified negative pressures / threats:

- Land take, trampling and disturbance by people
- Water quality deterioration resulting from sewage effluent

Baldoyle Bay SAC

Site code: 000199

Local planning authority: Dublin County Council

Special Conservation Interests:

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Salicornia and other annuals colonising mud and sand [1310]
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]
- Mediterranean salt meadows (*Juncetalia maritimi*) [1410]

Conservation Objectives:

- To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:
  - Habitat area: Target for the permanent habitat area to be stable or increasing, subject to natural processes
  - Community distribution: Target to conserve the following community types in a natural condition: Fine sand dominated by *Angulus tenuis* community complex; and Estuarine sandy mud with *Pygospio elegans* and *Tubificoides benedii* community complex
- To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:
  - Habitat area: Target for the area to be stable or increasing, subject to natural processes, including erosion and succession
  - Habitat distribution: Target of no decline, or change in habitat distribution, subject to natural processes
  - Physical structure: sediment supply: Target to maintain natural circulation of sediments and organic matter, without any physical obstructions
  - Physical structure: creeks and pans: Target to maintain creek and pan structure, subject to natural processes, including erosion and succession
  - Physical structure: flooding regime: Target to maintain natural tidal regime
  - Vegetation structure: zonation: Target to maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
  - Vegetation structure: vegetation height: Target to maintain structural variation within sward
  - Vegetation structure: vegetation cover: Target to maintain more than 90% of area outside creeks vegetated
- To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:
  - Vegetation composition: typical species and sub-communities: Target to maintain the presence of species-poor communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)
  - Vegetation structure: negative indicator species- *Spartina anglica*: Target of no significant expansion of common cordgrass (Spartina anglica), with an annual spread of less than 1%
- To maintain the favourable conservation condition of Atlantic salt meadows (*Glauco- Puccinellietalia maritimae*) in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:
  - Habitat area: Target for the area to be stable or increasing, subject to natural processes, including erosion and succession
  - Habitat distribution: Target of no decline, or change in habitat distribution, subject to natural processes
  - Physical structure: sediment supply: Target to maintain natural circulation of sediments and organic matter, without any physical obstructions
  - Physical structure: creeks and pans: Target to maintain / restore creek and pan structure to develop, subject to natural processes, including erosion and succession
  - Physical structure: flooding regime: Target to maintain natural tidal regime
  - Vegetation structure: zonation: Target to maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
  - Vegetation structure: vegetation height: Target to maintain structural variation within sward
  - Vegetation structure: vegetation cover: Target to maintain more than 90% of the area outside of the creeks vegetated
- To maintain the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:
  - Vegetation composition: typical species and sub-communities: Target to maintain range of sub-communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)
  - Vegetation structure: negative indicator species- *Spartina anglica:* Target of no significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%
- To maintain the favourable conservation condition of Mediterranean salt meadows (Juncetalia maritimi) in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:
  - Habitat area: Target for the area to be stable or increasing, subject to natural processes, including erosion and succession
  - Habitat distribution: Target of no decline, or change in habitat distribution, subject to natural processes
  - Physical structure: sediment supply: Target to maintain natural circulation of sediments and organic matter, without any physical obstructions

  - Physical structure: creeks and pans: Target to maintain creek and pan structure to develop, subject to natural processes, including erosion and succession
  - Physical structure: flooding regime: Target to maintain natural tidal regime
  - Vegetation structure: zonation: Target to maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession
  - Vegetation structure: vegetation height: Target to maintain structural variation within sward
  - Vegetation structure: vegetation cover: Target to maintain more than 90% of the area outside of the creeks vegetated
- To maintain the favourable conservation condition of Mediterranean salt meadows (Juncetalia maritimi) in Baldoyle Bay SAC, which is defined by the following list of attributes and targets:
  - Vegetation composition: typical species: Target to maintain range of sub- communities with typical species listed in the Saltmarsh Monitoring Project (McCorry and Ryle, 2009)
  - Vegetation structure: negative indicator species-*Spartina anglica:* Target of no significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%

Identified negative pressures / threats:

- Visitors pressure
- Disturbance to wildfowl
- Dumping of spoil onto the foreshore

North Dublin Bay SAC

Site code: 000206

Local planning authority: Dublin County Council

Special Conservation Interests:

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Annual vegetation of drift lines [1210]
- Salicornia and other annuals colonising mud and sand [1310]
- Atlantic salt meadows [1330]
- Mediterranean salt meadows [1410]
- Embryonic shifting dunes [2210]
- Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]
- Fixed dunes with herbaceous vegetation (grey dunes) [2130]
- Humid dune slacks [2190]
- Petalwort *Petalophyllum ralfsii* [1390]

Conservation Objectives:

- To maintain the favourable conservation condition of the qualifying interest habitats and species in the North Dublin Bay SAC.

Identified negative pressures / threats:

- Recreational pressures
- Damage from grazing
- Invasive non-native species

South Dublin Bay and River Tolka SPA

Site code: 004024

Local planning authority: South Dublin County Council

Special Conservation Interests:

Non-breeding waterbirds:

- Light-bellied brent goose [A046]
- Oystercatcher [A130]
- Ringed plover [A137]
- Grey plover [A141]
- Knot [A143]
- Sanderling [A144]
- Dunlin [A149]
- Bar-tailed godwit [A157]
- Redshank [A162]
- Black-headed gull [A179]

Breeding waterbirds:

- Common tern [A193]

Passage (during post-breeding/pre-migration roosting) waterbirds:

- Roseate tern [A192]
- Common tern [A193]
- Arctic tern [A194]

Wetland habitats supporting waterbirds:

- Wetland and waterbirds [A999]

Conservation Objectives:

- To maintain the favourable conservation condition of roseate tern and arctic tern which is defined by the following list of attributes and targets:
  - Passage population (individuals): Target of no significant decline in mean numbers
  - Distribution of roosting areas: Target of no significant decline of number, location or area (hectares)
  - Prey biomass available: Target of no significant decline in kilograms
  - Barriers to connectivity: Target of no significant increase in number, location, chape, area (hectares)
  - Disturbance at the breeding site: Target that human activities should occur at levels that do not adversely affect the breeding population. Measurable by the level of impact
- To maintain the favourable conservation condition of common tern which is defined by the following list of attributes and targets:
  - Breeding population abundance (apparently occupied nests): Target of no significant decline in numbers
  - Productivity rate (fledged young per breeding pair): Target of no significant decline in mean numbers
  - Passage population (individuals): Target of no significant decline in mean numbers
  - Distribution of breeding colonies: Target of no significant decline of number, location or area (hectares)
  - Distribution of roosting areas: Target of no significant decline of number, location or area (hectares)
  - Prey biomass available: Target of no significant decline in kilograms
  - Barriers to connectivity: Target of no significant increase in number, location, shape, area (hectares)
  - Disturbance at the breeding site: Target that human activities should occur at levels that do not adversely affect the breeding population. Measurable by the level of impact
  - Disturbance at the roosting site: Target that human activities should occur at levels that do not adversely affect the breeding population. Measurable by the level of impact
- To maintain the favourable conservation condition of light-bellied brent goose, oystercatcher, ringed plover, knot, sanderling, dunlin, bar-tailed godwit, redshank and black-headed gull which is defined by the following list of attributes and targets:
  - Population trend: Long term population trend stable or increasing. Measurable by percentage change

Identified negative pressures / threats:

- Man-made structures such as roads and bridges that are adjacent to the site
- Pollution (e.g. discharges from wastewater treatment plants)
- Various recreational and non-recreational activities
- Biological factors such as the growth of the invasive plant species *Spartina anglica*

North Bull Island SPA

Site code: 004006

Local planning authority: Dublin County Council

Special Conservation Interests:

Non-breeding waterbirds:

- Light-bellied brent goose [A046]
- Shelduck [A048]
- Teal [A052]
- Pintail [A054]
- Shoveler [A056]
- Oystercatcher [A130]
- Golden plover [A140]
- Grey plover [A141]
- Knot [A143]
- Sanderling [A144]
- Dunlin [A149]
- Black-tailed godwit [A156]
- Bar-tailed godwit [A157]
- Curlew [A160]
- Redshank [A162]
- Turnstone [A169]
- Black-headed gull [A179]

Wetland habitats supporting waterbirds:

- Wetland and waterbirds [A999]

Conservation objectives:

- To maintain the favourable conservation condition of light-bellied brent goose, shelduck, teal, pintail, shoveler, oystercatcher, golden plover, grey plover, knot, sanderling, dunlin, black-tailed godwit, bar-tailed godwit, curlew, redshank, turnstone and black-headed gull which is defined by the following list of attributes and targets:
  - Population trend: Long term population trend stable or increasing. Measurable by percentage change
  - Distribution: Target for no significant decrease in the range, timing or intensity of use of areas by the SCI bird species other than that occurring from natural patterns of variation. Measurable by range, timing and intensity of use.
- To maintain the favourable conservation condition of the wetland habitat in the SPA as a resource for the regularly-occurring migratory waterbirds that utilise it, which is defined by the following list of attributes and targets:
  - Wetland habitat area: Target for the permanent area occupied by the wetland habitat to be stable and not significantly less than the area of 1,713ha, other than that occurring from natural patterns of variation. Measurable by hectares

Identified negative pressures / threats:

- Man-made structures such as roads and bridges that are adjacent to the site
- Pollution (e.g. discharges from wastewater treatment plants)
- Various recreational and non-recreational activities
- Biological factors such as the growth of the invasive plant species *Spartina anglica*

North-West Irish Sea SPA

Site code: 004236

Local planning authority: Fingal County Council

Special Conservation Interests:

Non-breeding waterbirds:

- Red-throated diver [A001]
- Great northern diver [A003]
- Fulmar [A009]
- Common scoter [A065]
- Black-headed gull [A179]
- Common gull [A182]
- Herring gull [A184]
- Great black-backed gull [A187]
- Kittiwake [A188]
- Guillemot [A199]
- Razorbill [A200]
- Little gull [A177]

Breeding waterbirds:

- Fulmar [A009]
- Manx shearwater [A013]
- Shag [A018]
- Cormorant [A017]
- Lesser black-backed gull [A183]
- Herring gull [A184]
- Kittiwake [A188]
- Roseate tern [A192]
- Common tern [A193]
- Arctic tern [A194]
- Little tern [A195]
- Guillemot [A199]
- Razorbill [A200]
  Puffin [A204]

Conservation Objectives:

- To maintain the favourable conservation condition of red-throated diver, great northern diver, common scoter, black-headed gull, common gull, great black-backed gull and little gull at North-west Irish Sea SPA, which is defined by the following list of attributes and targets:
  - Non-breeding population size: Target to not have significant decline
  - Spatial distribution: Target for sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population
  - Forage spatial distribution, extent and abundance: Target for sufficient number of locations, area of suitable habitat and available forage biomass to support the population target
  - Disturbance across the site: Target for the intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution
  - Barriers to connectivity and site use: Target for the number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
- To restore the favourable conservation condition of fulmar and puffin in North-west Irish Sea SPA, which is defined by the following list of attributes and targets:
  - Population Size: Target for long term SPA population trend to be stable or increasing
  - Spatial distribution: Target for sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population
  - Forage spatial distribution, extent, abundance and availability: Target for sufficient number of locations, area of suitable habitat and available forage biomass to support the population target
  - Disturbance across the site: Target for the intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution
  - Barriers to connectivity: Target for the number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
- To maintain the favourable conservation condition of manx shearwater, lesser black-headed gul, roseate tern, common tern, arctic tern, little tern, guillemot and razorbill in North-west Irish Sea SPA, which is defined by the following list of attributes and targets:
  - Breeding population size: Target for no significant decline

  - Spatial distribution: Target for sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population
  - Forage spatial distribution, extent, abundance and availability: Target for sufficient number of locations, area of suitable habitat and available forage biomass to support the population target
  - Disturbance across the site: Target for the intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution
  - Barriers to connectivity: target for the number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA
- To restore the favourable conservation condition of cormorant, shag, herring gull and kittiwake in North-west Irish Sea SPA, which is defined by the following list of attributes and targets:
  - Breeding Population Size: Target for the long-term population trend within the SPA to be stable or increasing
  - Spatial distribution: Target for sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population
  - Forage spatial distribution, extent, abundance and availability: Target for sufficient number of locations, area of suitable habitat and available forage biomass to support the population target
  - Disturbance across the site: target for the intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population size and spatial distribution
  - Barriers to connectivity: Target for the number, location, shape and area of barriers do not significantly impact the site population's access to the SPA or other ecologically important sites outside the SPA

Identified negative pressures / threats:

- No information on the specific negative pressures / threats found.

Rogerstown Estuary SPA

Site code: 004015

Local planning authority: Dublin County Council

Special Conservation Interests:

Non-breeding waterbirds:

- Greylag goose [A043]
- Light-bellied brent goose [A046]
- Shelduck [A048]
- Shoveler [A056]
- Oystercatcher [A130]
- Ringed plover [A137]
- Grey plover [A141]
- Knot [A143]
- Dunlin [A149]
- Black-tailed godwit [A156]
- Redshank [A162]

Wetland habitats supporting waterbirds:

- Wetland and waterbirds [A999]

Conservation Objectives:

- To maintain the favourable conservation condition of greylag goose, brent goose, shelduck, shoveler, oystercatcher, ringed plover, grey plover, knot, dunlin, black-tailed godwit and redshank in Rogerstown Estuary SPA, which is defined by the following list of attributes and targets:
  - Population trend: Target for the long-term population trend to be stable or increasing. Measurable by percentage change
  - Distribution: There should be no significant decrease in the range, timing or intensity of use of areas by the SCI bird species other than that occurring from natural patterns of variation. Measurable by range, timing and intensity of use
- To maintain the favourable conservation condition of wetland habitat in Rogerstown Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:
  - Habitat area: Target for the permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 646ha, other than that occurring from natural patterns of variation

Identified negative pressures / threats:

- No information on the specific negative pressures / threats found

Ireland's Eye SAC

Site code: 002193

Local planning authority: Dublin County Council

Special Conservation Interests:

- Perennial vegetation of stony banks [1220]
- Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]

Conservation Objectives:

- To maintain or restore the favourable conservation condition of perennial vegetation of stony banks and vegetated sea cliffs of the Atlantic Baltic coasts in Ireland's Eye SAC.

Identified negative pressures / threats:

- No information on the specific negative pressures / threats found

Ireland's Eye SPA

Site code: 004117

Local planning authority: Dublin County Council

Special Conservation Interests:

Breeding waterbirds:

- Cormorant [A017]
- Herring gull [A184]
- Kittiwake [A188]
- Guillemot [A199]
- Razorbill [A200]

Conservation Objectives:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

Identified negative pressures / threats:

- No information on the specific negative pressures / threats found

Howth Head Coast SPA

Site code: 004113

Local planning authority: Dublin County Council

Special Conservation Interests:

Breeding waterbirds:

- Kittiwake [A188]

Conservation Objectives:

- To restore the Favourable conservation condition of Kittiwake in Howth Head Coast SPA.

Identified negative pressures / threats:

- No information on the specific negative pressures / threats found

Lambay Island SPA

Site code: 004069

Local planning authority: Dublin County Council

Special Conservation Interests:

Non-breeding waterbirds:

- Greylag goose [A043]
- Herring gull [A184]

Breeding waterbirds:

- Fulmar [A009]
- Cormorant [A017]
- Shag [A018]
- Lesser black-backed gull [A183]
- Herring gull [A184]
- Kittiwake [A188]
- Guillemot [A199]
- Razorbill [A200]
- Puffin [A204]

Conservation Objectives:

- To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA

Identified negative pressures / threats:

- No information on the specific negative pressures / threats found

Dalkey Islands SPA

Site code: 004172

Local planning authority: Dublin County Council

Special Conservation Interests:

- Roseate tern [A192]
- Common tern [A193]
- Arctic tern [A194]

Conservation Objectives:

- To restore the Favourable conservation condition of Roseate Tern, Common Tern, Arctic Tern in Dalkey Islands SPA

Identified negative pressures / threats:

- No information on the specific negative pressures / threats found

Appendix F Planning Applications

Table F-1 Planning Applications in the vicinity of the Dublin Airport Site

Applicant	Address	Application Ref.	Description	Decision	Significant Cumulative Effects	Reason for shortlisting
National Transport Authority	Swords to Dublin City Centre	HA06D.317121	BusConnects Swords to City Centre Bus Corridor Scheme.	Granted	None	Key regional/national infrastructure schemes
Transport Infrastructure Ireland	Estuary through Swords, Dublin Airport, Ballymun, Glasnevin and City Centre to Charlemont, Co. Dublin (Metrolink)	NA29N.314724 (SID/02/22)	Railway (Metrolink - Estuary to Charlemont via Dublin Airport) Order [2022].	Granted	Significant adverse effect on capacity for management of waste during construction	Key regional/national infrastructure schemes under construction within 1km of the Site
Frylite (Dublin) Ltd	Frylite, ABP Meat Processing Plant, Ballystrun Lane, Swords, Co. Dublin, K67 K5XO	F23A/0721	Continued operation of Frylite's non-hazardous waste transfer and processing facility at Ballystruan Lane, Swords.	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
HPREF Dublin Office DevCo 1 Limited	Horizon Logistics Park, off the R108, at the townlands of Merryfalls and Silloge, St. Margaret's, Swords, Co. Dublin	FW25A/0055E	Construction of a logistics and light industrial development comprising fi ve warehouse units, one café/retail unit, associated offices, parking, infrastructure, landscaping, and ancillary site works.	Granted	Significant adverse effect on noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
HPREF Dublin Office DevCo 1 Limited	Horizon Logistics Park, off the R108, at the townlands of Merryfalls and Silloge, St. Margaret's, Swords, Co. Dublin	FW23A/0067	Construction of a warehouse and logistics unit with ancillary offices, parking, service yards, landscaping, and associated site works.	Granted	Significant adverse effect on noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
HPREF Dublin Office DevCo 1 Limited	Horizon Logistics Park, off the R108, at the townlands of Merryfalls and Silloge,	FW23A/0278	Construction of a warehouse and logistics unit with	Granted	Significant adverse effect on noise and vibration during construction	Existing major schemes that have planning permission within the last

Applicant	Address	Application Ref.	Description	Decision	Significant Cumulative Effects	Reason for shortlisting
	St. Margaret's, Swords, Co. Dublin		ancillary offices, parking, service yards, landscaping, and associated site works.			five years or a decision to grant consent, or are under construction within 1km of the Site.
HPREF Dublin Office DevCo 1 Limited	Horizon Logistics Park, off the R108, at the townlands of Merryfalls and Silloge, St. Margaret's, Swords, Co. Dublin	FW21A/0180	Construction of a warehouse and logistics unit with ancillary office accommodation, parking, service yards, access roads, landscaping, and associated site infrastructure works.	Granted	Significant adverse effect on noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
daa plc	Corballis Drive, Dublin Airport, Corballis, Swords, Co. Dublin	F16A/0155/E1	Extension of duration: Dublin Airport Central the construction of 4 No. office blocks, ranging in height from 6 to 7 storeys.	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
daa plc	Corballis Drive, Dublin Airport, Corballis, Swords, Co. Dublin	F20A/0668	Amendment of Dublin Airport's North Runway planning conditions to allow increased night-time flight operations and introduce a noise quota system with associated noise mitigation measures.	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
daa plc	Corballis Drive, Dublin Airport, Corballis, Swords, Co. Dublin	PL06F.320815 (F23A/0636)	Upgrades and expansion of Dublin Airport's surface water drainage infrastructure.	Granted	Significant adverse effect on air quality, noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
daa plc	Corballis Drive, Dublin Airport, Corballis, Swords, Co. Dublin	F23A/0781	The proposed development relates to the entirety of the Airport including greenfield sites on the periphery of the Airport, as well as parts of	Decision still due	Significant adverse effect on air quality, noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under

Applicant	Address	Application Ref.	Description	Decision	Significant Cumulative Effects	Reason for shortlisting
			adjoining public roads, including the Airport roundabout; the R132/Corballis Road South; R132/Old Airport Road; and R108/Old Airport Road. Project composed of 11 elements including for junction improvements, new surface car park north, extension of existing long term red car park, reconfiguration of the existing ground transportation centre hub, upgrades to the existing airfield drainage project, new apron 7 and associated works, extension of existing terminal 1 level 30 mezzanine, South Apron and associated works, North Apron and associated works			construction within 1km of the Site.
daa plc	Corballis Drive, Dublin Airport, Corballis, Swords, Co. Dublin	PL06F.322859 (F24A/0512 E)	Construction of aircraft observation facility with all associated site works.	Granted	Significant adverse effect on air quality, noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
daa plc	2no. landside sites, in the townlands of Collinstown, Co. Dublin Airport, Co. Dublin	F24A/0309E	Temporary 7-year permission for the installation of electric bus charging infrastructure at Dublin Airport.	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
daa plc	Lands within and to the east of Dublin Airport to include part of the	F25A/1210E	Development of Phase 1 of Dublin Airport's cargo relocation project	Decision still due	Significant adverse effect on noise and vibration during construction	Existing major schemes that have planning permission within the last

Applicant	Address	Application Ref.	Description	Decision	Significant Cumulative Effects	Reason for shortlisting
	airfield in the area of the South Apron part of the Swords Road R132 and lands to the east of the Swords Road R132 in an area known as Eastlands in the townlands of Corballis, Co.					five years or a decision to grant consent, or are under construction within 1km of the Site.
ESB (Electricity Supply Board)	Stockhole Lane, Clonshaugh, County Dublin	F24A/0974E	Undergrounding of a section of the Grange–Collinstown 38kV electricity line.	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
ESB	N/A	ACP - 317831	Construction of three 110kV electricity circuits.	Decision still due	Significant adverse effect on noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
Irish Water	N/A	PA06F.312131	Greater Dublin Drainage Project consisting of a new wastewater treatment plant, sludge hub centre, orbital sewer, outfall pipeline and regional biosolids storage facility.	Granted	None	Key regional/national infrastructure schemes
Home Farm Football Club	AUL Complex, Stockhole Lane, Cloghran, Co. Dublin, K67 EH32	F23A/0465	Upgrade of two existing football pitches at the AUL Complex.	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
Fingleton White	From the Athletic Union League/FAI sports grounds to the Dublin Airport terminal located within the	F22A/0682	Amendment of the approved Dublin Port to Dublin Airport fuel pipeline route.	Granted	Significant adverse effect on noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under

Applicant	Address	Application Ref.	Description	Decision	Significant Cumulative Effects	Reason for shortlisting
	townlands, Toberbunny and Stockhole, Dublin					construction within 1km of the Site.
EirGrid	East Meath – North Dublin Grid Upgrade	VA06F.319422	Construction of of a 400 kV underground cable.	Granted	None	Key regional/national infrastructure schemes
Mainscourt Solar DAC	All in or in the vicinity of the townlands of Mainscourt, Roscall, Richardstown, Gracediew, Brownstown, Magillstown, Skidoo, Dollards, Balheary, Newtown, broadmeadow, Balheary Demesne, Seatown West, Swords Demesne, Mantua, Greenfields, Seatown East.	F22A/0365	Development of grid connection infrastructure comprising approximately 9.5 km of underground 38kV electricity cabling and associated works to connect the approved Mainscourt solar farm to the ESB Mountgorry 38kV Substation in Swords.	Granted	Significant adverse effect on noise and vibration during construction	Key regional/national infrastructure schemes
Degaemad Developments Ltd	McComish, Fosterstown South, Cloghran, Dublin	F22A/0422	Demolition and replacement of a storage warehouse and upgrades to existing industrial buildings.	Granted	Significant adverse effect on noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
Keelings UC	Keelings Flowers, Food Central, St Margaret's, Co. Dublin	FW23A/0031	Retention permission for amendments to the approved Keelings Flowers warehouse and office facility.	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
Keelings UC	Food Central, St Margaret's, Co Dublin	FW21A/0187	Construction of a warehouse and distribution facility with ancillary office and staff accommodation, parking, service yards, landscaping, and associated site development works at Food Central, St. Margaret's.	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.

Applicant	Address	Application Ref.	Description	Decision	Significant Cumulative Effects	Reason for shortlisting
Americold Dublin RE	Food Central, Kingstown, St Margaret's, Co. Dublin	FW22A/0179	Retention and modification of a permitted food processing warehouse facility.	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
Energia Solar Holdings Ltd.	within the townlands of Fieldstown, Clonmethan Electoral District, Co.Dublin.	VA06F.318677	110kV Air Insulated Switchgear (AIS) tail-fed substation compound, combined with a 110kV underground cable connection to Finglas	Granted	None	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.
Rohan Project Management	Dublin Airport Logistics Park, Newtown, Kilshane Cross, Co. Dublin	FW24A/0373E	Construction of a central warehouse and logistics distribution centre	Granted	Significant adverse effect on noise and vibration during construction	Existing schemes or consented schemes that result in an increase of more than 10,000 square metres (m2) gross external area (GEA) in floor area (or over 150 residential units).
D.A. Terminal 3 Limited	Lands within the townland of Huntstown, Swords, Co. Dublin, The subject site fronts onto the R108 to the east.	FW25A/0480E	Construction of four aviation-related cargo handling and warehousing units	Appealing	Significant adverse effect on noise and vibration during construction	Existing major schemes that have planning permission within the last five years or a decision to grant consent, or are under construction within 1km of the Site.

Appendix G Air Quality Modelling

Table G-1 Air Quality modelling results for NOx at selected locations adjacent to European sites where impacts could not be ruled out

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment - Impact % of the Critical Level
E02a	Malahide Estuary	10m back	719281	747736	19.83	20.59	0.76	2.53%
E02a	Malahide Estuary	20m back	719271	747737	20.16	20.92	0.76	2.53%
E02a	Malahide Estuary	30m back	719261	747737	20.32	21.08	0.76	2.52%
E02a	Malahide Estuary	40m back	719251	747738	20.27	21.03	0.75	2.51%
E02a	Malahide Estuary	50m back	719241	747739	20.08	20.83	0.74	2.48%
E02a	Malahide Estuary	60m back	719231	747740	19.83	20.56	0.74	2.45%
E02a	Malahide Estuary	70m back	719221	747740	19.55	20.27	0.73	2.42%
E02a	Malahide Estuary	80m back	719211	747741	19.27	19.99	0.72	2.40%
E02a	Malahide Estuary	90m back	719201	747742	18.99	19.71	0.71	2.37%
E02a	Malahide Estuary	100m back	719191	747743	18.74	19.44	0.70	2.35%
E02a	Malahide Estuary	110m back	719181	747743	18.51	19.20	0.70	2.32%
E02a	Malahide Estuary	120m back	719171	747744	18.29	18.98	0.69	2.30%
E02a	Malahide Estuary	130m back	719161	747745	18.09	18.77	0.68	2.28%
E02a	Malahide Estuary	140m back	719151	747745	17.90	18.58	0.68	2.26%
E02a	Malahide Estuary	150m back	719141	747746	17.74	18.41	0.67	2.25%
E02a	Malahide Estuary	160m back	719131	747747	17.58	18.25	0.67	2.23%
E02a	Malahide Estuary	170m back	719121	747748	17.44	18.10	0.67	2.22%
E02a	Malahide Estuary	180m back	719111	747748	17.30	17.96	0.66	2.21%
E02a	Malahide Estuary	190m back	719101	747749	17.18	17.84	0.66	2.19%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment - Impact % of the Critical Level
E02a	Malahide Estuary	200m back	719091	747750	17.06	17.72	0.66	2.18%
E02b	Malahide Estuary	10m back	719333	747730	21.10	21.90	0.80	2.68%
E02b	Malahide Estuary	20m back	719343	747729	21.71	22.53	0.82	2.73%
E02b	Malahide Estuary	30m back	719353	747728	22.04	22.87	0.83	2.77%
E02b	Malahide Estuary	40m back	719363	747727	22.06	22.90	0.84	2.79%
E02b	Malahide Estuary	50m back	719373	747727	21.89	22.73	0.84	2.80%
E02b	Malahide Estuary	60m back	719383	747726	21.60	22.45	0.84	2.81%
E02b	Malahide Estuary	70m back	719393	747725	21.28	22.12	0.84	2.81%
E02b	Malahide Estuary	80m back	719403	747724	20.94	21.78	0.84	2.81%
E02b	Malahide Estuary	90m back	719413	747723	20.61	21.45	0.84	2.81%
E02b	Malahide Estuary	100m back	719423	747723	20.29	21.14	0.84	2.81%
E02b	Malahide Estuary	110m back	719433	747722	20.00	20.84	0.84	2.81%
E02b	Malahide Estuary	120m back	719443	747721	19.72	20.57	0.84	2.81%
E02b	Malahide Estuary	130m back	719453	747720	19.47	20.31	0.84	2.81%
E02b	Malahide Estuary	140m back	719463	747719	19.23	20.07	0.85	2.82%
E02b	Malahide Estuary	150m back	719473	747719	19.01	19.86	0.85	2.82%
E02b	Malahide Estuary	160m back	719483	747718	18.80	19.65	0.85	2.83%
E02b	Malahide Estuary	170m back	719493	747717	18.62	19.47	0.85	2.84%
E02b	Malahide Estuary	180m back	719503	747716	18.44	19.29	0.85	2.84%
E02b	Malahide Estuary	190m back	719513	747716	18.28	19.13	0.86	2.85%
E02b	Malahide Estuary	200m back	719522	747715	18.12	18.98	0.86	2.86%
E03a	Malahide Estuary	10m back	719273	747642	20.03	20.84	0.81	2.68%
E03a	Malahide Estuary	20m back	719263	747643	20.35	21.16	0.80	2.68%
E03a	Malahide Estuary	30m back	719253	747644	20.49	21.30	0.80	2.67%
E03a	Malahide Estuary	40m back	719243	747645	20.43	21.22	0.80	2.65%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment - Impact % of the Critical Level
E03a	Malahide Estuary	50m back	719233	747646	20.23	21.02	0.79	2.62%
E03a	Malahide Estuary	60m back	719223	747646	19.97	20.74	0.78	2.59%
E03a	Malahide Estuary	70m back	719213	747647	19.68	20.45	0.77	2.56%
E03a	Malahide Estuary	80m back	719203	747648	19.40	20.15	0.76	2.53%
E03a	Malahide Estuary	90m back	719193	747649	19.12	19.87	0.75	2.50%
E03a	Malahide Estuary	100m back	719183	747650	18.87	19.61	0.74	2.47%
E03a	Malahide Estuary	110m back	719173	747650	18.63	19.36	0.73	2.44%
E03a	Malahide Estuary	120m back	719163	747651	18.41	19.14	0.73	2.42%
E03a	Malahide Estuary	130m back	719153	747652	18.21	18.93	0.72	2.39%
E03a	Malahide Estuary	140m back	719143	747653	18.02	18.73	0.71	2.37%
E03a	Malahide Estuary	150m back	719133	747654	17.85	18.56	0.71	2.35%
E03a	Malahide Estuary	160m back	719123	747654	17.69	18.39	0.70	2.33%
E03a	Malahide Estuary	170m back	719113	747655	17.55	18.24	0.70	2.32%
E03a	Malahide Estuary	180m back	719103	747656	17.41	18.10	0.69	2.30%
E03a	Malahide Estuary	190m back	719094	747657	17.29	17.97	0.69	2.29%
E03a	Malahide Estuary	200m back	719084	747658	17.17	17.85	0.68	2.27%
E03b	Malahide Estuary	10m back	719326	747637	21.28	22.13	0.85	2.84%
E03b	Malahide Estuary	20m back	719336	747636	21.88	22.75	0.87	2.90%
E03b	Malahide Estuary	30m back	719346	747636	22.21	23.09	0.88	2.94%
E03b	Malahide Estuary	40m back	719356	747635	22.23	23.12	0.89	2.96%
E03b	Malahide Estuary	50m back	719366	747634	22.05	22.94	0.89	2.97%
E03b	Malahide Estuary	60m back	719376	747633	21.76	22.66	0.89	2.98%
E03b	Malahide Estuary	70m back	719386	747633	21.44	22.33	0.89	2.98%
E03b	Malahide Estuary	80m back	719396	747632	21.10	21.99	0.89	2.98%
E03b	Malahide Estuary	90m back	719406	747631	20.77	21.66	0.89	2.98%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment - Impact % of the Critical Level
E03b	Malahide Estuary	100m back	719416	747630	20.45	21.35	0.89	2.98%
E03b	Malahide Estuary	110m back	719426	747629	20.16	21.05	0.89	2.98%
E03b	Malahide Estuary	120m back	719435	747629	19.88	20.77	0.90	2.98%
E03b	Malahide Estuary	130m back	719445	747628	19.62	20.52	0.90	2.99%
E03b	Malahide Estuary	140m back	719455	747627	19.39	20.28	0.90	2.99%
E03b	Malahide Estuary	150m back	719465	747626	19.17	20.07	0.90	3.00%
E03b	Malahide Estuary	160m back	719475	747626	18.96	19.86	0.90	3.00%
E03b	Malahide Estuary	170m back	719485	747625	18.77	19.67	0.90	3.01%
E03b	Malahide Estuary	180m back	719495	747624	18.60	19.50	0.91	3.02%
E03b	Malahide Estuary	190m back	719505	747623	18.43	19.34	0.91	3.02%
E03b	Malahide Estuary	200m back	719515	747622	18.28	19.19	0.91	3.03%
E08a	Baldoyle Bay	Coastal	723457	742425	9.85	9.97	0.12	0.40%
E08b	Baldoyle Bay	Coastal	724402	742427	8.82	8.89	0.07	0.23%
E08c	Baldoyle Bay	Coastal	725186	742565	8.32	8.38	0.06	0.21%
E08d	Baldoyle Bay	Coastal	723462	741381	9.42	9.57	0.15	0.49%
E08e	Baldoyle Bay	Coastal	726037	741053	8.29	8.43	0.14	0.48%
E08f	Baldoyle Bay	Coastal	727679	740679	8.15	8.27	0.11	0.38%
E09a	Howth Head	Coastal	728837	739432	6.97	7.04	0.07	0.24%
E09b	Howth Head	Coastal	727485	738445	6.57	6.65	0.08	0.26%
E09c	Howth Head	Coastal	729881	736278	8.27	8.31	0.04	0.13%
E10a	Irelands Eye	Coastal	728500	741006	7.06	7.15	0.09	0.31%
E10b	Irelands Eye	Coastal	729087	741463	6.66	6.72	0.06	0.19%
E11a	North Dublin Bay	Coastal	720996	736052	13.26	13.34	0.09	0.29%
E11b	North Dublin Bay	Coastal	721973	737200	10.74	10.88	0.15	0.49%
E11c	North Dublin Bay	Coastal	722674	738136	10.15	10.20	0.05	0.16%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment - Impact % of the Critical Level
E11d	North Dublin Bay	Coastal	723683	738845	9.60	9.76	0.16	0.53%
E12a	Malahide Estuary	Coastal	722845	746223	10.8	11.2	0.36	1.19%

Table G-2 Air Quality modelling results for NH3 at selected locations adjacent to European sites where impacts could not be ruled out

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment - Impact % of the Critical Level
E02a	Malahide Estuary	10m back	719281	747736	1.97	1.98	0.01	0.21%
E02a	Malahide Estuary	20m back	719271	747737	1.98	1.99	0.01	0.22%
E02a	Malahide Estuary	30m back	719261	747737	1.99	2.00	0.01	0.23%
E02a	Malahide Estuary	40m back	719251	747738	1.99	2.00	0.01	0.23%
E02a	Malahide Estuary	50m back	719241	747739	1.98	1.99	0.01	0.22%
E02a	Malahide Estuary	60m back	719231	747740	1.97	1.98	0.01	0.21%
E02a	Malahide Estuary	70m back	719221	747740	1.96	1.97	0.01	0.21%
E02a	Malahide Estuary	80m back	719211	747741	1.95	1.96	0.01	0.20%
E02a	Malahide Estuary	90m back	719201	747742	1.94	1.95	0.01	0.19%
E02a	Malahide Estuary	100m back	719191	747743	1.93	1.94	0.01	0.18%
E02a	Malahide Estuary	110m back	719181	747743	1.93	1.93	0.01	0.17%
E02a	Malahide Estuary	120m back	719171	747744	1.92	1.93	0.01	0.17%
E02a	Malahide Estuary	130m back	719161	747745	1.91	1.92	0.01	0.16%
E02a	Malahide Estuary	140m back	719151	747745	1.91	1.91	0.01	0.15%
E02a	Malahide Estuary	150m back	719141	747746	1.90	1.91	0.01	0.15%
E02a	Malahide Estuary	160m back	719131	747747	1.89	1.90	0.01	0.14%
E02a	Malahide Estuary	170m back	719121	747748	1.89	1.90	0.01	0.14%
E02a	Malahide Estuary	180m back	719111	747748	1.89	1.89	0.01	0.14%
E02a	Malahide Estuary	190m back	719101	747749	1.88	1.89	0.01	0.13%
E02a	Malahide Estuary	200m back	719091	747750	1.88	1.88	0.01	0.13%
E02b	Malahide Estuary	10m back	719333	747730	2.01	2.03	0.01	0.25%
E02b	Malahide Estuary	20m back	719343	747729	2.03	2.05	0.01	0.26%
E02b	Malahide Estuary	30m back	719353	747728	2.05	2.06	0.01	0.27%
E02b	Malahide Estuary	40m back	719363	747727	2.05	2.06	0.01	0.27%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment - Impact % of the Critical Level
E02b	Malahide Estuary	50m back	719373	747727	2.04	2.05	0.01	0.27%
E02b	Malahide Estuary	60m back	719383	747726	2.03	2.04	0.01	0.26%
E02b	Malahide Estuary	70m back	719393	747725	2.02	2.03	0.01	0.25%
E02b	Malahide Estuary	80m back	719403	747724	2.01	2.02	0.01	0.24%
E02b	Malahide Estuary	90m back	719413	747723	2.00	2.01	0.01	0.23%
E02b	Malahide Estuary	100m back	719423	747723	1.99	2.00	0.01	0.23%
E02b	Malahide Estuary	110m back	719433	747722	1.98	1.99	0.01	0.22%
E02b	Malahide Estuary	120m back	719443	747721	1.97	1.98	0.01	0.21%
E02b	Malahide Estuary	130m back	719453	747720	1.96	1.97	0.01	0.20%
E02b	Malahide Estuary	140m back	719463	747719	1.95	1.96	0.01	0.20%
E02b	Malahide Estuary	150m back	719473	747719	1.95	1.95	0.01	0.19%
E02b	Malahide Estuary	160m back	719483	747718	1.94	1.95	0.01	0.18%
E02b	Malahide Estuary	170m back	719493	747717	1.93	1.94	0.01	0.18%
E02b	Malahide Estuary	180m back	719503	747716	1.93	1.93	0.01	0.17%
E02b	Malahide Estuary	190m back	719513	747716	1.92	1.93	0.01	0.17%
E02b	Malahide Estuary	200m back	719522	747715	1.92	1.92	0.01	0.16%
E03a	Malahide Estuary	10m back	719273	747642	1.98	1.99	0.01	0.22%
E03a	Malahide Estuary	20m back	719263	747643	1.99	2.00	0.01	0.22%
E03a	Malahide Estuary	30m back	719253	747644	1.99	2.00	0.01	0.23%
E03a	Malahide Estuary	40m back	719243	747645	1.99	2.00	0.01	0.23%
E03a	Malahide Estuary	50m back	719233	747646	1.98	1.99	0.01	0.22%
E03a	Malahide Estuary	60m back	719223	747646	1.97	1.98	0.01	0.22%
E03a	Malahide Estuary	70m back	719213	747647	1.96	1.97	0.01	0.21%
E03a	Malahide Estuary	80m back	719203	747648	1.95	1.96	0.01	0.20%
E03a	Malahide Estuary	90m back	719193	747649	1.94	1.95	0.01	0.19%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment - Impact % of the Critical Level
E03a	Malahide Estuary	100m back	719183	747650	1.94	1.94	0.01	0.18%
E03a	Malahide Estuary	110m back	719173	747650	1.93	1.94	0.01	0.18%
E03a	Malahide Estuary	120m back	719163	747651	1.92	1.93	0.01	0.17%
E03a	Malahide Estuary	130m back	719153	747652	1.91	1.92	0.01	0.16%
E03a	Malahide Estuary	140m back	719143	747653	1.91	1.91	0.01	0.16%
E03a	Malahide Estuary	150m back	719133	747654	1.90	1.91	0.01	0.15%
E03a	Malahide Estuary	160m back	719123	747654	1.90	1.90	0.01	0.15%
E03a	Malahide Estuary	170m back	719113	747655	1.89	1.90	0.01	0.14%
E03a	Malahide Estuary	180m back	719103	747656	1.89	1.89	0.01	0.14%
E03a	Malahide Estuary	190m back	719094	747657	1.88	1.89	0.01	0.13%
E03a	Malahide Estuary	200m back	719084	747658	1.88	1.88	0.01	0.13%
E03b	Malahide Estuary	10m back	719326	747637	2.02	2.03	0.01	0.25%
E03b	Malahide Estuary	20m back	719336	747636	2.04	2.05	0.01	0.27%
E03b	Malahide Estuary	30m back	719346	747636	2.05	2.06	0.01	0.28%
E03b	Malahide Estuary	40m back	719356	747635	2.05	2.06	0.01	0.28%
E03b	Malahide Estuary	50m back	719366	747634	2.04	2.06	0.01	0.27%
E03b	Malahide Estuary	60m back	719376	747633	2.03	2.05	0.01	0.26%
E03b	Malahide Estuary	70m back	719386	747633	2.02	2.03	0.01	0.25%
E03b	Malahide Estuary	80m back	719396	747632	2.01	2.02	0.01	0.25%
E03b	Malahide Estuary	90m back	719406	747631	2.00	2.01	0.01	0.24%
E03b	Malahide Estuary	100m back	719416	747630	1.99	2.00	0.01	0.23%
E03b	Malahide Estuary	110m back	719426	747629	1.98	1.99	0.01	0.22%
E03b	Malahide Estuary	120m back	719435	747629	1.97	1.98	0.01	0.21%
E03b	Malahide Estuary	130m back	719445	747628	1.96	1.97	0.01	0.20%
E03b	Malahide Estuary	140m back	719455	747627	1.95	1.96	0.01	0.20%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment - Impact % of the Critical Level
E03b	Malahide Estuary	150m back	719465	747626	1.95	1.96	0.01	0.19%
E03b	Malahide Estuary	160m back	719475	747626	1.94	1.95	0.01	0.19%
E03b	Malahide Estuary	170m back	719485	747625	1.93	1.94	0.01	0.18%
E03b	Malahide Estuary	180m back	719495	747624	1.93	1.94	0.01	0.17%
E03b	Malahide Estuary	190m back	719505	747623	1.92	1.93	0.01	0.17%
E03b	Malahide Estuary	200m back	719515	747622	1.92	1.92	0.01	0.16%
E08a	Baldoyle Bay	Coastal	723457	742425	1.59	1.59	0.00	0.00%
E08b	Baldoyle Bay	Coastal	724402	742427	1.44	1.44	0.00	0.00%
E08c	Baldoyle Bay	Coastal	725186	742565	1.39	1.39	0.00	0.00%
E08d	Baldoyle Bay	Coastal	723462	741381	1.49	1.49	0.00	0.00%
E08e	Baldoyle Bay	Coastal	726037	741053	1.21	1.21	0.00	0.00%
E08f	Baldoyle Bay	Coastal	727679	740679	1.35	1.35	0.00	0.00%
E09a	Howth Head	Coastal	728837	739432	1.30	1.30	0.00	0.00%
E09b	Howth Head	Coastal	727485	738445	1.31	1.31	0.00	0.00%
E09c	Howth Head	Coastal	729881	736278	1.15	1.15	0.00	0.00%
E10a	Irelands Eye	Coastal	728500	741006	1.34	1.34	0.00	0.00%
E10b	Irelands Eye	Coastal	729087	741463	1.22	1.22	0.00	0.00%
E11a	North Dublin Bay	Coastal	720996	736052	1.40	1.40	0.00	0.00%
E11b	North Dublin Bay	Coastal	721973	737200	1.36	1.36	0.00	0.00%
E11c	North Dublin Bay	Coastal	722674	738136	1.29	1.29	0.00	0.00%
E11d	North Dublin Bay	Coastal	723683	738845	1.37	1.37	0.00	0.00%
E12a	Malahide Estuary	Coastal	722845	746223	1.53	1.53	0.00	0.00%

Table G-3 Air Quality modelling results for Nitrogen Deposition at selected locations adjacent to European sites where impacts could not be ruled out

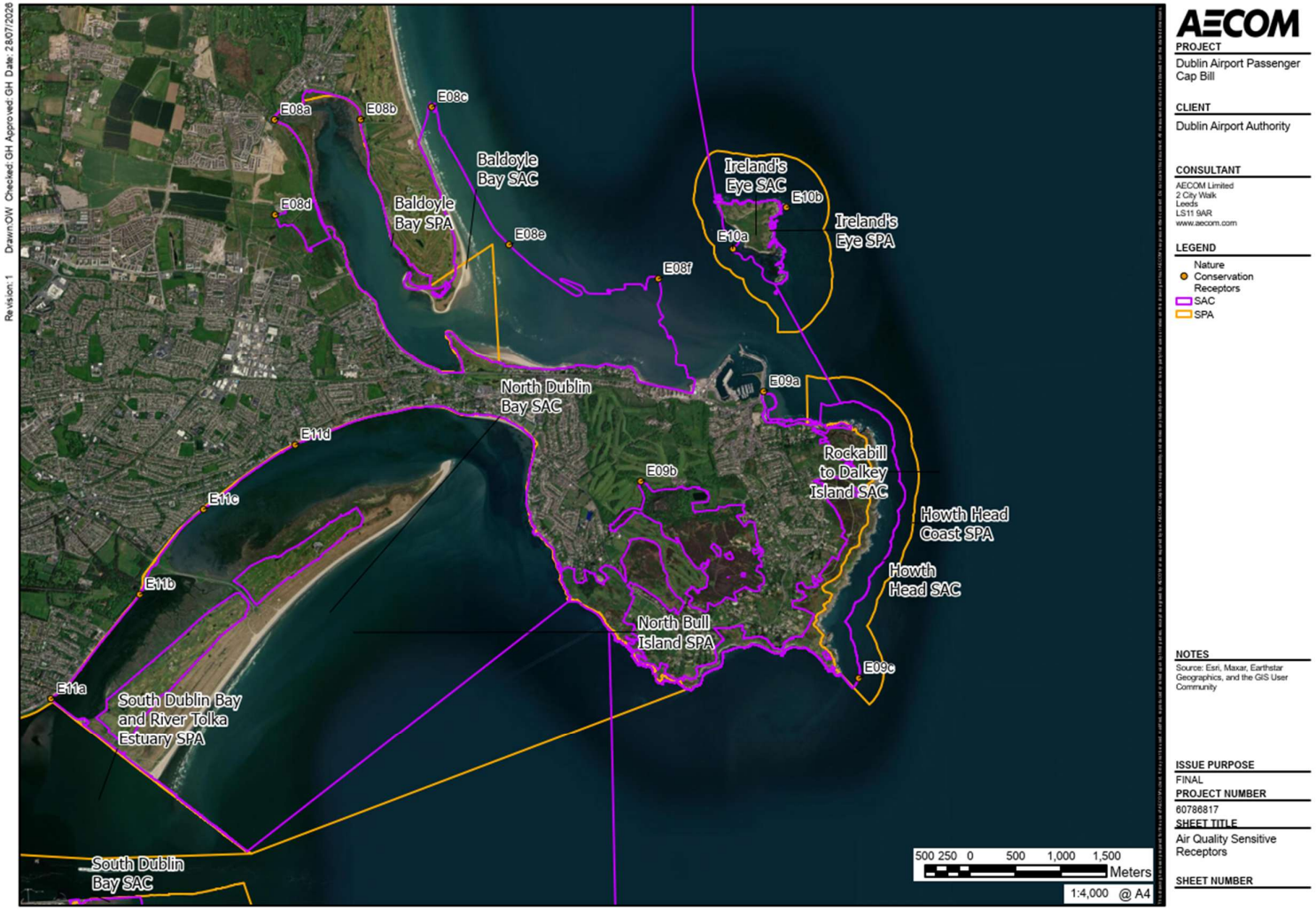
Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment Impact - % of the Critical Level
E02a	Malahide Estuary	10m back	719281	747736	7.28	7.37	0.09	0.73%
E02a	Malahide Estuary	20m back	719271	747737	7.35	7.45	0.10	0.75%
E02a	Malahide Estuary	30m back	719261	747737	7.39	7.49	0.10	0.74%
E02a	Malahide Estuary	40m back	719251	747738	7.38	7.48	0.10	0.74%
E02a	Malahide Estuary	50m back	719241	747739	7.33	7.43	0.10	0.73%
E02a	Malahide Estuary	60m back	719231	747740	7.27	7.37	0.10	0.71%
E02a	Malahide Estuary	70m back	719221	747740	7.20	7.29	0.09	0.70%
E02a	Malahide Estuary	80m back	719211	747741	7.14	7.22	0.09	0.69%
E02a	Malahide Estuary	90m back	719201	747742	7.07	7.16	0.09	0.67%
E02a	Malahide Estuary	100m back	719191	747743	7.01	7.09	0.08	0.66%
E02a	Malahide Estuary	110m back	719181	747743	6.95	7.03	0.08	0.67%
E02a	Malahide Estuary	120m back	719171	747744	6.90	6.98	0.08	0.65%
E02a	Malahide Estuary	130m back	719161	747745	6.85	6.93	0.08	0.62%
E02a	Malahide Estuary	140m back	719151	747745	6.81	6.88	0.07	0.62%
E02a	Malahide Estuary	150m back	719141	747746	6.77	6.84	0.07	0.61%
E02a	Malahide Estuary	160m back	719131	747747	6.73	6.80	0.07	0.59%
E02a	Malahide Estuary	170m back	719121	747748	6.69	6.76	0.07	0.60%
E02a	Malahide Estuary	180m back	719111	747748	6.66	6.73	0.07	0.58%
E02a	Malahide Estuary	190m back	719101	747749	6.63	6.69	0.06	0.59%
E02a	Malahide Estuary	200m back	719091	747750	6.60	6.67	0.06	0.58%
E02b	Malahide Estuary	10m back	719333	747730	7.58	7.69	0.11	0.80%
E02b	Malahide Estuary	20m back	719343	747729	7.72	7.84	0.12	0.82%
E02b	Malahide Estuary	30m back	719353	747728	7.80	7.92	0.12	0.85%
E02b	Malahide Estuary	40m back	719363	747727	7.81	7.93	0.12	0.85%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment Impact - % of the Critical Level
E02b	Malahide Estuary	50m back	719373	747727	7.77	7.88	0.11	0.86%
E02b	Malahide Estuary	60m back	719383	747726	7.70	7.81	0.11	0.86%
E02b	Malahide Estuary	70m back	719393	747725	7.62	7.73	0.11	0.85%
E02b	Malahide Estuary	80m back	719403	747724	7.54	7.65	0.10	0.83%
E02b	Malahide Estuary	90m back	719413	747723	7.47	7.57	0.10	0.84%
E02b	Malahide Estuary	100m back	719423	747723	7.39	7.49	0.09	0.81%
E02b	Malahide Estuary	110m back	719433	747722	7.32	7.42	0.09	0.79%
E02b	Malahide Estuary	120m back	719443	747721	7.26	7.35	0.09	0.81%
E02b	Malahide Estuary	130m back	719453	747720	7.20	7.28	0.08	0.79%
E02b	Malahide Estuary	140m back	719463	747719	7.14	7.22	0.08	0.78%
E02b	Malahide Estuary	150m back	719473	747719	7.09	7.17	0.08	0.77%
E02b	Malahide Estuary	160m back	719483	747718	7.04	7.12	0.08	0.78%
E02b	Malahide Estuary	170m back	719493	747717	7.00	7.07	0.07	0.77%
E02b	Malahide Estuary	180m back	719503	747716	6.96	7.03	0.07	0.74%
E02b	Malahide Estuary	190m back	719513	747716	6.92	6.99	0.07	0.75%
E02b	Malahide Estuary	200m back	719522	747715	6.88	6.95	0.07	0.76%
E03a	Malahide Estuary	10m back	719273	747642	7.31	7.40	0.09	0.77%
E03a	Malahide Estuary	20m back	719263	747643	7.38	7.48	0.10	0.78%
E03a	Malahide Estuary	30m back	719253	747644	7.42	7.52	0.10	0.77%
E03a	Malahide Estuary	40m back	719243	747645	7.40	7.50	0.10	0.76%
E03a	Malahide Estuary	50m back	719233	747646	7.35	7.45	0.10	0.76%
E03a	Malahide Estuary	60m back	719223	747646	7.29	7.38	0.10	0.75%
E03a	Malahide Estuary	70m back	719213	747647	7.22	7.31	0.09	0.73%
E03a	Malahide Estuary	80m back	719203	747648	7.15	7.24	0.09	0.72%
E03a	Malahide Estuary	90m back	719193	747649	7.09	7.17	0.09	0.70%
E03a	Malahide Estuary	100m back	719183	747650	7.02	7.11	0.08	0.69%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment Impact - % of the Critical Level
E03a	Malahide Estuary	110m back	719173	747650	6.97	7.05	0.08	0.67%
E03a	Malahide Estuary	120m back	719163	747651	6.92	6.99	0.08	0.66%
E03a	Malahide Estuary	130m back	719153	747652	6.87	6.94	0.08	0.65%
E03a	Malahide Estuary	140m back	719143	747653	6.82	6.90	0.07	0.65%
E03a	Malahide Estuary	150m back	719133	747654	6.78	6.85	0.07	0.63%
E03a	Malahide Estuary	160m back	719123	747654	6.74	6.81	0.07	0.61%
E03a	Malahide Estuary	170m back	719113	747655	6.71	6.77	0.07	0.62%
E03a	Malahide Estuary	180m back	719103	747656	6.67	6.74	0.06	0.61%
E03a	Malahide Estuary	190m back	719094	747657	6.64	6.71	0.06	0.61%
E03a	Malahide Estuary	200m back	719084	747658	6.61	6.68	0.06	0.59%
E03b	Malahide Estuary	10m back	719326	747637	7.60	7.71	0.11	0.83%
E03b	Malahide Estuary	20m back	719336	747636	7.75	7.86	0.12	0.87%
E03b	Malahide Estuary	30m back	719346	747636	7.83	7.94	0.12	0.88%
E03b	Malahide Estuary	40m back	719356	747635	7.83	7.95	0.12	0.88%
E03b	Malahide Estuary	50m back	719366	747634	7.79	7.90	0.12	0.88%
E03b	Malahide Estuary	60m back	719376	747633	7.72	7.83	0.11	0.89%
E03b	Malahide Estuary	70m back	719386	747633	7.64	7.75	0.11	0.88%
E03b	Malahide Estuary	80m back	719396	747632	7.56	7.67	0.10	0.85%
E03b	Malahide Estuary	90m back	719406	747631	7.49	7.59	0.10	0.87%
E03b	Malahide Estuary	100m back	719416	747630	7.41	7.51	0.09	0.84%
E03b	Malahide Estuary	110m back	719426	747629	7.34	7.43	0.09	0.83%
E03b	Malahide Estuary	120m back	719435	747629	7.28	7.37	0.09	0.84%
E03b	Malahide Estuary	130m back	719445	747628	7.22	7.30	0.08	0.82%
E03b	Malahide Estuary	140m back	719455	747627	7.16	7.24	0.08	0.82%
E03b	Malahide Estuary	150m back	719465	747626	7.11	7.19	0.08	0.82%
E03b	Malahide Estuary	160m back	719475	747626	7.06	7.14	0.08	0.81%

Receptor Point (see Fig G)	Site Name	Location	X	Y	2029 Permitted Operation Concentration (kg N/ha/yr)	2029 Proposed Operation Concentration (kg N/ha/yr)	2029 Principal Assessment Impact – Concentration (kg N/ha/yr)	Principal Assessment Impact - % of the Critical Level
E03b	Malahide Estuary	170m back	719485	747625	7.02	7.09	0.07	0.79%
E03b	Malahide Estuary	180m back	719495	747624	6.97	7.05	0.07	0.80%
E03b	Malahide Estuary	190m back	719505	747623	6.93	7.00	0.07	0.79%
E03b	Malahide Estuary	200m back	719515	747622	6.90	6.97	0.07	0.77%
E08a	Baldoyle Bay	Coastal	723457	742425	5.27	5.27	0.00	0.04%
E08b	Baldoyle Bay	Coastal	724402	742427	4.94	4.95	0.00	0.03%
E08c	Baldoyle Bay	Coastal	725186	742565	5.02	5.02	0.00	0.02%
E08d	Baldoyle Bay	Coastal	723462	741381	5.28	5.29	0.00	0.05%
E08e	Baldoyle Bay	Coastal	726037	741053	4.77	4.77	0.00	0.05%
E08f	Baldoyle Bay	Coastal	727679	740679	5.48	5.48	0.00	0.03%
E09a	Howth Head	Coastal	728837	739432	4.78	4.78	0.00	0.06%
E09b	Howth Head	Coastal	727485	738445	5.28	5.29	0.00	0.06%
E09c	Howth Head	Coastal	729881	736278	5.19	5.19	0.00	0.03%
E10a	Irelands Eye	Coastal	728500	741006	4.94	4.94	0.00	0.07%
E10b	Irelands Eye	Coastal	729087	741463	4.91	4.91	0.00	0.03%
E11a	North Dublin Bay	Coastal	720996	736052	5.35	5.36	0.01	0.11%
E11b	North Dublin Bay	Coastal	721973	737200	5.24	5.25	0.01	0.20%
E11c	North Dublin Bay	Coastal	722674	738136	4.93	4.95	0.01	0.06%
E11d	North Dublin Bay	Coastal	723683	738845	4.92	4.91	0.00	0.22%
E12a	Malahide Estuary	Coastal	722845	746223	5.26	5.27	0.01	0.24%

Figure G Air Quality Receptor Locations (Sheet 1)



AECOM

PROJECT
Dublin Airport Passenger Cap Bill

CLIENT
Dublin Airport Authority

CONSULTANT
AECOM Limited
2 City Walk
Leeds
LS11 9AR
www.aecom.com

LEGEND
Nature Conservation Receptors
SAC
SPA

NOTES
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

ISSUE PURPOSE
FINAL

PROJECT NUMBER
60786817

SHEET TITLE
Air Quality Sensitive Receptors

SHEET NUMBER

Figure G Air Quality Receptor Locations (Sheet 2)

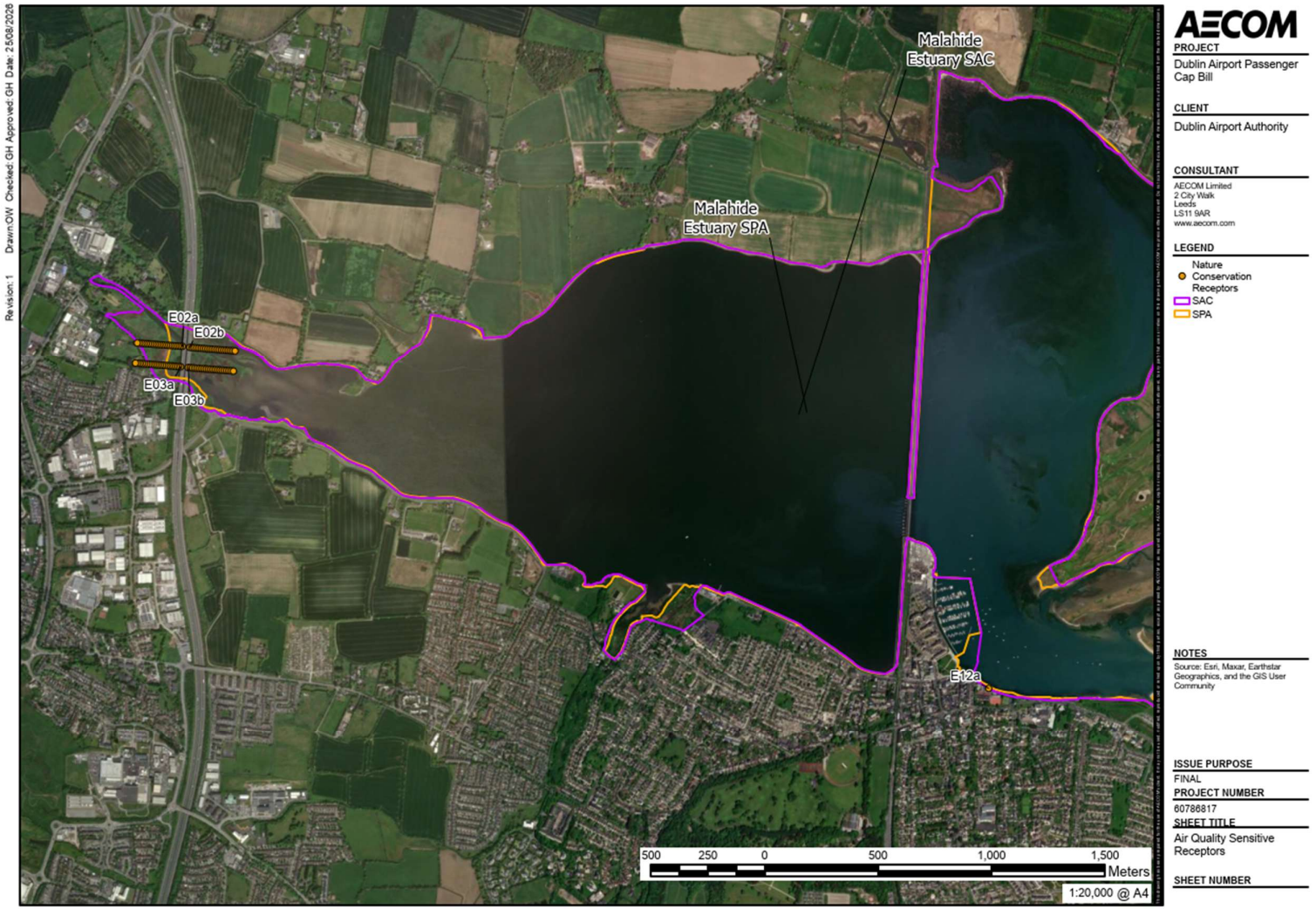
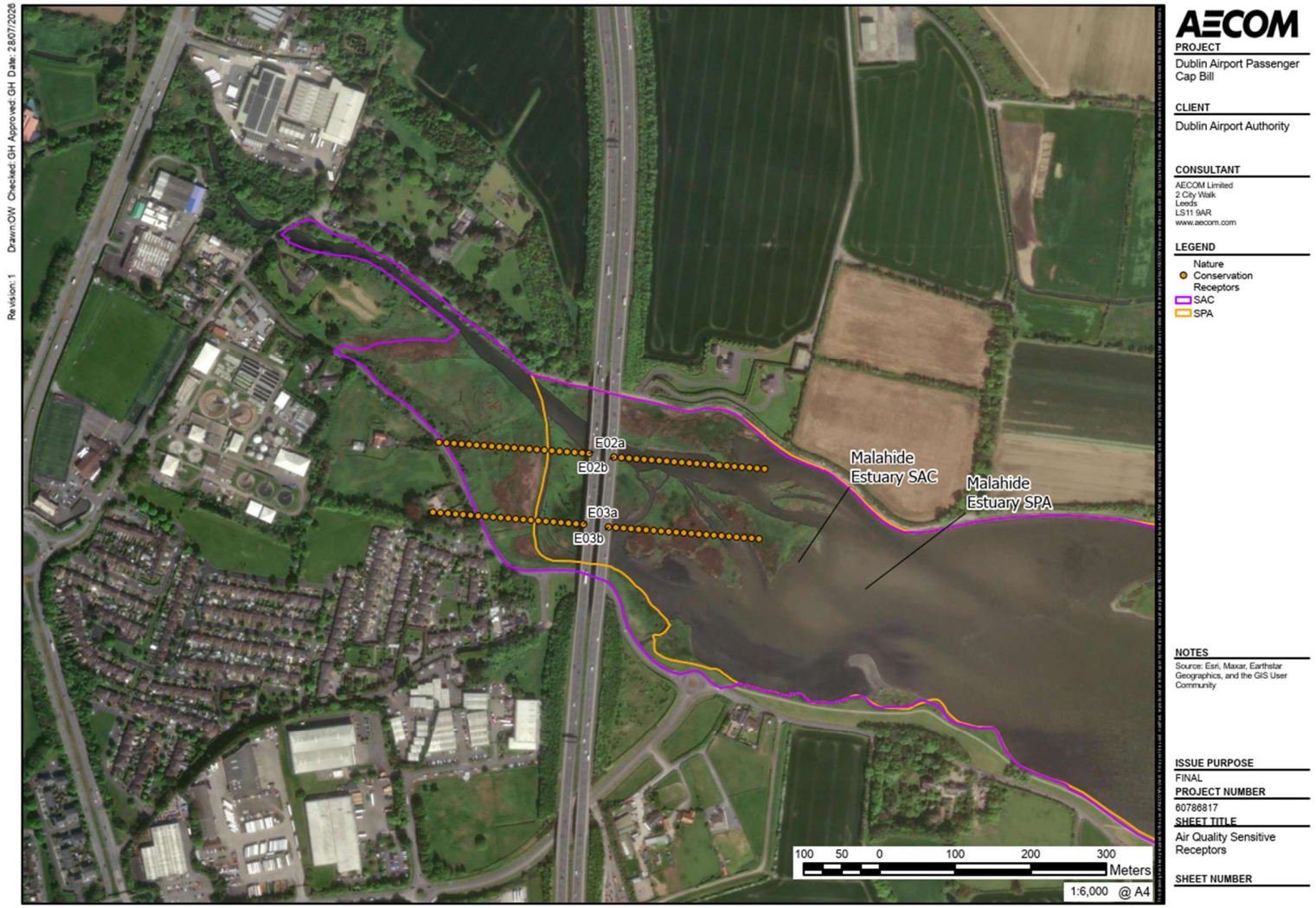


Figure G Air Quality Receptor Locations (Sheet 3)



Appendix H Dublin Airport Operating Scenarios

MOTT MACDONALD



Dublin Airport Operating Scenarios

Current State and Forecast Operating Schedules: developed in support of the Dublin Airport (Passenger Capacity) Act 2026

October 2026

daa

Version 1.2

Revision Record and Disclaimer

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Version	Date	Originator	Checker	Approver
1.0	08/07/2026	Various	NR	JC
1.1	09/09/2026	Various	NR	JC
1.2	12/10/2026	Various	NR	JC
1.2.1	26/10/2026	Various	NB	JC

- Version 1.2 based on schedules “MM DAA Forecast Schedules 32m, 40m cases v3.1 delivery.xls”
- Version 1.2.1 includes minor text changes only from v1.2

Abbreviations

ATM	Air Transport Management
DDFS	Design Day Flight Schedule
DUB	Dublin Airport
EIA	Environmental Impact Assessment
IAA	Irish Aviation Authority
LCC	Low Cost Carrier
mppa	millions of passengers per annum
Pax	Passenger

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2. Operating Schedules	14
3. Fleet Modernisation	23
4. Annual Traffic Outputs	26

Executive summary

Introduction

Dublin Airport (DUB) is currently subject to a planning condition related to the development of Terminal 2 (which opened in 2010) that caps DUB's terminal passenger throughput at 32 million passengers per annum (mppa). This study is in support of an Environmental Impact Assessment Report (EIAR) being prepared in relation to the making of the Proposed Order on the direction of the Minister pursuant to the Dublin Airport (Passenger Capacity) Act 2026.

This report describes the development of operating schedules for Dublin Airport (DUB) representing the existing permitted capacity of 32 mppa, current state of operations (2025) and future operating scenarios up to 40 mppa.

These operating schedules translate the assumed operating conditions of Dublin Airport into defined datasets that can be applied consistently across the environmental assessments being undertaken as part of the Environmental Impact Assessment.

The operating schedules represent the planned operations on a representative busy day at the airport. The schedules contain full flight-by-flight details – airline, arrival/departure time, aircraft type, route (origin/destination airport), service type (scheduled passenger, charter passenger, cargo, etc), aircraft turnaround links, and assumed number of passengers. The schedules reflect the operating assumptions for each scenario – runway operating arrangements and capacity, night flying restrictions and other relevant operational parameters.

The aircraft fleet mix reflects the assumed year of the operating schedule, taking account of airline fleet modernisation based on expected aircraft retirement and deliveries.

Operating Schedule Scenarios – Annual and Busy Day Traffic Parameters

Schedule	Annual Pax (m)	Annual ATMs (000s)	Busy Day ATMs (24h)	Scheduled Night Flights (2300-0700)
1. Existing Permitted Capacity (2023, 32 mppa)	32	239.8	761	130
2. Current State (2025, 36.4 mppa)	36.4	255.6	798	115
3. Future Operating Scenario (2029, 40 mppa)	40	279.0	884	148
4. Do Nothing Future State (2029, 32 mppa)	32	239.8	761	130

Executive summary

Summary of Operating Schedules

The tables below summarise the scenarios and key operational assumptions adopted for the suite of operating schedules developed for this study.

Scenarios

Schedule	Operational Assumptions
Schedule 1	Existing Permitted Capacity (2023) • Based on a busy day schedule in Summer 2023, equivalent to 32 mppa • North Runway operating hours 07:00–22:59 • Represents the permitted operational baseline
Schedule 2	Current State (2025) • Based on actual busy day operations in Summer 2025, equivalent to 36.4 mppa • North Runway operating hours 07:00–22:59 • Represents current operations in the most recent year
Schedule 3	Future Operating Scenario (2029) • Growth of Schedule 1 to represent the equivalent of 40 mppa, forecast to occur in 2029 • Airline fleet modernisation to represent expected aircraft in service in 2029 • North Runway operating hours 06:00–23:59 • Annual Noise Quota System (NQS) system with a limit of 16,260 between the hours of 23:00-06:59 • Represents the future operational scenario associated with the adoption of the Proposed Order
Schedule 4	Do Nothing Future State (2029) • Based on Schedule 1 with no growth, equivalent to 32 mppa • Airline fleet modernisation to represent expected aircraft in service in 2029 • North Runway operating hours 06:00–23:59 • Annual Noise Quota System (NQS) system with a limit of 16,260 between the hours of 23:00-06:59 • Provides a constrained future comparator in the absence of the Proposed Order

Annual Passenger Outputs

Impact of Operating Scenarios

This study has developed operating schedules based on the operational assumptions and scenarios described above. The table opposite compares the annualised number of passengers for each scenario with the unconstrained demand forecast provided by daa (Centreline scenario, 2026).

- **Unconstrained Forecast (Base)** – The unconstrained demand forecasts are daa forecasts developed in 2026 (issued April 2026).

  Unconstrained demand is based on the daa's Centreline growth case. Demand is expected to reach 40 mppa by 2029 and 55 mppa by 2046.

- **Do Nothing – Existing Permitted Capacity (Schedule 1) and Do Nothing Future State (Schedule 4) – 32 mppa cap**
  - Schedule 1 Existing Permitted Capacity (32 mppa, 2023) is the baseline 2023 flight schedule, representing a typical busy day (Friday) in the peak summer month (August). Although DUB handled 33.5 mppa in the 2023 calendar year, it reached 32 mppa on a 12-month rolling basis during 2023, and the Schedule 1 baseline is representative of the airport operating at 32 mppa.
  - Schedule 4 Do Nothing Future State (32 mppa, 2029) has the same number of passengers and flights as Schedule 1, representing a future 32 mppa capped scenario, but includes airline fleet modernisation based on expected aircraft retirement and deliveries by 2029. The Schedule 4 fleet is, on average, quieter and more fuel efficient than the 2023 baseline fleet.
- **Future Operating Scenario (Schedule 3) – 40 mppa**
  - Schedule 3 Future Operating Scenario (40 mppa, 2029) represents growth in the busy day schedule up to the equivalent of 40 mppa, as well as airline fleet modernisation to 2029.
  - The operating restrictions assumed are: (1) an annual Night Quota System with 16,260 noise points and (2) the single runway operations 00:00-05:59 – based on ANCA Regulatory Decision (Ref F20A/0668, 22 June 2022)
  - With these operating restrictions, our modelling indicates that DUB is able to grow in line with the unconstrained demand forecast up to 40 mppa in 2029.

Annual Passengers (millions)

Scenarios	Unconstrained Forecast	Do Nothing Future State 32 mppa (Schedules 1 and 4)	Future Operating Scenario 40 mppa (Schedule 3)
2015	25.0		
2016	27.9		
2017	29.6		
2018	31.5		
2019	32.9	32.9	32.9
2020	7.4	7.4	7.4
2021	8.5	8.5	8.5
2022	28.1	28.1	28.1
2023	33.5	**32**	33.5
2024	34.6	32	34.6
2025	36.4	32	36.4
2026	37.5	32	37.5
2027	38.6	32	38.6
2028	39.6	32	39.6
2029	40.5	32	**40**
2030	41.5	32	40
2031	42.3	32	40
2032	43.8	32	40
2033	45.0	32	40
2034	46.2	32	40
2035	47.1	32	40
2036	47.9	32	40
2037	48.7	32	40
2038	49.4	32	40
2039	50.1	32	40
2040	50.9	32	40
2041	51.6	32	40
2042	52.3	32	40
2043	53.0	32	40
2044	53.7	32	40
2045	54.4	32	40
2046	55.1	32	40

Source: Mott MacDonald analysis, based on daa Centreline *forecast scenario (2026)*

Annual Air Transport Movement Outputs

Impact of Operating Scenarios

The table opposite summarises the impacts on annual air transport movements (ATMs), equivalent to the annual passenger impacts discussed above.

- **Unconstrained Forecast (Base)** – The unconstrained demand forecasts are daa forecasts developed in 2026 (issued April 2026).

  Unconstrained demand is based on the daa's Centreline growth case. Demand is expected to reach 279,000 ATMs by 2029 (equivalent to 40 mppa) and around 379,000 ATMs by 2046 (equivalent to 55 mppa).

- **Do Nothing – Existing Permitted Capacity (Schedule 1) and Do Nothing Future State (Schedule 4) – 32 mppa cap**
  - The Existing Permitted Capacity (Schedule 1, 2023 baseline) and Do Nothing Future State (Schedule 4, 2029) are constrained at about 239,800 annual ATMs, equivalent to 32 mppa.
  - The Do Nothing Future State (Schedule 4) incorporates airline fleet modernisation to 2029.

- **Future Operating Scenario (Schedule 3) – 40 mppa**
  - Schedule 3 Future Operating Scenario (40 mppa, 2029) is constrained at about 279,000 annual ATMs by 2029, equivalent to 40 mppa, and incorporates airline fleet modernisation to 2029.

Annual Air Transport Movements (thousands)

Scenarios	Unconstrained Forecast	Do Nothing Future State 32 mppa (Schedules 1 and 4)	Future Operating Scenario 40 mppa (Schedule 3)
2015	198		
2016	215		
2017	223		
2018	233		
2019	239	239	239
2020	93	93	93
2021	133	133	133
2022	212	212	212
2023	242	**240**	242
2024	245	240	245
2025	256	240	256
2026	261	240	261
2027	264	240	264
2028	272	240	272
2029	279	240	**279**
2030	285	240	279
2031	291	240	279
2032	301	240	279
2033	310	240	279
2034	317	240	279
2035	324	240	279
2036	329	240	279
2037	335	240	279
2038	340	240	279
2039	345	240	279
2040	350	240	279
2041	355	240	279
2042	360	240	279
2043	365	240	279
2044	369	240	279
2045	374	240	279
2046	379	240	279

Source: Mott MacDonald analysis, based on daa Centreline *forecast scenario (2026)*

Introduction

Executive summary

1. Introduction

2. Operating Schedules

3. Fleet Modernisation

4. Annual Traffic Outputs

Introduction

Introduction

Dublin Airport (DUB) is currently subject to a planning condition related to the development of Terminal 2 (which opened in 2010) that caps DUB's terminal passenger throughput at 32 million passengers per annum (mppa). This study is in support of an Environmental Impact Assessment Report (EIAR) being prepared in relation to the making of the Proposed Order on the direction of the Minister pursuant to the Dublin Airport (Passenger Capacity) Act 2026.

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These operating schedules translate the assumed operating conditions of Dublin Airport into defined datasets that can be applied consistently across the environmental assessments being undertaken as part of the Environmental Impact Assessment.

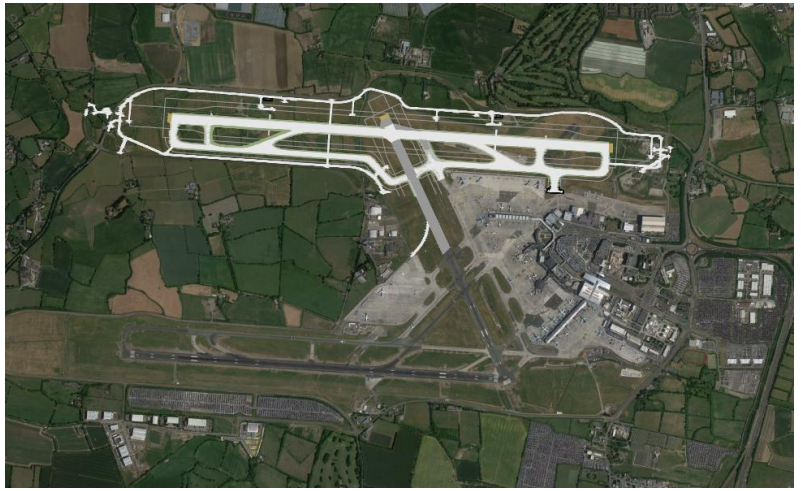
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The aircraft fleet mix reflects the assumed year of the operating schedule, taking account of airline fleet modernisation based on expected aircraft retirement and deliveries.

Dublin Airport Terminal 2



New North Runway Layout



Source: daa

Introduction

Irish National Aviation Policy

The Department of Transport, Tourism and Sport published a National Aviation Policy (NAP) for Ireland in August 2015. The goals of the NAP are:

- to enhance Ireland's connectivity by ensuring safe, secure and competitive access responsive to the needs of business, tourism and consumers;
- to foster the growth of aviation enterprise in Ireland to support job creation and position Ireland as a recognised global leader in aviation; and
- to maximise the contribution of the aviation sector to Ireland's economic growth and development.

The NAP identified the opportunity to develop Dublin Airport as a secondary hub, competing effectively with the UK and other European airports for the expanding global aviation services market. This is seen as an important means of maximising air access for the Irish economy. The NAP also identified importance of ensuring that Dublin Airport has sufficient capacity, including a second, parallel runway, to facilitate its development as a hub.

The commitments of the NAP include:

- Creating conditions to encourage the development of new routes and services, particularly to new and emerging markets;
- Ensuring a high level of competition among airlines operating in the Irish market;
- Optimising the operation of the Irish airport network to ensure maximum connectivity to the rest of the world;
- Ensuring that the regulatory framework for aviation reflects best international practice and that economic regulation facilitates continued investment in aviation infrastructure at Irish airports to support traffic growth

The proposed night restrictions at DUB run counter to these policy objectives in that they limit growth at the airport, reduce potential new routes and services (especially to emerging markets), and do not serve to maximise connectivity.



Traffic Mix

Passenger Traffic

The Dublin schedule is mainly made up of short haul services to the UK and other parts of Europe (87% of flights), operated primarily by the based-carriers: Ryanair, Aer Lingus, and Emerald Airlines. Together these carriers make up 76% of operations.

Long-haul operations accounted for approximately 17% of total seat capacity offered out of DUB, primarily on Transatlantic routes and the Middle East.

Cargo Flights

Cargo flights represent about 3% of movements at DUB, mainly operated by package integrators such as DHL, FedEx and UPS.

Aer Lingus

In 2025, Aer Lingus' short-haul fleet consisted of 34 Airbus A320/A320neo aircraft. Its long-haul fleet consisted of 13 Airbus A330s and 11 Airbus A321LR/XLRs(1). Aer Lingus operates a hybrid business model, blending aspects of full service and low cost carrier strategies. In particular, it seeks to maximise aircraft utilisation from its DUB based fleet.

Aer Lingus has been growing its transatlantic services and developing DUB as a gateway Transatlantic-European hub.

Ryanair

Ryanair operated 36 DUB-based aircraft in Summer 2025 out of a group-wide fleet of 618 aircraft(2). Of these 618 aircraft, 181 (29%) are B737 Max 8200s (out of a total order of 210 aircraft). Ryanair also has an order and options for 300 B737 Max-10 aircraft with planned deliveries in the 2027 to 2034 period.

In additional to DUB-based flying, Ryanair also serves DUB from its other European bases, with away-based flights representing about 25% of its DUB operations. Ryanair operates from 93 bases throughout Europe and serves 233 airports. DUB is its second largest base after London Stansted. The Ryanair LCC business model is built on achieving high aircraft utilisation, with long operating days and quick aircraft turnarounds.

Market share & capacity summary table by main DUB carrier

Airline	ATMs	Seats	Seats/ATM
Ryanair	40%	43%	192
Aer Lingus	26%	28%	194
Emerald Airlines	10%	4%	72
British Airways	2%	2%	150
Lufthansa	2%	2%	180
KLM	2%	1%	134
Others	19%	21%	199
Total	100%	100%	180

Market share & capacity summary table by main DUB market segment

Airline	ATMs	Seats	Seats/ATM
1. UK London	10%	10%	179
2. UK Provincial	21%	16%	135
3. Eastern Europe	6%	6%	190
4. Western Europe	25%	24%	177
5. Southern Europe	24%	25%	188
6. North America	11%	14%	240
7. Other Regions	2%	3%	291
8. Domestic	1%	1%	130
Total	100%	100%	180

Source: Mott MacDonald analysis of Schedule 2 Current State (2025)

(1) CAPA Fleet Database as at 28 August 2025
(2) Ryanair Investors' presentation (July 2025) (https://investor.ryanair.com/wp-content/uploads/2025/07/Q1-FY26-Ryanair-Presentation.pdf)

Patterns of Demand

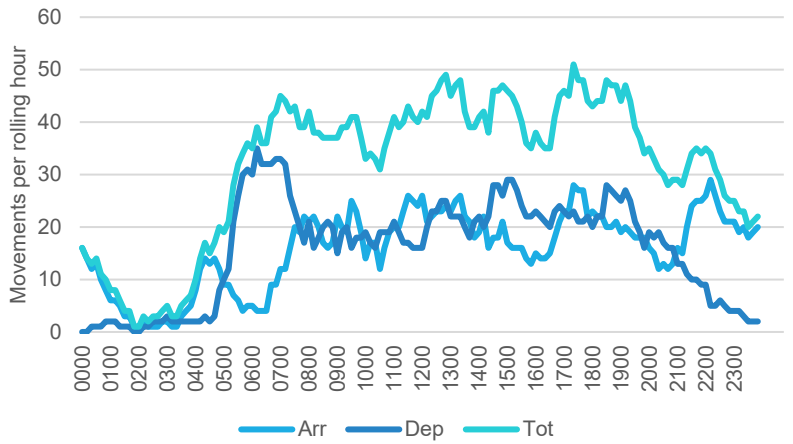
Patterns of Demand

- The schedule structure at DUB reflects the business models of both Aer Lingus and Ryanair, with a high proportion of DUB based aircraft operating high utilisation short haul services.
- There is a sharp departures peak in the 06:00 hour and an arrivals peak around 22:00 and 23:00 hours associated with the first departures and last arrivals of DUB based aircraft.
- Long-haul arrivals are concentrated in the morning period, with an early peak in the 05:00 hour and a broader peak around 08:00. Departures are spread from the mid-morning to early afternoon. This pattern of demand is typical of transatlantic services, where evening departures from North America fly overnight to arrive in DUB in the morning. Arrival times in DUB tend to be earlier than at other European airports due to Ireland's close proximity to North America and its time zone being 1h earlier than Central European Time.
- Between 01:30 and 04:30 there are few regularly scheduled flights – only a small number of freighter flights and some ad hoc passenger charter flights.

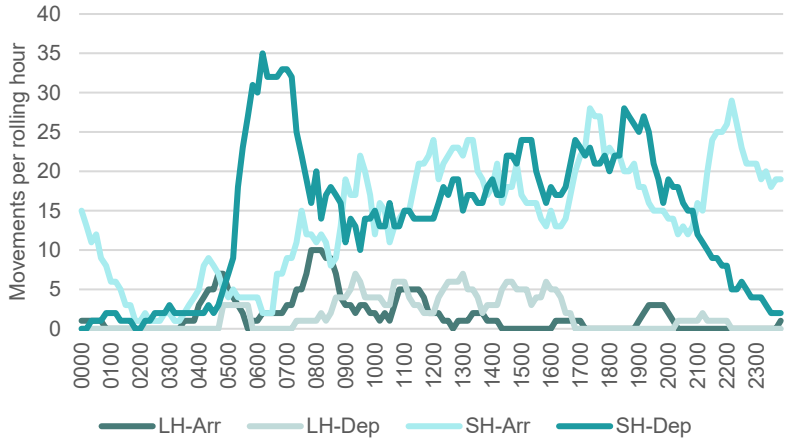
Flight Connections

- Development of DUB as a transatlantic hub requires efficient flight connections. The early morning long haul arrivals connect with a large number of first-wave short haul departures operated by DUB based aircraft. These short haul aircraft return to DUB from around 09:00 and connect with the transatlantic departures, departing between 10:00 and 17:00.
- Maintaining this hub connectivity requires early morning transatlantic arrivals from 05:00 local time to facilitate Eastbound connections with short haul services departing from around 06:00. Early first-wave short haul departures are required to ensure that the returning inbound arriving flight can provide Westbound connections with the long-haul departures in the mid to late morning.

Demand Profile – by Arrival / Departure / Total



Demand Profile – by Short-haul / Long-haul



Source: Mott MacDonald analysis; based on Schedule 1 Existing Permitted Capacity (2023)

Operating Schedules

Executive summary

1. Introduction
2. Operating Schedules
3. Fleet Modernisation
4. Annual Traffic Outputs

Methodology

Annual Forecasts

Unconstrained forecast of annual passenger demand and air transport movements (ATMs) were provided to Mott MacDonald by daa (reference DUB-FC-04-2026, issued April 2026). These forecasts expect that the 40 mppa traffic level will be reached in 2029.

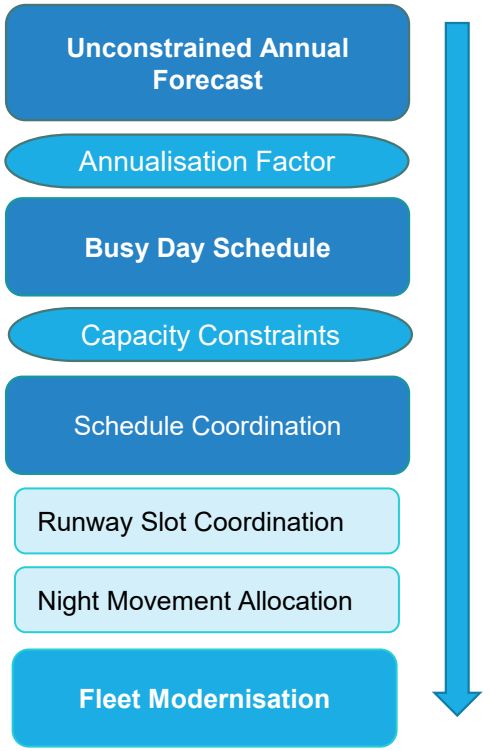
Busy Day Operating Schedules - Baseline

The baseline schedule is derived from operational data for the busy day in DUB in 2023, including schedules, fleet mix, route structures and overall activity. While recorded passenger throughput for the 2023 calendar year reached approximately 33.5 mppa, the underlying busy day schedule reflects a level of activity broadly consistent with the airport operating at circa 32 mppa(1).

Annualisation Factor

The busy day schedule is related to annual traffic by the annual-to-busy-day ratio (or *annualisation factor*). The annualisation factor is a function of the seasonality of traffic at the airport. It is typically taken as an average over a number of recent years of activity, excluding abnormal years such as the COVID-19 period.

The table below summarises the annual traffic, busy day number of flights (24h and during the night period), and the annualisation factors for each scenario schedule.



Operating Schedule Scenarios – Annual and Busy Day Traffic Parameters

Schedule	Annual Pax (m)	Annual ATMs (000s)	Busy Day ATMs (24h)	Scheduled Night Flights (2300-0700)	Busy Day Annualisation Factor	Night Annualisation Factor (2300-0700)
1. Existing Permitted Capacity (2023, 32 mppa)	32	239.8	761	130	315	253
2. Current State (2025, 36.4 mppa)	36.4	255.6	798	115	320	253
3. Future Operating Scenario (2029, 40 mppa)	40	279.0	884	148	315	253
4. Do Nothing Future State (2029, 32 mppa)	32	239.8	761	130	315	253

(1) The operating schedules for this study build upon the forecasting work previously undertaken for the Infrastructure Application (IA), which adopted a baseline year of 2023.

Methodology

Future Operating Scenario Schedules

The Future Operating Scenarios schedules add flights to the 2023 baseline busy day, equivalent to growth from 32 mppa to 40 mppa (+25%) by 2029.

Between 2023 and 2029, average passengers per ATM is forecast to grow from 133.4 to 143.4 (+7.4%) due mainly to airline fleet changes. This means that the +25% passenger growth to 40 mppa is equivalent to +16% ATM growth between 2023 and 2029. Therefore, the 2023 baseline operating schedule with 761 ATMs on the busy day is grown to 884 ATMs (+16%) by 2029.

The additional flights are added to the schedule in line with market demand by world region, shared proportionately by airline (between the main DUB-based carriers and other airlines). The timings of flights are based on commercially and operationally feasible timings, dependent on the airline and route, taking account of airline operating patterns and aircraft utilisation.

Scheduled night flights grow slightly more slowly than total ATMs – from 130 in 2023 to 148 in 2029 (+14%).

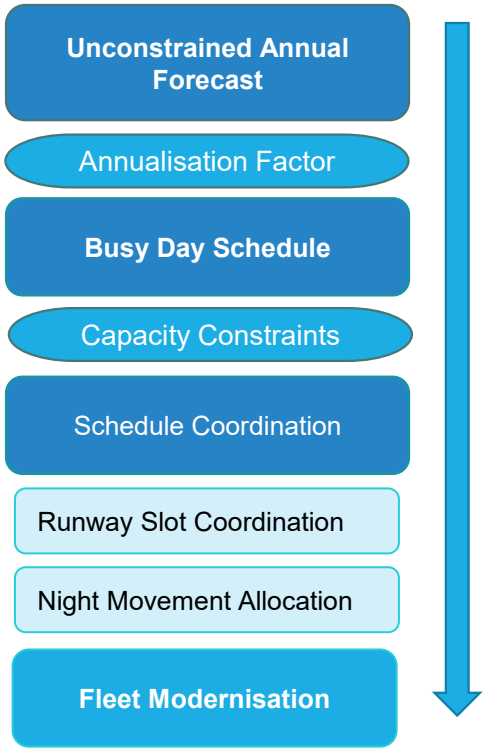
Schedule Coordination

The timing of flights are adjusted to fit within assumed runway capacities for 2029 in a process which simulates the seasonal slot allocation process administered by DUB's slot coordinator(1). These runway capacities depend on the operational hours of the North Runway.

For night flying, the 2029 demand for 148 busy day night flights can be accommodated in Future Operating Scenarios with an Annual Noise Quota System (NQS) with a limit of 16,260 noise points (based on previous analysis undertaken for the Infrastructure Application).

Fleet Modernisation

The aircraft types used for future-year operating schedules is based on modelling of airline current (baseline) fleets, aircraft retirements and expected aircraft deliveries. See Section 3 – Fleet Modernisation for details.



(1) The IAA has appointed Airport Coordination Limited (ACL) as the slot coordinator for DUB. ACL allocates slot in accordance with the airport's declared operational capacities and with the EU Slot Regulation No. 95/93

Night Movement Demand (23:00 – 06:59 period)

Current Night Movements

In Schedule 1 Existing Permitted Capacity, representing 32 mppa in 2023, there were 130 regularly scheduled flights during the 23:00-06:59 night period on the busy day. This decreased to 115 in Schedule 2 Current State (2025), principally because Ethiopian Airlines ceased its transatlantic technical stop flights(1) at DUB and there were fewer night cargo flights than in 2023.

Short-haul scheduled services make up the bulk of DUB night flights, with pre-07:00 departures and arrivals after 23:00. There are also some long-haul early morning arrivals (before 07:00).

The night cargo operations are primarily flights operated by package integrators such as DHL, FedEx and UPS to their main sortation hubs. These operations are very time-critical in order to connect at these hubs and to achieve an overnight package delivery service.

Future Night Movement Demand

In the 40 mppa Future Operating Scenario Schedule 3, night flight demand is forecast at 148 night flights on the busy day, with night movements increasing in proportion to overall ATMs growth at DUB compared with the 32 mppa baseline.

The 32 mppa future Schedule 4 has the same night movements as the 2023 baseline Schedule 1 (130/night).

DUB Night Movement Demand – 23:00-06:59
(based on busy day operating schedules)

Schedule	Pax	Cargo	Other	Total
1. Existing Permitted Capacity (2023, 32 mppa)	96	25	9	130
2. Current State (2025, 36.4 mppa)	99	15	1	115
3. Future Operating Scenario (2029, 40 mppa)	114	25	9	148
4. Do Nothing Future State (2029, 32 mppa)	96	25	9	130

Source: Mott MacDonald analysis; daa schedule data

Night Slot Periods

The flight timings in the operating schedules are based on the on/off block times (ie, the times that the aircraft is schedule to arrive or depart from the gate). Night movements are defined based on the landing and takeoff times (ie, runway times).

Therefore, for a 23:00-06:59 night period, taking account of taxi times and a buffer for delayed flights, scheduled night flights are defined as flights with arrival and departure times in the following bands:

- Arrivals 22:45 to 07:10 on blocks time (inclusive)
- Departures 22:30 to 06:45 off blocks time (inclusive)

(1) A “technical stop” is a flight that stops at the airport for refuelling purposes only, without embarking or disembarking passengers

Drivers of Night Movement Demand

There are a number of reasons why airlines need to schedule services during the 23:00-06:59 night period:

Aircraft Utilisation

- A key driver of airline cost efficiency and competiveness is the ability to achieve high levels of utilisation of their aircraft assets. The chart below illustrates the lines-of-flying (flights throughout the day) for representative DUB based aircraft.
- If airlines were restricted to a 16h operating day (07:00-23:00) then the necessary level of utilisation would not be achievable, impacting on the economic viability of aircraft based at DUB. Ryanair, for example, has operating bases at a number of airports and if it could not operate profitably at DUB then it would likely choose to base more of its aircraft at other airports.
- In this case, the traffic lost is not just the night period flights but also the daytime flights that the based aircraft would have operated throughout the day.
- If high aircraft utilisation cannot be achieved due to the reduced operating day resulting from the night restrictions, then the consequence is also likely to be higher fares for passengers on remaining services.

Time Zone Differences and Geographical location

- The 1h time difference between Ireland and mainland Europe means that flights need to leave early (before 07:00) to arrive in time for business passengers to have full working day at their destination.
- The geographical position of DUB means that there are longer sector distances to many European destinations than from other competing hub airports. This means that DUB requires longer operating days than competing European hubs. Similarly, DUB's proximity to North America compared to the rest of Europe means that transatlantic flights arrive earlier in DUB than at other European airports.

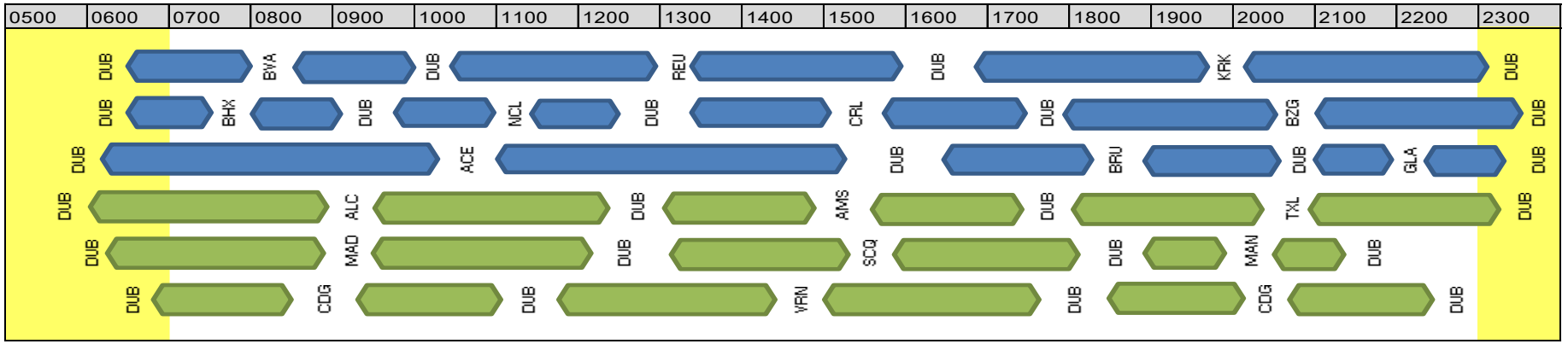
Hub Connections

- The DUB hub connecting model is predicated on early morning long-haul arrivals and early short haul departures able to return to connect with the long-haul departures. Without this connecting traffic, the Irish point-to-point market would be too small on its own to support many transatlantic services.

Punctuality and Resilience

- If aircraft lines-of-flying are squeezed into a shorter operating day there will be less flexibility in the schedule to cope with delays and disruption.

Illustration of Airline Airrcaft Utilisation



Capacity Constraints

Runway Capacities

The operating schedules are built to comply with DUB's runway operating limits, which depend on the hours of operation of the North Runway.

The baseline schedules Schedule 1 (2023) and Schedule 2 (2025) use the actual flight timings allocated by the DUB slot coordinator, compliant with the declared capacities for Summer 2023 and 2025 respectively. Schedule 4 Do Nothing Future State, capped at 32 mppa, has the same flights and flight timings as the 2023 baseline (Schedule 1).

The Future Operating Scenarios, equivalent to 40 mppa in 2029, assume the future runway capacities shown in the tables opposite. These capacities are benchmarked against the Summer 2026 limits declared by the IAA(1).

The North Runway operating hour assumptions are as follows:

- Schedule 1 Existing Permitted Capacity (2023, 32 mppa) 07:00-22:59
- Schedule 2 Current State (2025, 36.4 mppa) 07:00-22:59
- Schedule 3 Future Operating Scenario (2029, 40 mppa) 06:00-23:59
- Schedule 4 Do Nothing Future State (2029, 32 mppa) 07:00-22:59

Hourly Runway Capacity Assumptions

North Runway Operating 06:00-23:59

Hours	Arr	Dep	Tot
00:00-05:59	23	25	32
06:00	22	41	54
07:00	22	36	54
08:00	28	29	54
09:00	28	29	54
10:00	28	29	54
11:00	28	29	54
12:00	30	30	57
13:00	30	30	57
14:00	28	29	54
15:00	23	33	54
16:00	28	29	54
17:00	28	29	54
18:00	28	29	54
19:00	28	29	54
20:00	28	29	54
21:00	28	29	54
22:00	28	29	54
23:00	28	29	54

North Runway Operating 07:00-22:59

Hours	Arr	Dep	Tot
00:00-05:59	23	25	32
06:00	23	36	40
07:00	22	36	54
08:00	28	29	54
09:00	28	29	54
10:00	28	29	54
11:00	28	29	54
12:00	30	30	57
13:00	30	30	57
14:00	28	29	54
15:00	23	33	54
16:00	28	29	54
17:00	28	29	54
18:00	28	29	54
19:00	28	29	54
20:00	28	29	54
21:00	28	29	54
22:00	28	29	54
23:00	28	25	32

Single runway hours

10-minute Limits

Hours	Arr	Dep	Tot
Single runway hours	6	6*	9
Dual runway hours	6	7	13

(*) 7 departures per 10-minutes during the 06:00 hour

(1) S26-final-parameters.pdf (https://www.iaa.ie/docs/default-source/1c-economic-regulation/s26-final-parameters.pdf?sfvrsn=98324345_1)

Schedule Scenarios

Summary of Operating Schedules

The tables below summarise the scenarios and key operational assumptions adopted for the suite of operating schedules developed for this study.

Scenarios

Schedule	Operational Assumptions
Schedule 1	Existing Permitted Capacity (2023) • Based on a busy day schedule in Summer 2023, equivalent to 32 mppa • North Runway operating hours 07:00–22:59 • Represents the permitted operational baseline
Schedule 2	Current State (2025) • Based on actual busy day operations in Summer 2025, equivalent to 36.4 mppa • North Runway operating hours 07:00–22:59 • Represents current operations in the most recent year
Schedule 3	Future Operating Scenario (2029) • Growth of Schedule 1 to represent the equivalent of 40 mppa, forecast to occur in 2029 • Airline fleet modernisation to represent expected aircraft in service in 2029 • North Runway operating hours 06:00–23:59 • Annual Noise Quota System (NQS) system with a limit of 16,260 between the hours of 23:00-06:59 • Represents the future operational scenario associated with the Proposed Order
Schedule 4	Do Nothing Future State (2029) • Based on Schedule 1 with no growth, equivalent to 32 mppa • Airline fleet modernisation to represent expected aircraft in service in 2029 • North Runway operating hours 06:00–23:59 • Annual Noise Quota System (NQS) system with a limit of 16,260 between the hours of 23:00-06:59 • Provides a constrained future comparator in the absence of the Proposed Order

Schedule Scenarios

Schedule 1 Existing Permitted Capacity (2023, 32 mppa)

- Based on a busy day schedule in Summer 2023, equivalent to 32 mppa
- North Runway operating hours 07:00–22:59
- Represents the permitted operational baseline

► The baseline 2023 schedule structure at DUB reflects the business models of both Aer Lingus and Ryanair, with a high proportion of DUB based aircraft operating high utilisation short haul services.

► There is a sharp departures peak in the 06:00 hour and an arrivals peak around 22:00 and 23:00 hours associated with the first departures and last arrivals of DUB based aircraft.

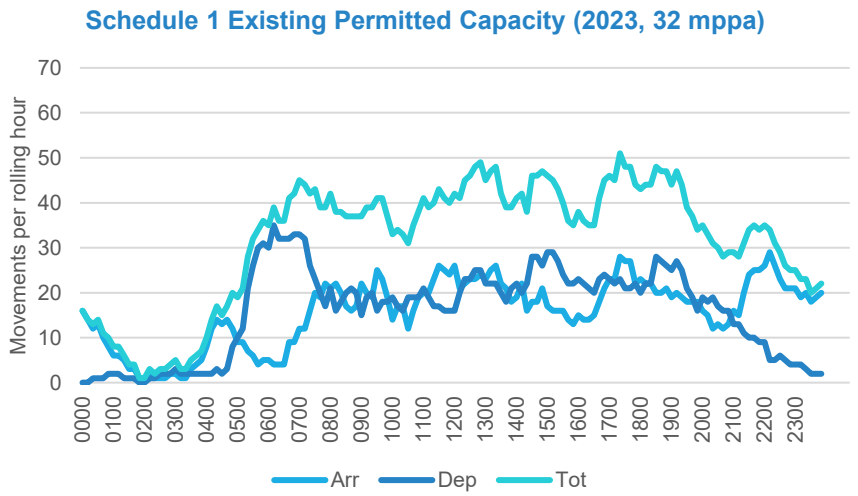
► 2023 was the first full year of North Runway operations at DUB.

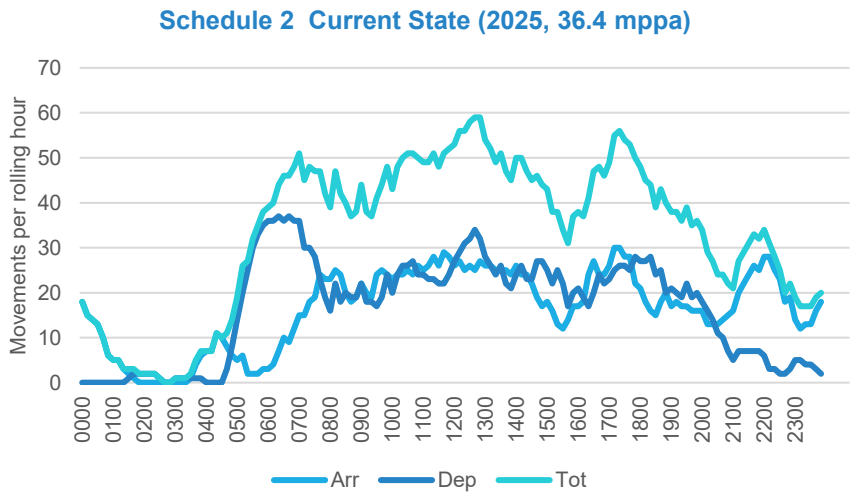
Schedule 2 Current State (2025, 36.4 mppa)

- Based on actual busy day operations in Summer 2025, equivalent to 36.4 mppa
- North Runway operating hours 07:00–22:59
- Represents current operations in the most recent year

► The 2025 busy day schedule has 5% more ATMs than 2023 and a similar overall structure with a departures peak in the 06:00 hour and an arrivals peak around 22:00 and 23:00 hours associated with the first departures and last arrivals of DUB based aircraft.

► The 2025 schedule has a sharper midday peak than seen in 2023.





Schedule Scenarios

Schedule 3 Future Operating Scenario (2029, 40 mppa)

- Growth of Schedule 1 to represent the equivalent of 40 mppa, forecast to occur in 2029
- Airline fleet modernisation to represent expected aircraft in service in 2029
- North Runway operating hours 06:00–23:59
- Annual Noise Quota System (NQS) system with a limit of 16,260 between the hours of 23:00-06:59
- Represents the future operational scenario associated with the Proposed Order

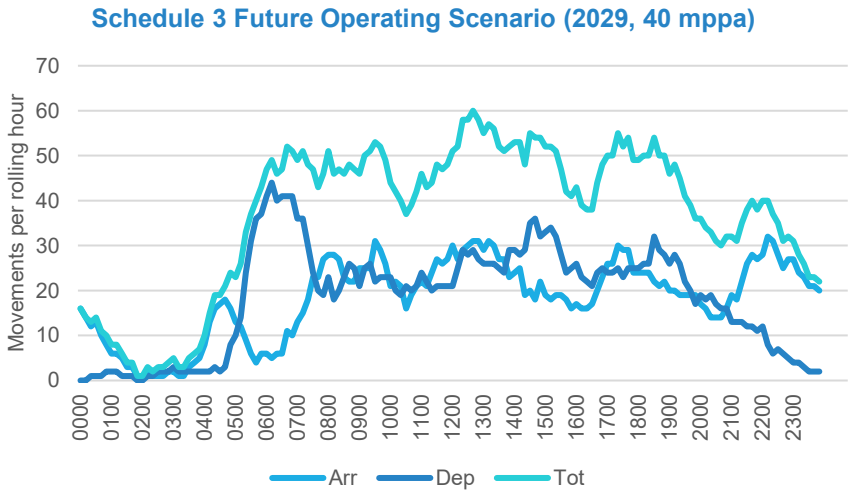
► The 2029 forecast busy day schedule has 16% more ATMs than the 2023 baseline, but a similar overall structure with a departures peak in the 06:00 hour and an arrivals peak around 22:00 and 23:00 hours associated with the first departures and last arrivals of DUB based aircraft.

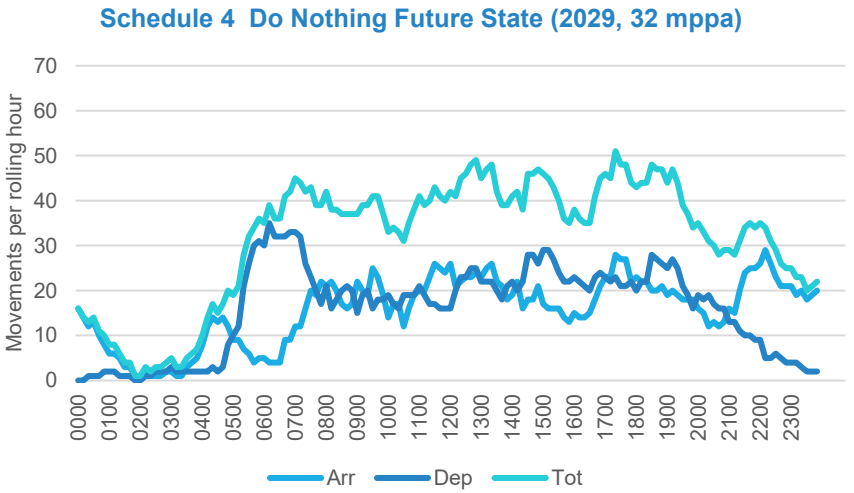
► The peak in total movements occurs around midday, as seen in the 2025 actual schedule.

Schedule 4 Do Nothing Future State (2029, 32 mppa)

- Based on Schedule 1 with no growth, equivalent to 32 mppa
- Airline fleet modernisation to represent expected aircraft in service in 2029
- North Runway operating hours 06:00–23:59
- Annual Noise Quota System (NQS) system with a limit of 16,260 between the hours of 23:00-06:59
- Provides a constrained future comparator in the absence of the Proposed Order

► This 32 mppa Do Nothing Future State schedule has the same number of flights and pattern of demand as the 2023 baseline Schedule 1.





Introduction

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1. Introduction

2. Operating Schedules

3. Fleet Modernisation

4. Annual Traffic Outputs

Aircraft Manufacturers' Development and Production Cycle

Aircraft development cycle

The development of commercial transport aircraft represents large capital investments for the aircraft manufacturers, typically following a 20 to 30 year cycle between generations.

The pace of aircraft development depends on the rate of improvement in technology (eg, engine efficiency), with new types typically seeking to achieve a 20% improvement in seat-kilometre costs over previous generation competitors, improved fuel efficiency and reduced noise.

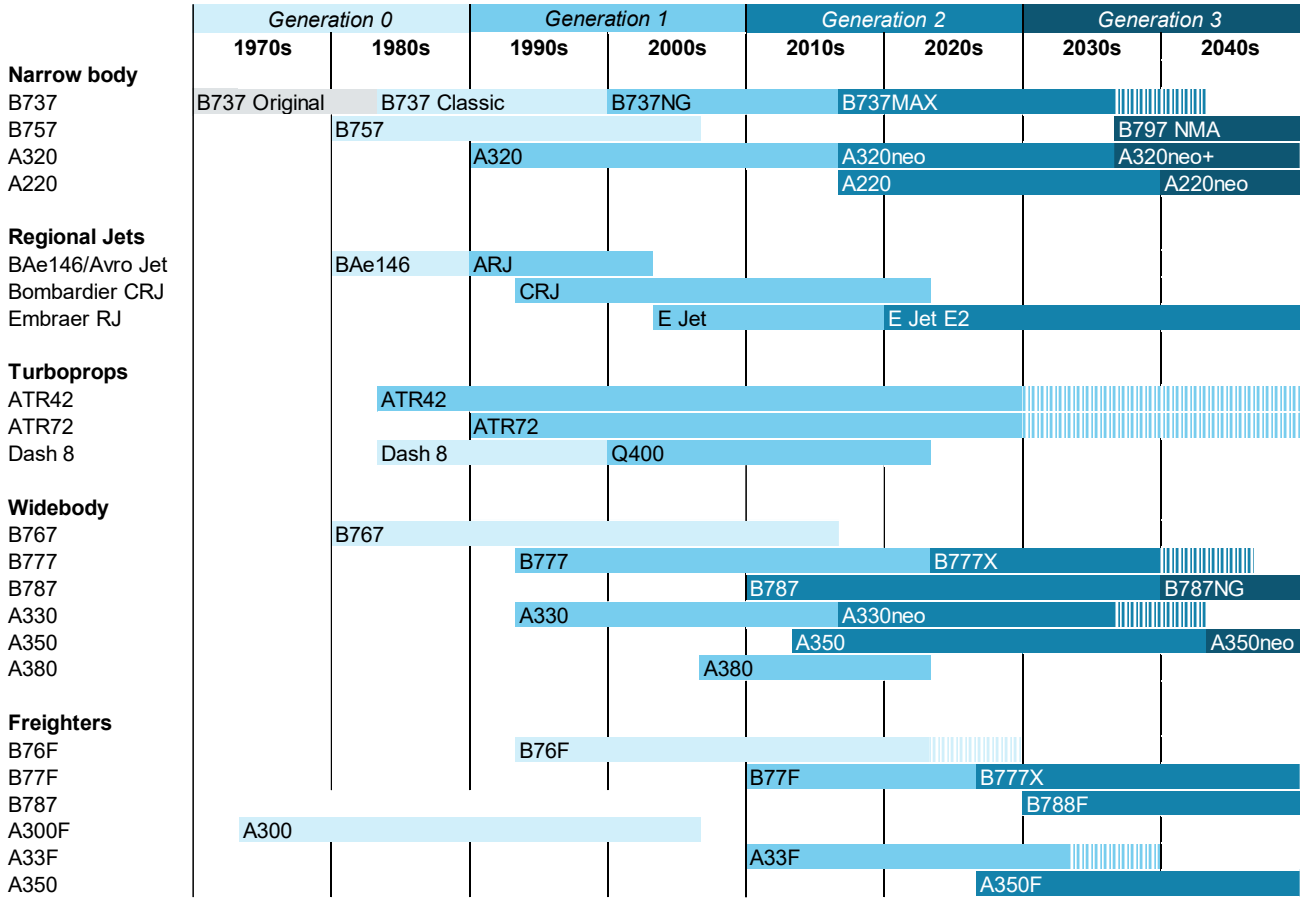
Another factor which influences manufactures' commitment to new aircraft development is competition between OEMs. For example, Airbus developed the A350 as a response to the sales success of Boeing's B787. Similarly, Boeing launched the B737MAX as a response to Airbus' A320neo programme.

Once in service, aircraft have an operational lifespan of around 25 years in mainline service, and longer as freighter conversions and as niche charter aircraft. As a consequence, an aircraft type may be in active service over 50 years after its initial development. For example, the A320 first went into service in 1988, and was in production until 2020. A newly-manufactured A320 entering airline service in 2020 is likely to still be flying until the mid 2040s.

Manufacturers are expected to develop Generation 3 (G3) aircraft types for entry into service from the late 2030's. These aircraft are expected to be a further generation of ultraefficient aircraft using conventional fossil jet fuel and Sustainable Aviation Fuels(SAF). Potential zero carbon emissions commercial aircraft (battery-electric or hydrogen powered) are not expected to enter service before 2050 and are beyond the scope of this study.

Commercial Aircraft Production Cycle

Dates of aircraft types in production by generation



Source: Mott MacDonald analysis, select aircraft types relevant to DUB

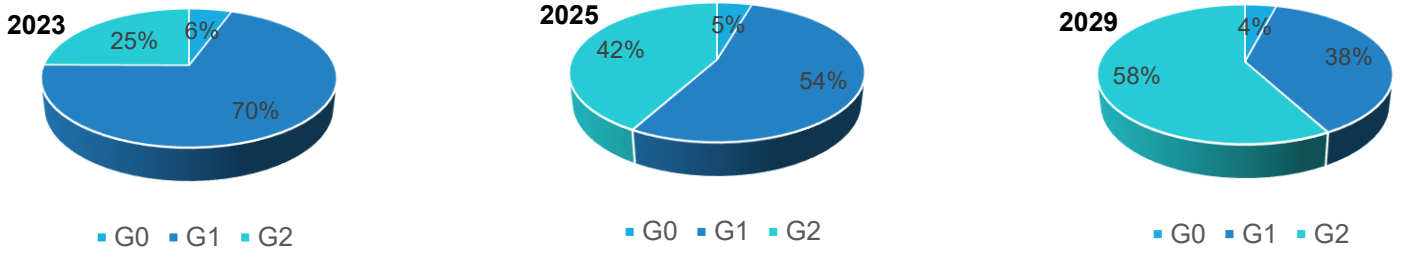
Fleet Modernisation

Introduction

In 2023, around 70% of DUB operations use the previous generation (G1) aircraft types, with 6% of movements operated by older aircraft (G0) and 25% of movements operated by the most modern (G2) types.

By 2025, the G1 share fell to 54% and the most modern G2 types grew to 42%. Our study predicts that the current G1 aircraft types will continue to be replaced on a phased basis by next generation G2 types. By 2029, when DUB is forecast to reach 40 mppa, the G1 share will decrease to about 38% and the G2 share increase to 58%

DUB Fleet Evolution 2023 - 2029



Source: Mott MacDonald analysis of daa data and schedules (2023, 2025), Mott MacDonald projections (2029)

Note on Aircraft Generation Categorisation
For the purposes of these analyses, aircraft have been categorised into generations of aircraft technology:

- **Generation 0 (G0) –** Older aircraft types, typically developed in the 1970s or 1980s and now generally out of production, eg, B737 Classic (300/400/500), B757, B767, A300, A310
- **Generation 1 (G1)** – Aircraft types typically developed in the 1990s or 2000s, eg, B737NG (700/800/900), B777, A320ceo, A330ceo, A340, A380, Bombardier CRJ, Embraer EJets, Avro RJ, Bombardier Q400, ATR42/72
- **Generation 2 (G2)** – Latest aircraft types recently entering production or under development, eg, B737MAX, B787, B777X, A220, A320neo, A330neo, A350, Embraer Ejet-E2
- **Generation 3 (G3)** – Further new-generation aircraft types not yet in development, expected to enter service from the late 2030s

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Annual Passenger Outputs

Impact of Operating Scenarios

This study has developed operating schedules based on the operational assumptions and scenarios described above. The table opposite compares the annualised number of passengers for each scenario with the unconstrained demand forecast provided by daa (Centreline scenario, 2026).

- **Unconstrained Forecast (Base)** – The unconstrained demand forecasts are daa forecasts developed in 2026 (issued April 2026).

  Unconstrained demand is based on the daa's Centreline growth case. Demand is expected to reach 40 mppa by 2029 and 55 mppa by 2046.

- **Do Nothing – Existing Permitted Capacity (Schedule 1) and Do Nothing Future State (Schedule 4) – 32 mppa cap**
  - Schedule 1 Existing Permitted Capacity (32 mppa, 2023) is the baseline 2023 flight schedule, representing a typical busy day (Friday) in the peak summer month (August). Although DUB handled 33.5 mppa in the 2023 calendar year, it reached 32 mppa on a 12-month rolling basis during 2023, and the Schedule 1 baseline is representative of the airport operating at 32 mppa.
  - Schedule 4 Do Nothing Future State (32 mppa, 2029) has the same number of passengers and flights as Schedule 1, representing a future 32 mppa capped scenario, but includes airline fleet modernisation based on expected aircraft retirement and deliveries by 2029. The Schedule 4 fleet is, on average, quieter and more fuel efficient than the 2023 baseline fleet.
- **Future Operating Scenario (Schedule 3) – 40 mppa**
  - Schedule 3 Future Operating Scenario (40 mppa, 2029) represents growth in the busy day schedule up to the equivalent of 40 mppa, as well as airline fleet modernisation to 2029.
  - The operating restrictions assumed are: (1) an annual Night Quota System with 16,260 noise points and (2) the single runway operations 00:00-05:59 – based on ANCA Regulatory Decision (Ref F20A/0668, 22 June 2022)
  - With these operating restrictions, our modelling indicates that DUB is able to grow in line with the unconstrained demand forecast up to 40 mppa in 2029.

Annual Passengers (millions)

Scenarios	Unconstrained Forecast	Do Nothing Future State 32 mppa (Schedules 1 and 4)	Future Operating Scenario 40 mppa (Schedule 3)
2015	25.0		
2016	27.9		
2017	29.6		
2018	31.5		
2019	32.9	32.9	32.9
2020	7.4	7.4	7.4
2021	8.5	8.5	8.5
2022	28.1	28.1	28.1
2023	33.5	**32**	33.5
2024	34.6	32	34.6
2025	36.4	32	36.4
2026	37.5	32	37.5
2027	38.6	32	38.6
2028	39.6	32	39.6
2029	40.5	32	**40**
2030	41.5	32	40
2031	42.3	32	40
2032	43.8	32	40
2033	45.0	32	40
2034	46.2	32	40
2035	47.1	32	40
2036	47.9	32	40
2037	48.7	32	40
2038	49.4	32	40
2039	50.1	32	40
2040	50.9	32	40
2041	51.6	32	40
2042	52.3	32	40
2043	53.0	32	40
2044	53.7	32	40
2045	54.4	32	40
2046	55.1	32	40

Source: Mott MacDonald analysis, unconstrained demand based on daa Centreline *forecast scenario (2026)*

Annual Air Transport Movement Outputs

Impact of Operating Scenarios

The table opposite summarises the impacts on annual air transport movements (ATMs), equivalent to the annual passenger impacts discussed above.

- **Unconstrained Forecast (Base)** – The unconstrained demand forecasts are daa forecasts developed in 2026 (issued April 2026).

  Unconstrained demand is based on the daa's Centreline growth case. Demand is expected to reach 279,000 ATMs by 2029 (equivalent to 40 mppa) and around 379,000 ATMs by 2046 (equivalent to 55 mppa).

- **Do Nothing – Existing Permitted Capacity (Schedule 1) and Do Nothing Future State (Schedule 4) – 32 mppa cap**
  - The Existing Permitted Capacity (Schedule 1, 2023 baseline) and Do Nothing Future State (Schedule 4, 2029) are constrained at about 239,800 annual ATMs, equivalent to 32 mppa.
  - The Do Nothing Future State (Schedule 4) incorporates airline fleet modernisation to 2029.

- **Future Operating Scenario (Schedule 3) – 40 mppa**
  - Schedule 3 Future Operating Scenario (40 mppa, 2029) is constrained at about 279,000 annual ATMs by 2029, equivalent to 40 mppa, and incorporates airline fleet modernisation to 2029.

Annual Air Transport Movements (thousands)

Scenarios	Unconstrained Forecast	Do Nothing Future State 32 mppa (Schedules 1 and 4)	Future Operating Scenario 40 mppa (Schedule 3)
2015	198		
2016	215		
2017	223		
2018	233		
2019	239	239	239
2020	93	93	93
2021	133	133	133
2022	212	212	212
2023	242	**240**	242
2024	245	240	245
2025	256	240	256
2026	261	240	261
2027	264	240	264
2028	272	240	272
2029	279	240	**279**
2030	285	240	279
2031	291	240	279
2032	301	240	279
2033	310	240	279
2034	317	240	279
2035	324	240	279
2036	329	240	279
2037	335	240	279
2038	340	240	279
2039	345	240	279
2040	350	240	279
2041	355	240	279
2042	360	240	279
2043	365	240	279
2044	369	240	279
2045	374	240	279
2046	379	240	279

Source: Mott MacDonald analysis, unconstrained demand based on daa Centreline *forecast scenario (2026)*

MOTT MACDONALD



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Appendix I Dublin Airport Annual Capacity Assessment

October 2026 | FINAL

Dublin Airport

Annual Capacity Assessment

Prepared for:

daa

Prepared by:

RICONDO

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EXECUTIVE SUMMARY

Ricondo & Associates, Inc. (Ricondo) was engaged by daa to establish the current capacity of the existing facilities and infrastructure at Dublin Airport (DUB or the Airport). The capacity assessment is a partial update to the previously completed baseline capacity assessment included in the Capacity Assessment Report for the 40 million passengers per annum (MPPA) Infrastructure Application (IA) submitted by daa to Fingal County Council (FCC) in December 2023 (the 2023 Capacity Report).

The purpose of the existing capacity assessment is to define the annual passenger demand volume that Dublin Airport could accommodate with existing facilities and infrastructure and the current profile of demand as of the date of the report. The existing capacity assessment does not include assumptions about facilities and infrastructure improvements or changes in the demand profile that could occur in the future.

CAPACITY ASSESSMENT METHODOLOGY

This assessment follows standard methodologies for determining airport capacity, as defined by the International Air Transport Association (IATA) Airport Development Reference Manual (ADRM), 12th Edition. The IATA ADRM provides guidelines, recommendations and standards for the planning, design and development of airport facilities, including airside and terminal infrastructure. The document was first published in the 1970s and is recognised as one of the aviation industry's most important guides for airport development planning.

The updated capacity assessment report estimates the capacity of Dublin Airport facilities, infrastructure, and equipment relevant to passenger capacity as of the date of this report. Any areas undergoing construction were assumed to be as configured prior to start of construction.

Airport capacity is dynamic and subject to a wide range of factors that can vary over time. These include patterns of demand, such as seasonality or flight schedules, which can change the relationship between peak hour and annual volumes; or capacity factors, such as technology and innovation in airport and airline business practices, which can improve the throughput of existing facilities. The capacity assessment methodology uses historical Dublin Airport operational data through December 31, 2025, and observational studies of individual processing functions to provide the modelling inputs and assumptions used in the IATA ADRM methodologies for capacity assessment. The observational studies were completed prior to the 2023 Capacity Report and were not updated as part of this assessment.

DEFINING CAPACITY

In the context of this report, capacity represents the ability of the on-airport facilities and infrastructure to accommodate a maximum annual volume of passengers flying on commercial airlines. As illustrated in **Exhibit E.1**, the full airport campus contains a broad interconnected system of landside, terminal, pier, apron, and airfield facilities and infrastructure, collectively serving a diverse range of needs from different users of the airport.

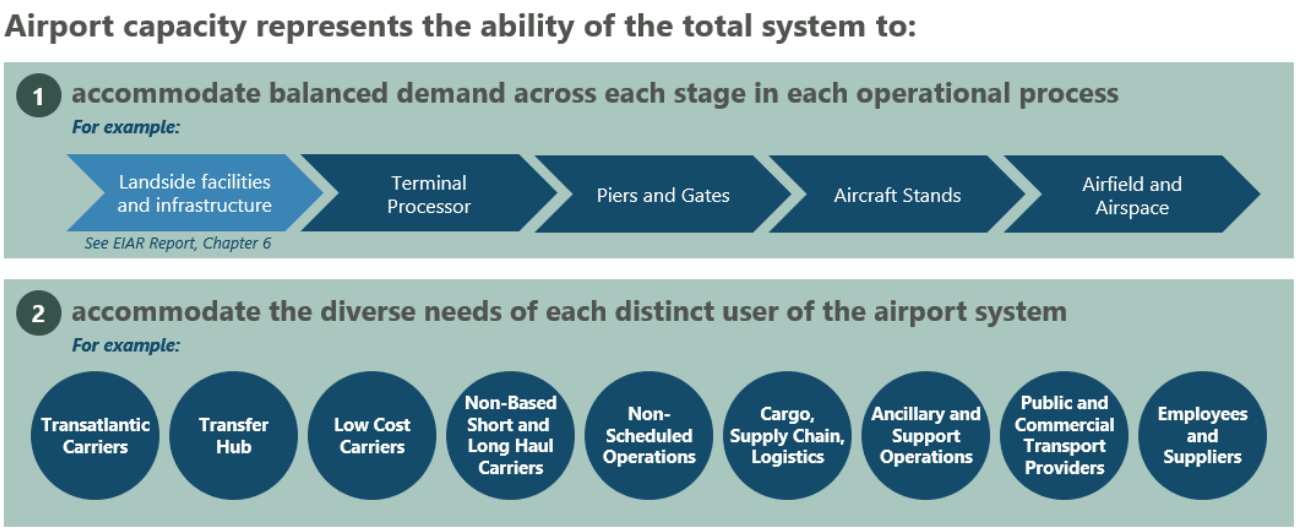
No single element of the system defines the total airport capacity. There are two key considerations in establishing the capacity of the system:

- **Individual sequential processes** – capacity is determined by the lowest performing step in the process. Increasing the capacity of the lowest performing step moves the capacity limitation to the next lowest performing step. Improving a single step in a sequential process to a target capacity level does not bring the whole process to the same level. Improvements are typically required across multiple elements of the system.

- **Multiple parallel processes serving different user needs** – Dublin Airport serves multiple airlines providing a diverse range of services, each with distinctly different facility and infrastructure needs. Projects that increase the capacity of processes serving one type of airline do not increase capacity for a different type of airline with different needs.

Demand from each distinct category of users grows in parallel and Dublin Airport needs to provide for the corresponding capacity needs of each group in parallel as demand grows.

EXHIBIT E.1: AIRPORT CAPACITY – A SYSTEM OF INFRASTRUCTURE SERVING DIVERSE USER NEEDS



SOURCE: Ricondo, **June 2026**.

CATEGORIES OF PASSENGERS

Dublin Airport serves four categories of commercial airline passengers, each of which utilise a different set of airport facilities and infrastructure:

- **Originating passengers**: departing passengers who begin their journey by accessing the airport using public or private ground transportation modes. Originating passengers utilise all major components of the airport system, flowing from landside ground transportation facilities through terminal departures processing to piers, boarding gates and aircraft stands, and onwards to the airfield.
- **Terminating passengers**: passengers arriving at the airport on an aircraft and completing the journey to their final destination by using public or private ground transportation. Terminating passengers utilise all major components of the airport system, flowing from the airfield to aircraft stands, disembarking via arrival gates and proceeding through terminal arrivals processing to the landside ground transportation facilities.
- **Transfer passengers**: arrive and depart the airport onboard two different aircraft. Transfer passengers utilise the airfield, aircraft stands, piers and gates, and transfer facilities. They do not utilise arrivals or departures terminal processing nor the landside ground transportation facilities.
- **Transit passengers**: arrive and depart the airport onboard the same aircraft. Unlike transfer passengers, transit passengers do not disembark the aircraft at Dublin Airport and utilise only the airfield and aircraft stand infrastructure.

This report uses the standard aviation method of counting passengers. Originating and terminating passengers are counted once, as either a departing or arriving passenger, respectively. Transfer passengers are counted

twice, as both an arriving and a departing passenger. Transit passengers are counted once since they remain on the same aircraft while at the airport.

DIFFERENCES BETWEEN THE 2023 AND 2026 CAPACITY ASSESMENTS

The capacity assessment completed in 2023 for the 40 MPPA Infrastructure Application (2023 Capacity Report) included a **Baseline Capacity** assessment and a separate assessment of the **Future Capacity** provided by the proposed 40 MPPA infrastructure. The 2026 Capacity Report assesses **Existing Capacity** only.

The differences between the **2023 Baseline Capacity** assessment and the **2026 Existing Capacity** assessment result from changes in the following three areas:

- **Equipment, Technology and Process Improvements** – changes that have been implemented within the footprint of existing functional areas since the submission of the 40 MPPA IA in 2023.
- **Demand Profile** – changes in the demand profile since the 2023 capacity assessment have increased the utilisation of available existing airport facilities and infrastructure, increasing the volume of demand that can be accommodated in a year. Demand profile factors include:
    - Distribution of demand – higher levels of growth in off-peak or less busy periods has increased the utilisation of existing airport facilities and infrastructure.
    - The average number of seats per aircraft has increased the number of available seats per occupied aircraft stand and boarding gate.
    - The average seat load factor – average percent of aircraft seats occupied – plus the increased average number of seats, has increased the number of passengers accommodated per aircraft stand and boarding gate.
- **Existing vs. Baseline**:
    - The **2023 Capacity Report** established **Baseline Capacity** – the capacity of the existing airport system, including planned future equipment and technology deployment and operational improvements expected to be implemented within the footprint of existing functional areas.
    - The **2026 Capacity Report** establishes **Existing Capacity** – the capacity of the existing airport system, without planned future equipment or technology deployment, or operational process changes, and based on the current actual demand profile The purpose of the 2026 Existing Capacity Report is present airport capacity as of the date of the report.

Table E.1 presents examples of changes that have occurred in each category. A detailed comparison between the 2023 and 2026 Capacity Reports for each functional area is provided in **Appendix B**.

TABLE E.1: EXAMPLES OF DIFFERENCES BETWEEN THE 2023 AND 2026 CAPACITY REPORTS

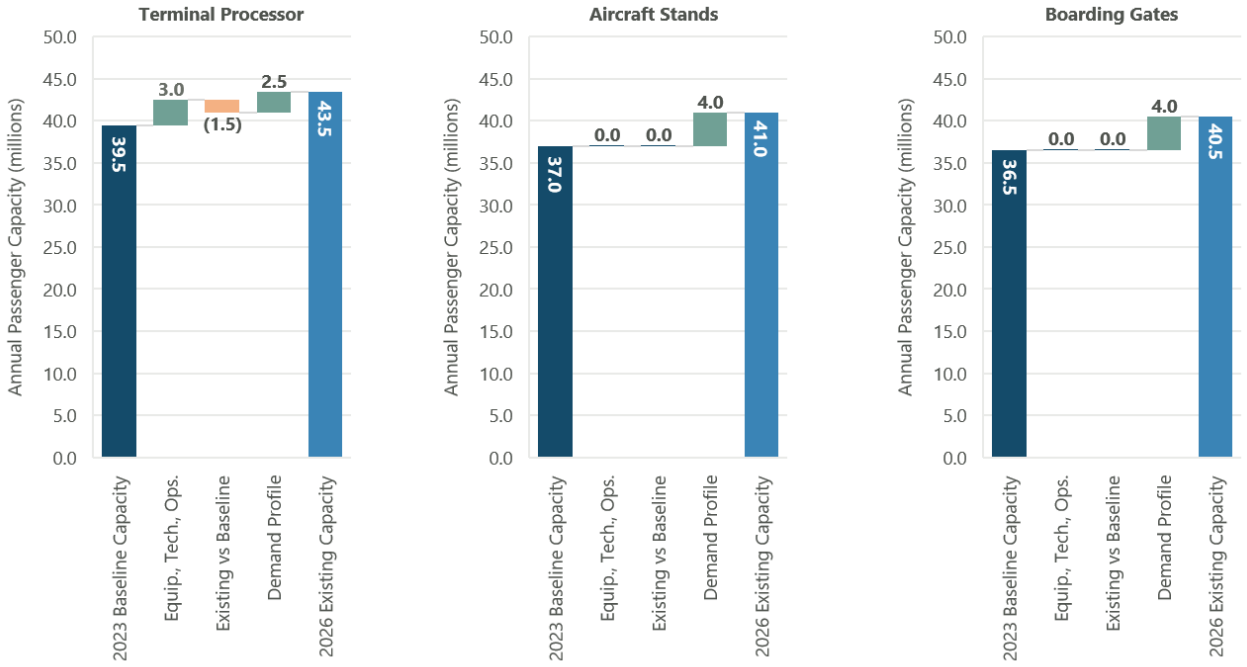
CATEGORY	EXAMPLE
Equipment, Technology and Operational Improvements	daa has deployed C3 cabin baggage screening equipment in Terminals 1 and 2, increasing the capacity of the central search facilities.
Demand Profile	Average number of seats per aircraft and load factor during a busy day at Dublin Airport has increased since 2019, the last year of the dataset analysed in the 2023 Capacity Report. The average aircraft now has five more seats and the average load factor during a busy day has increased from 90% to 94%. In combination, each flight has an average of 11 more passengers per aircraft movement or an additional 9,500 passengers during a busy day on the same number of aircraft stands.
Existing vs. Baseline	The 2023 Capacity Report included the then planned future Apron 5H in the baseline capacity. The 12 aircraft stands of Apron 5H have since been completed and are included in the 2026 Capacity Report. The 2023 Capacity Report included planned future check-in desk additions in Terminal 2. These additions have not yet been completed and are not included in the 2026 Capacity Report.

CAPACITY CONCLUSIONS

The estimated capacity of the existing facilities, infrastructure, operational processes and current demand profile of Dublin Airport in 2026 is **40.5 MPPA.** Existing capacity does not include currently under construction, planned future equipment deployment and operational improvements, or the infrastructure improvements proposed in the 40 MPPA IA.

Exhibit E-2 presents waterfall charts illustrating the change in capacity by category from 2023 Baseline to 2026 Existing for the Terminal Processor, Aircraft Stands, and Aircraft Gates functional areas.

EXHIBIT E.2: CAPACITY BY FUNCTIONAL AREA



Source: Ricondo analysis, June 2026

As illustrated in Exhibit E-2, aircraft boarding gates are the capacity limiting function, followed by aircraft stands, which can accommodate a 41.0 MPPA demand level. The combined processing capacity of Terminals 1 and 2 can accommodate a demand level of 43.0 MPPA.

The Exhibit E-2 waterfall also illustrates that planned improvements assumed in the 2023 baseline capacity for aircraft stands and boarding gates would not result in additional stand and gate capacity. The 2023 report included Apron 5H as a planned improvement. Apron 5H has been completed and is now operational, and there are no further planned improvements assumed in the 2023 report that would increase aircraft stand or boarding gate capacity.

Since aircraft boarding gates are the capacity limiting function, planned improvements assumed in the 2023 baseline capacity that have not yet been implemented would not increase the existing capacity of Dublin Airport beyond 40.5 MPPA.

Introduction

The capacity assessment determines the estimated annual passenger volume that can be accommodated at Dublin Airport. The assessment evaluates multiple factors that can vary over time, which results in an evolving picture of total capacity relative to previous assessments. For example, new technologies, airline product innovations, or new security mandates can increase or decrease the ability of the system to accommodate demand and can change how passengers flow through the airport system. For example, airline baggage policies are an important factor in the distribution of passenger volumes between check-in facilities and security screening.

Methodologies

Methods used to measure capacity can change over time or between interested parties. This assessment follows standard methodologies for determining airport capacity, as defined by the International Air Transport Association (IATA) Airport Development Reference Manual (ADRM), 12th Edition. The IATA ADRM document provides guidelines, recommendations and standards for the planning, design and development of airport facilities, including airside and terminal infrastructure. The document was first published in the 1970s and is recognised as one of the aviation industry's leading guides for planning new airports or expanding existing infrastructure. The 12th Edition includes several material changes to approaches compared to previous editions.

Demand Profile Considerations

The capacity of individual airport systems is generally expressed as the volume of demand that can be accommodated in a peak period, when the greatest amount of demand is placed on the airport system in a defined period of time, typically an hour or a day.

The profile of demand over the day—the level of "peakiness" in the schedule—and the seasonality of demand determine how frequently peak period capacity can be utilised in a year. Market factors, such as purpose of travel, airline business model, time zones at destinations, whether airlines are based at the airport, and the volume of transfer activity, establish seasonality and the daily profile of demand. These elements are combined to create a peak period ratio, which is applied to the peak period capacity to determine annual capacity (the total volume of passengers that can be accommodated in a year). The IATA ADRM provides methodologies for identifying the appropriate peak period and corresponding peak period ratios and these are used in this report.

Historical Dublin Airport operational data through December 31, 2025, has been evaluated to establish the unique demand profile of the airport and how this has changed over time. The capacity assessment detailed in this report is based on the demand profile through 2025, representing the current capacity of the airport in the context of the most recent available actual demand profile data.

Airline and Airport User Characteristics

Airport capacity is delivered by a set of functional areas that accommodate a diverse range of airline and airport users. Individual airlines have distinct operational characteristics, which has important implications for capacity. For example, available narrow-body aircraft stands cannot serve the needs of long-haul widebody aircraft operators. Similarly, airbridge-equipped stands in pier facilities that serve a complex mix of operations cannot provide capacity for the fast-turnaround, walkout boarding process required by some low-cost operators. Consequently, balanced capacity must be provided across the sequential steps of individual airport processes and across the parallel needs of distinct airport users.

Section 2 provides an overview of the methodologies used in the capacity assessment and **Section 3** discusses the demand characteristics that are important considerations in establishing capacity utilisation. **Section 4** provides a summary of the capacity assessment for each major function in the airport system and the resulting conclusions on total existing and future capacity.

Additional detail and technical information on the capacity assessment and applied methodologies are provided in **Appendices A** and **B**.

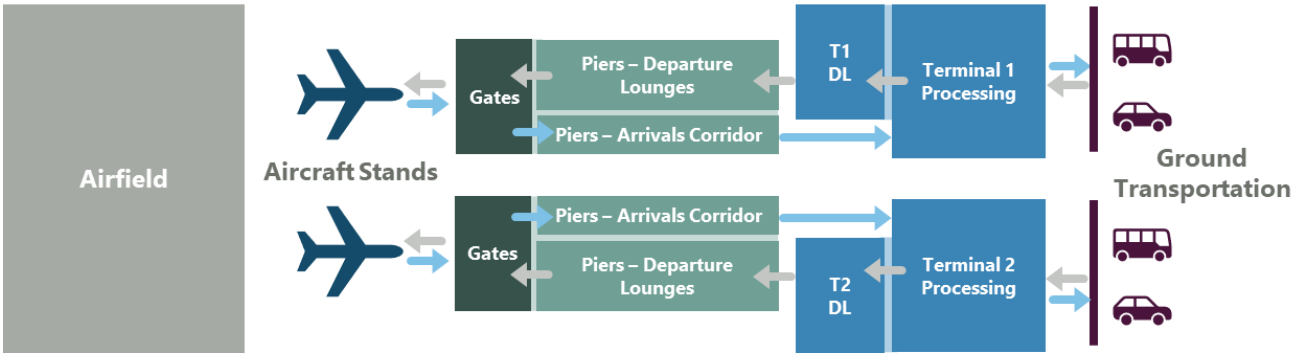
2. CAPACITY METHODOLOGY OVERVIEW

The existing facilities and infrastructure at Dublin Airport provide capacity to accommodate the volume, profile, and characteristics of demand as described in Section 2. Demand is handled at the airport through a series of sequential steps for arriving and departing passengers. The major functional components of the airport are illustrated in **Exhibit 2.1** and include:

- On-airport ground transportation facilities and infrastructure.
- Terminal passenger and baggage processing facilities.
- Terminal and pier departure lounge facilities.
- Gates and aircraft stands.
- Airfield.

Each of the five functional areas are described in this section along with the corresponding operational factors that establish capacity.

EXHIBIT 2.1: MAJOR FUNCTIONAL AREAS



SOURCE: Ricondo, **June 2026**.
NOTE: DL = Departure Lounge

2.1 BALANCED CAPACITY

Airports are an ecosystem of interconnected infrastructure, facilities, and operational processes – supporting a diverse range of passengers, supply chains, operators, businesses, and other users of aviation services. As demand grows, capacity must be balanced across functional components. Balanced capacity represents the ability of the total airport system to:

- Accommodate demand across each stage in each operational process.
- Accommodate the diverse needs of each distinct user of the airport system.

For example, provision of new widebody bridge-served aircraft stands provides capacity for long-haul, full-service aircraft operators. The same stands do not provide equivalent capacity for short-haul, low-cost airlines operating narrowbody aircraft from walkout gates. Demand growth is delivered by all airlines operating at an airport and the distinct capacity needs of each airline operator must be addressed to accommodate demand that is growing in parallel.

2.2 KEY CONSIDERATIONS FOR CAPACITY ASSESSMENT

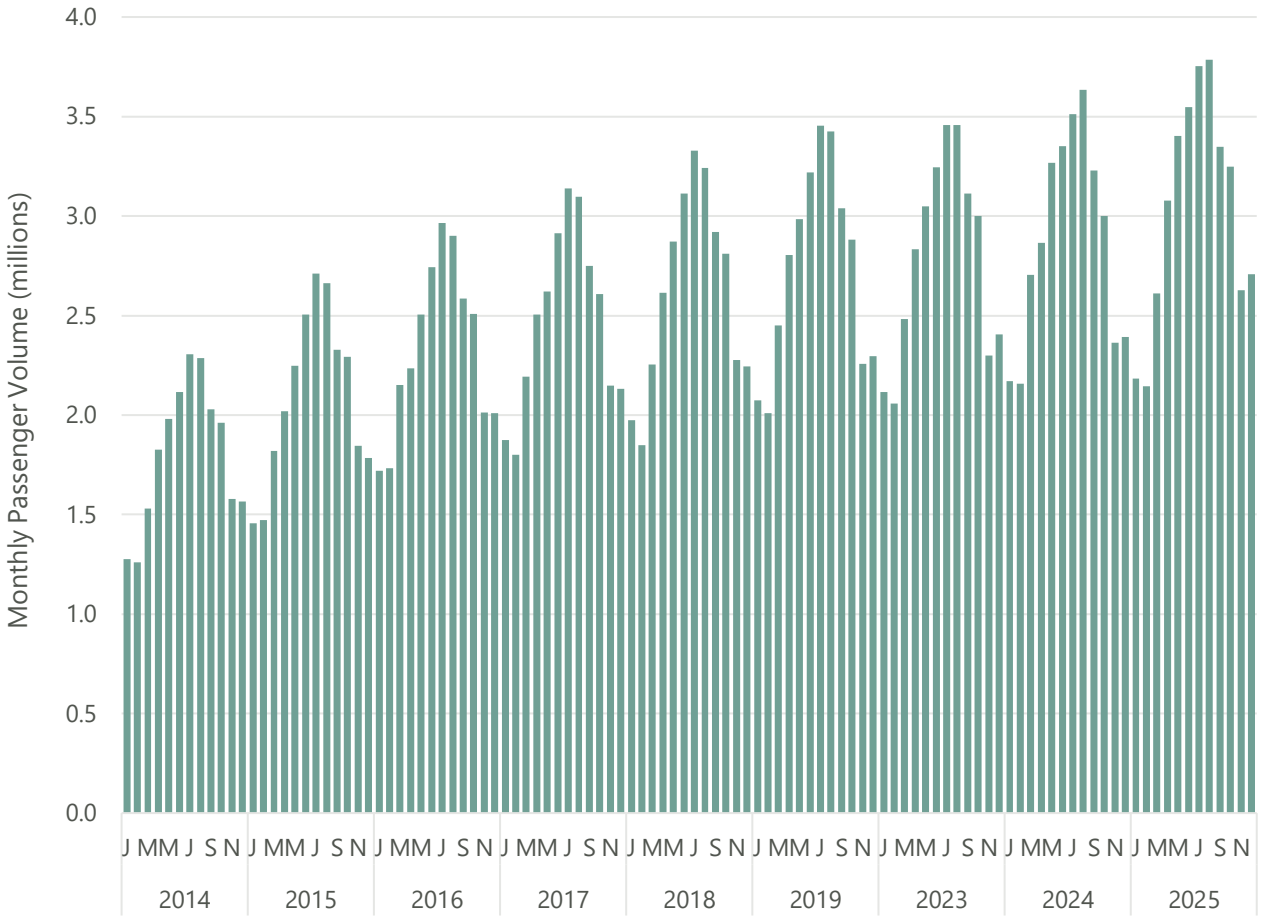
The capacity assessment for commercial passenger operations at Dublin Airport utilises standard methodologies published by the International Air Transport Association (IATA) in the Airport Development Reference Manual (ADRM), Edition 12. Key considerations for evaluating capacity include the following.

2.2.1 DEMAND PROFILE AND PEAKING CHARACTERISTICS

The characteristics of demand and the relationship between annual and peak periods are important considerations in establishing capacity. Demand is dynamic and the relationship between peak periods and total annual demand generally changes with demand growth.

The relationship between peak-hour capacity and annual capacity is determined by the profile of demand at an airport. The profile is established by the seasonality of passenger volumes and the flight schedule on a peak day. **Exhibit 2.2** charts demand seasonality at Dublin Airport over the 5-year period from 2014 to 2025, excluding 2020 to 2022 and **Exhibit 2.3** illustrates a typical Dublin Airport pattern of rolling hour scheduled departing passenger volumes.[1]

EXHIBIT 2.2: DUBLIN AIRPORT SEASONALITY – MONTHLY PASSENGER VOLUMES 2014-2019



SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport operations data.

[1] Data from 2020 to 2022 has been excluded due to demand disruptions and operational mitigations resulting from the global Covid-19 pandemic.

EXHIBIT 2.3: INDICATIVE DEPARTURES FLIGHT SCHEDULE



SOURCE: Ricondo, **June 2026**.

Collectively, seasonality and the flight schedule establish how much of the theoretical 24 hours a day, 365 days a year capacity has practical utility for accommodating demand. The relationship between the annual passenger volume and the peak hour is referred to as the peak hour ratio. This ratio is used to convert peak hour capacity to a corresponding annual capacity level.

The process to choose the peak hour is defined in the IATA ADRM 12th Edition. This explains how the peak hour figure should not represent the absolute peak traffic volume in a year, but rather a volume that is representative of busy periods rarely exceeded throughout the year. The approach outlined in section 2.2.10.1.2 a) of the IATA ADRM 12th Edition is used to select the peak hour. The approach determined that the 30th highest hour of passenger flow experienced in the year is used as the peak hour.

The 30th busiest hour is determined by finding the peak rolling hour scheduled traffic for each of the Terminal 1 and Terminal 2 Arrivals and Departures flows in 5-minute increments for each day in the historical record between 2014-2019 and 2023-2025. The 30th busiest hour is identified for each individual flow.

The peak hour is divided by the total annual passenger volume for the corresponding flow to produce the peak hour ratio.

See **Section 3** for further detail on Dublin Airport demand characteristics.

2.2.2 PASSENGER PRESENTATION PROFILES

The timing of passenger show-up at airport processes before or after a flight and the distribution of demand volumes utilising parallel processing functions affects the capacity of airport processes.

For example, a high proportion of passengers travelling on long-haul flights typically check bags and tend to show up well in advance of their flight to allow enough time for the check-in process. As a result, the flow of passengers to check-in for a long-haul flight tends to be spread over a long period. In contrast, passengers travelling short haul tend to check fewer bags, and arrive at the airport closer to the time of departure for their

flight, creating a shorter, peakier demand at check-in and at security due to a higher percentage of passengers not checking bags.

Individual functional areas provide capacity to process passengers as they arrive at the function. The relationship between peak passenger presentation volumes and the peak volume of passengers onboard aircraft at scheduled flight arrival or departure time is important for correctly expressing capacity at a peak period or annual level.

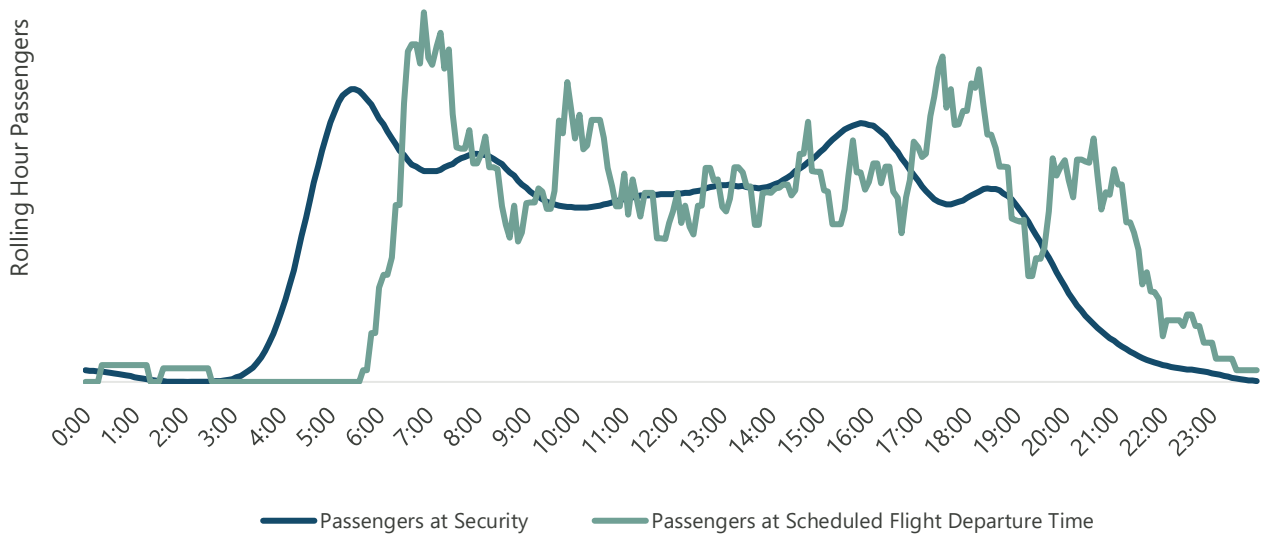
Presentation profiles are also influenced by operational characteristics such as airline checked baggage policies and technology enablement along the passenger journey, impacting the timing and distribution of passenger flows through processing facilities.

Exhibit 2.4 provides an example presentation profile for passengers at security over the course of a typical day. The chart compares rolling hour passenger volumes presenting at security screening relative to rolling hour passenger volumes at scheduled flight departure times. This illustrates that peak demand at security screening is lower than peak demand at scheduled flight departure times.

Exhibit 2.5 provides an example of the diverse range of flow distributions through a typical departures process, driven by different airline business processes and operating characteristics. In the example, 90% of passengers flying with the long-haul, full-service operator proceed to check-in and 30% utilise the agent check-in process. In contrast, 27% of passengers flying with the short-haul, low-cost operator proceed to check-in, with 5% utilising the agent check-in service.

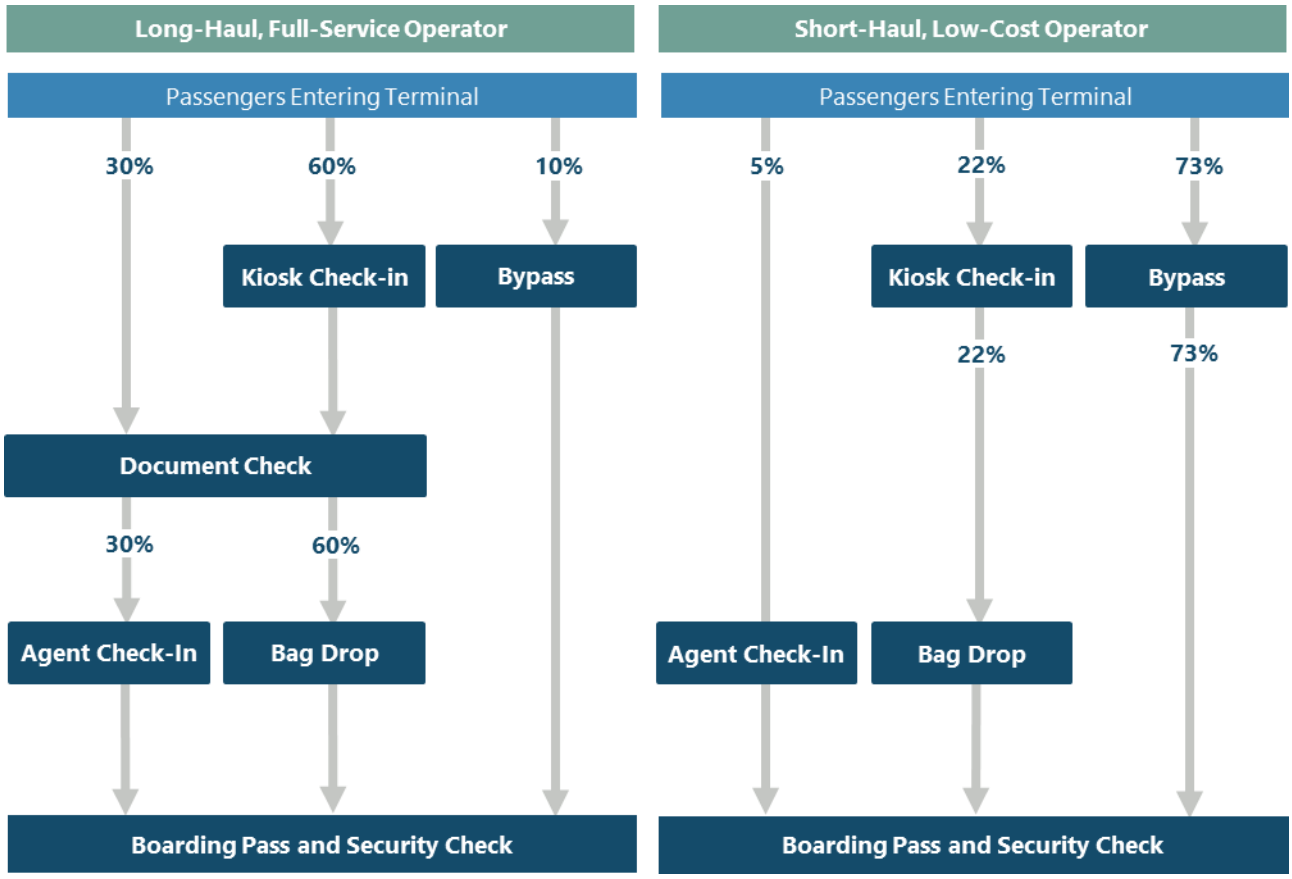
Presentation profiles, representing the volume of passengers presenting at individual processing functions, are established by a combination of the show-up profiles and the flow distribution percentages.

EXHIBIT 2.4: INDICATIVE DEPARTING PASSENGER SHOW-UP PROFILE



SOURCE: Ricondo, **June 2026**.

EXHIBIT 2.5: INDICATIVE DEPARTURE PROCESSING DEMAND DISTRIBUTION



SOURCE: Ricondo, **June 2026**.

Section 3, Capacity Assessment Summary, provides presentation profiles for each processing function, expressing the peak presentation volume at each processor as a percentage of the peak passenger volume at scheduled flight time. Each of the four processing flows (Terminal 1 Departures, Terminal 1 Arrivals, Terminal 2 Departures, and Terminal 2 Arrivals) include an exhibit illustrating the processing facilities and flows. The presentation volume for each flow is also presented in the exhibits as a percentage of peak scheduled flight time volume.

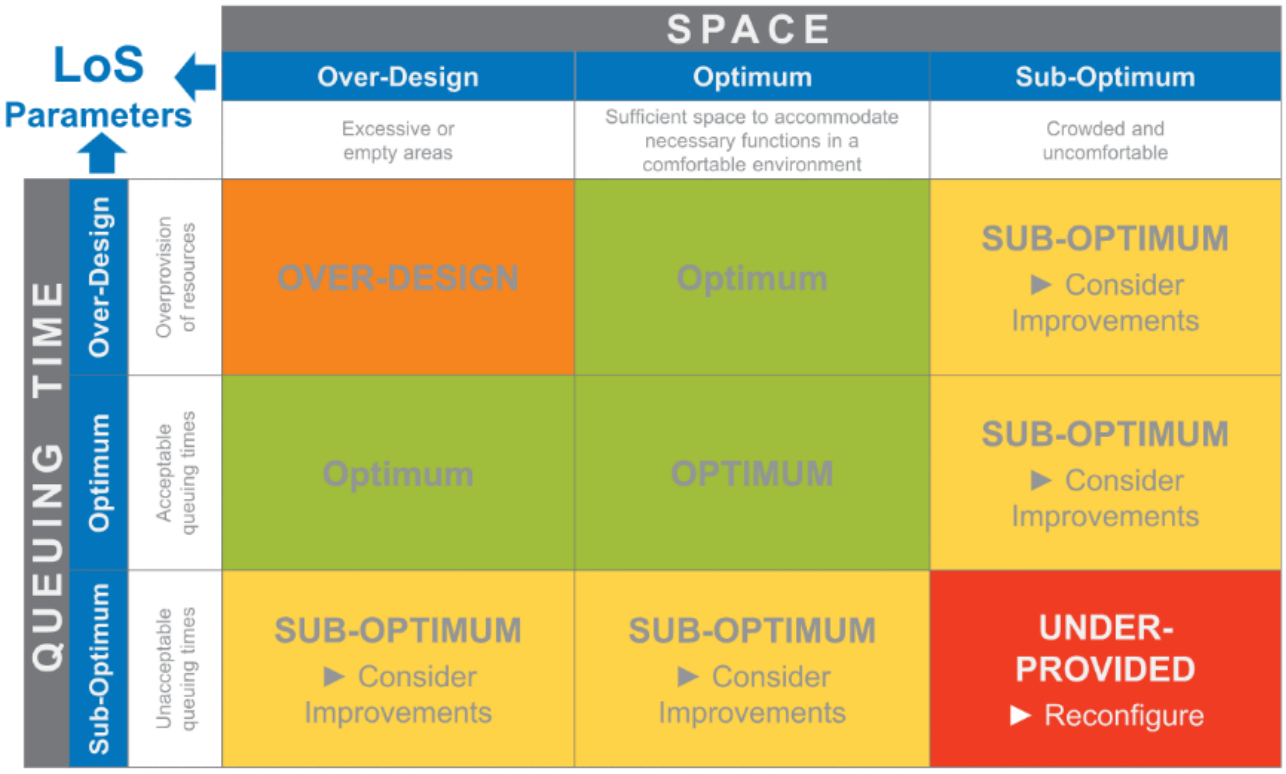
Peak hour capacity is calculated for each processing function, representing the volume of passengers that can be physically handled at the facility in a peak period. The presentation profile percentages are applied to the peak processor capacity to express the peak hour capacity in terms of scheduled flight time.

As an example, a processing facility with a capacity of 1,000 passengers and a presentation profile volume of 50% of the scheduled flight time volume, would have an equivalent capacity at scheduled flight time of 2,000 passengers.

2.2.3 LEVEL-OF-SERVICE (LOS) STANDARDS

The IATA ADRM provides guidance for setting Level-of-Service (LOS) standards, considering waiting times and space occupancy, as illustrated in **Exhibit 2.6**. daa utilises optimum LOS targets in assessing operational performance and planning for capacity requirements. Optimum levels have been utilised to establish the capacity levels summarised in Section 3, Capacity Assessment Summary.

EXHIBIT 2.6: IATA ADRM LEVEL-OF-SERVICE MATRIX



SOURCE: IATA ADRM Edition 12

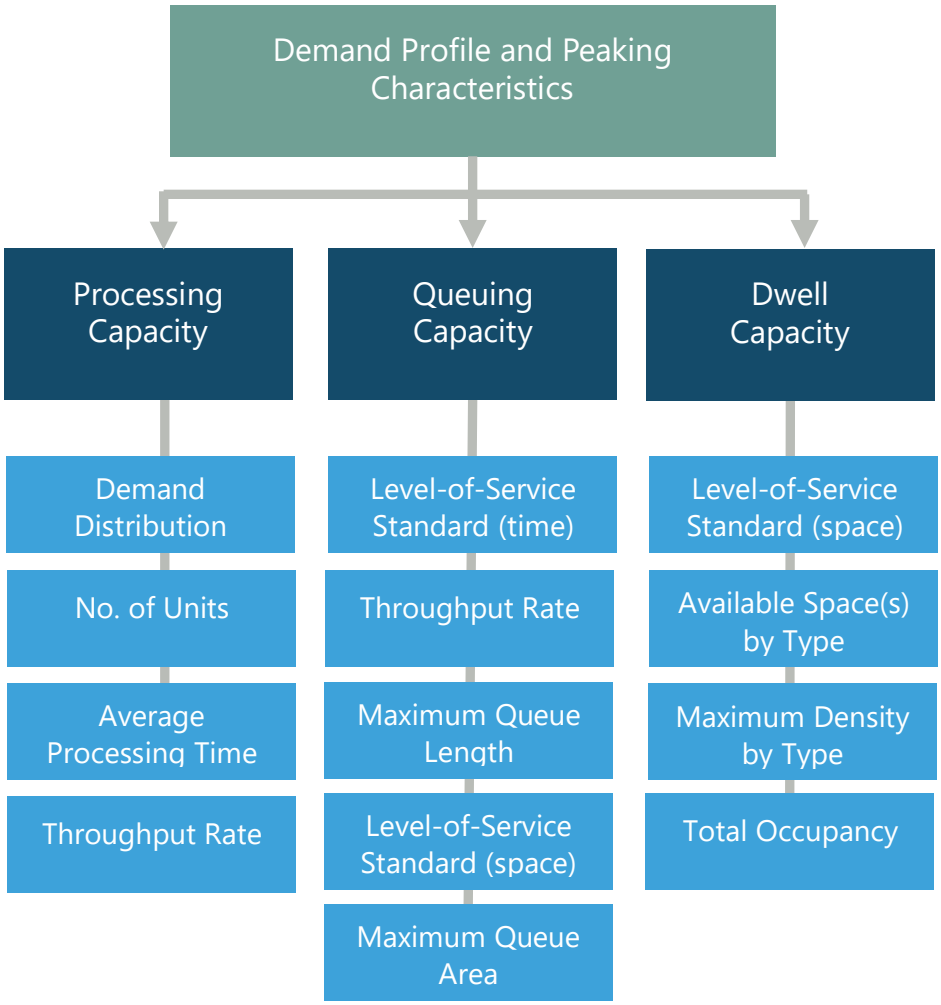
2.2.4 CAPACITY APPROACH BY FUNCTIONAL AREA TYPE

The three primary categories of functional area within airport systems include:

- **Processing**: active processes such as check-in, security, or immigration.
- **Queuing**: space to accommodate passengers waiting for processing functions.
- **Dwell**: space available to accommodate passengers, aircraft, or vehicles. For example, passengers typically dwell in the departures lounge and gate lounge areas prior to boarding; aircraft are accommodated on parking stands during the aircraft turnaround from an arriving operation to a departing operation.

Exhibit 2.7 illustrates the key considerations for assessing capacity in each of the three functional types. These considerations, and the IATA ADRM methodologies applied, are summarised in Section 3, Capacity Assessment Summary and discussed in more detail in the technical analysis detailed in **Appendices B** and **C.** for each functional component of the existing facilities and infrastructure at Dublin Airport.

EXHIBIT 2.7: CAPACITY ASSESSMENT CONSIDERATIONS BY FUNCTIONAL TYPE



SOURCE: Ricondo, **June 2026**.

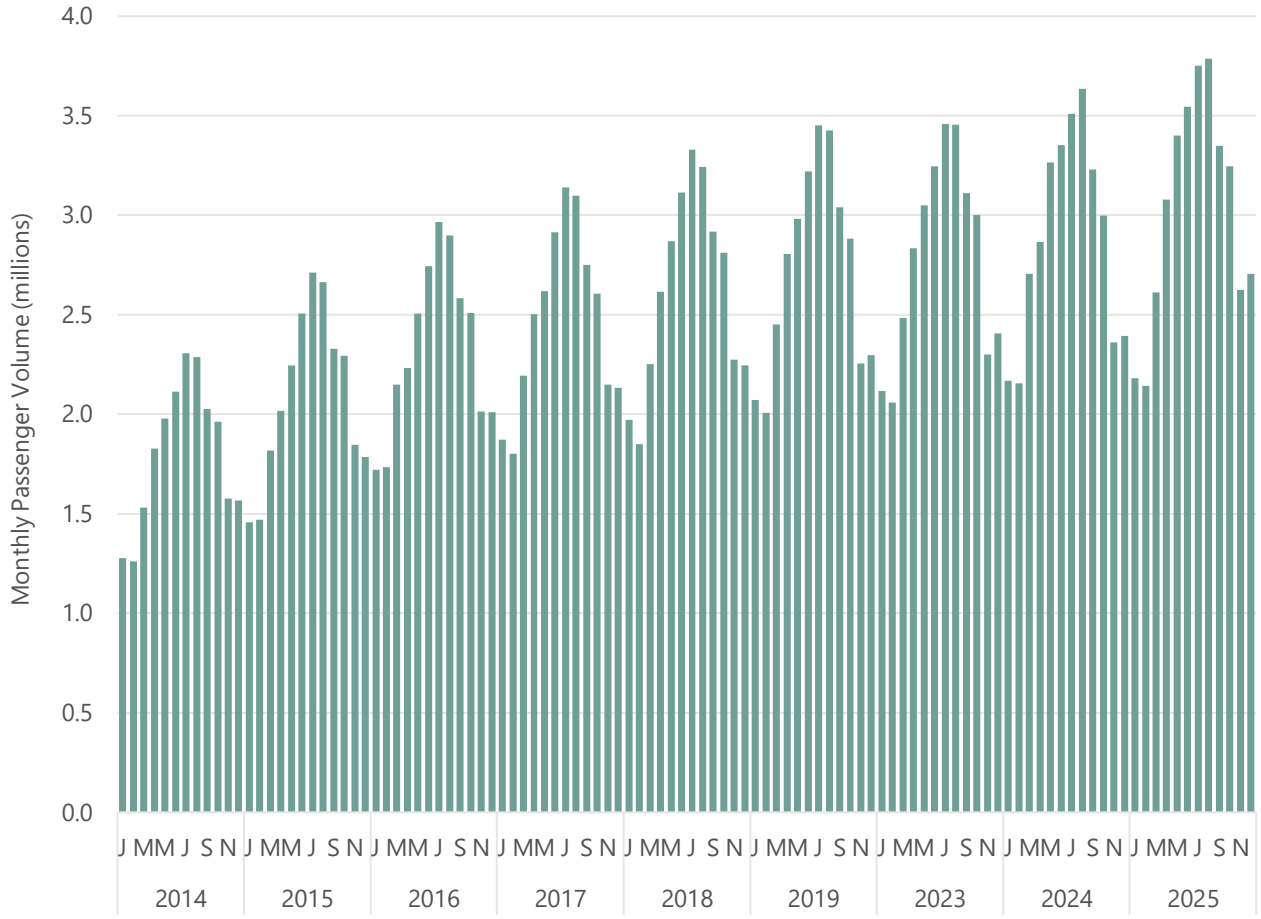
3. DEMAND PROFILE

The relationship between peak-hour capacity and annual capacity is determined by the profile of demand at an airport. The profile is established by the seasonality of passenger volumes and the schedule on a peak day. **Exhibit 3.1** illustrates demand seasonality at Dublin Airport over the 9-year period from 2011 to 2019. **Exhibit 3.2** illustrates a typical Dublin Airport pattern of rolling hour scheduled departing passenger volumes.

Airport capacity is determined by establishing the volume of demand that can be accommodated during a peak period, generally the peak hour in a busy day for most functions. When peak period demand reaches peak period capacity, the ability of the airport to accommodate demand becomes constrained – further peak period growth cannot be accommodated. Growth outside the peak periods can be accommodated, however, similar to roadway traffic, a high proportion of demand occurs during peak seasons, busy days, and peak hours – the equivalent of rush hour during a weekday on a roadway. When no further demand can be accommodated in peak periods or the rush hour, an airport or roadway is effectively operating at capacity.

The demand profile represents the pattern of unconstrained demand across a year, peak months, busy days, and peak hours, establishing how much of the theoretical 24 hours a day, 365 days a year that capacity will be utilised by airlines and passengers, and how much will not. The demand profile is used to represent airport capacity in terms of total annual passenger volume – taking into account capacity availability when there is demand for air service and not including periods when demand does not exist.

EXHIBIT 3.1: DUBLIN AIRPORT DEMAND SEASONALITY – MONTHLY PASSENGERS 2014-2019



SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport operations data.

EXHIBIT 3.2: INDICATIVE DEPARTURES FLIGHT SCHEDULE



SOURCE: Ricondo, **June 2026**.

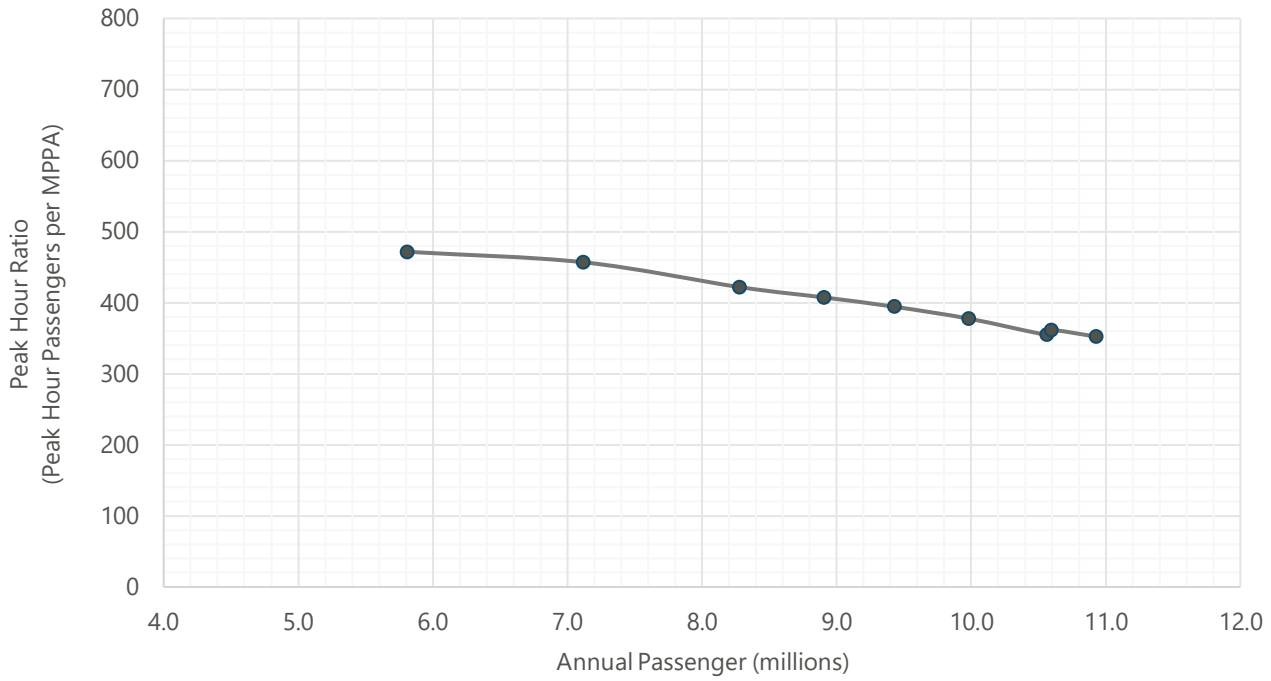
The relationship between the annual passenger volume and the peak hour is referred to in this report as the peak hour ratio. The ratios are used to convert peak hour capacity to a corresponding annual demand level that can be accommodated by the airport.

The process to identify peak hours that represent busy periods rarely exceeded throughout the year is defined in the IATA ADRM 12th Edition. The approach outlined in Section 2.2.10.1.2 a) of the IATA ADRM was applied to select representative peak hours for each functional component evaluated. The methodology selects the 30th busiest hour experienced in a year as the peak hour. This is determined based on finding the peak rolling hour passenger volumes for the Terminal 1 and Terminal 2 Arrivals and Departures flows in 5-minute increments for each day in the historical operations records between 2014 to 2025, excluding the pandemic years of 2020 to 2022, and ranking those for each year and selecting the 30th busiest hour for each year. The corresponding peak hour ratio for each year is determined by dividing the peak hour volume by the annual volume.

Peak period demand ratios represent the peak period demand per one million passengers per annum (MPPA) for each demand segment. For example, if a peak period demand ratio for a particular passenger processing function is 500 peak hour passengers per one million annual passengers and the corresponding peak hour capacity for the function is 1,000 passengers, the annual capacity for the function would be two million passengers (1000 ÷ 500 = 2 MPPA)

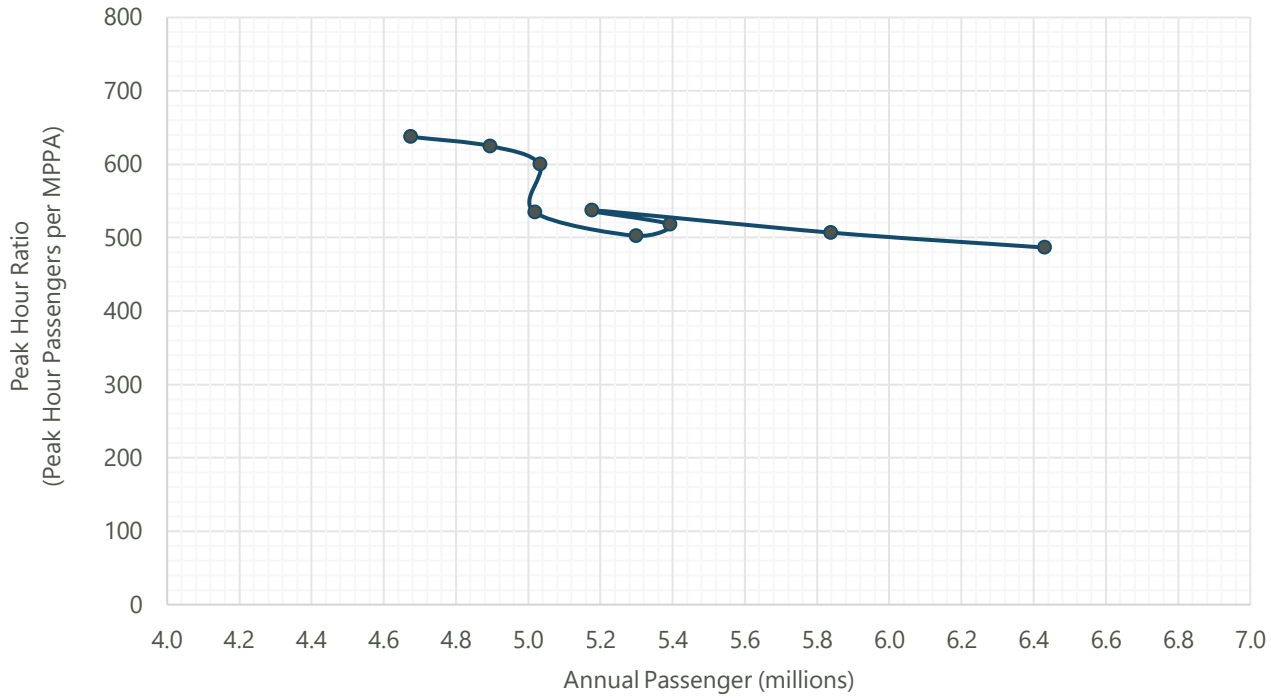
Exhibits 3.3 to 3.6 detail the resulting peak hour passengers per MPPA ratio for each of the nine years. **Exhibit 3.7** presents the peak day ratio, the 30th busy day for airport-wide departing passengers divided by the total annual airport-wide departing passengers per year. **Exhibit 3.8** presents the average aircraft seat size per movement and the average passenger load per movement in each year. **Exhibit 3.9** presents the busy day average load factor per year.

EXHIBIT 3.3: TERMINAL 1 ORIGINATING – HISTORICAL PEAK HOUR TO ANNUAL PASSENGER RATIO



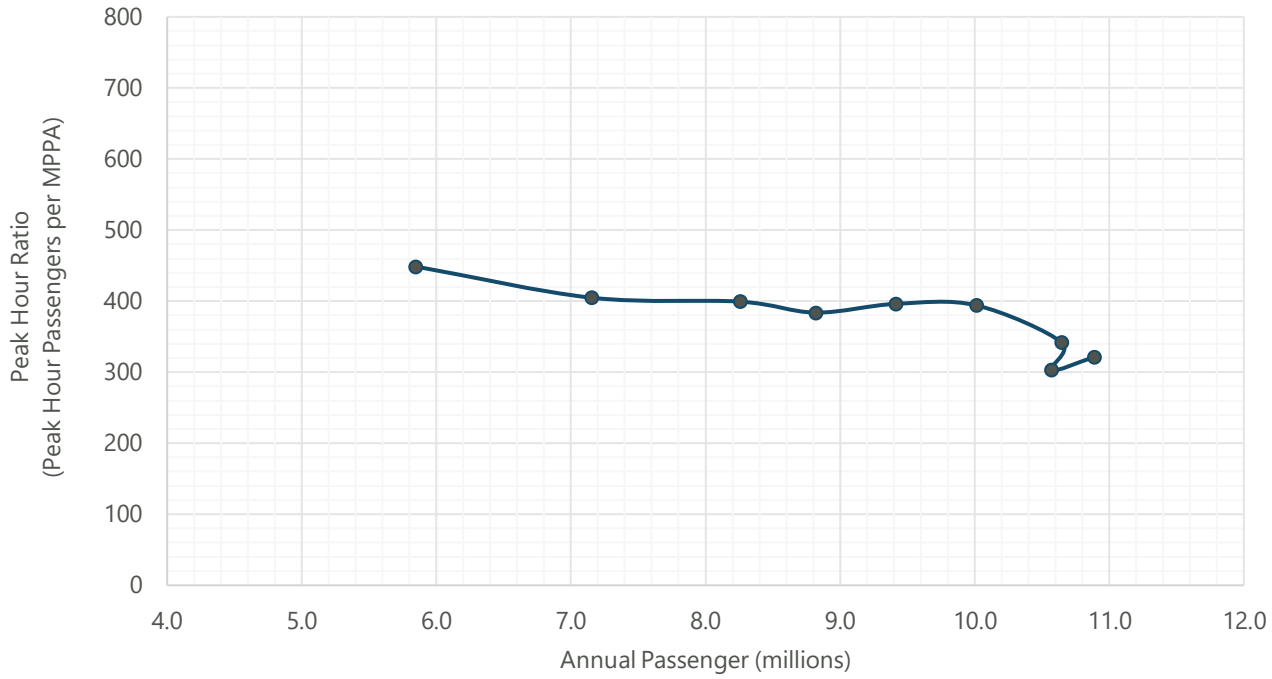
SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport operations data. Exhibit A-3: Terminal 2 Originating – Historical Peak Hour to Annual Passenger Ratio

EXHIBIT 3.4: TERMINAL 2 ORIGINATING – HISTORICAL PEAK HOUR TO ANNUAL PASSENGER RATIO



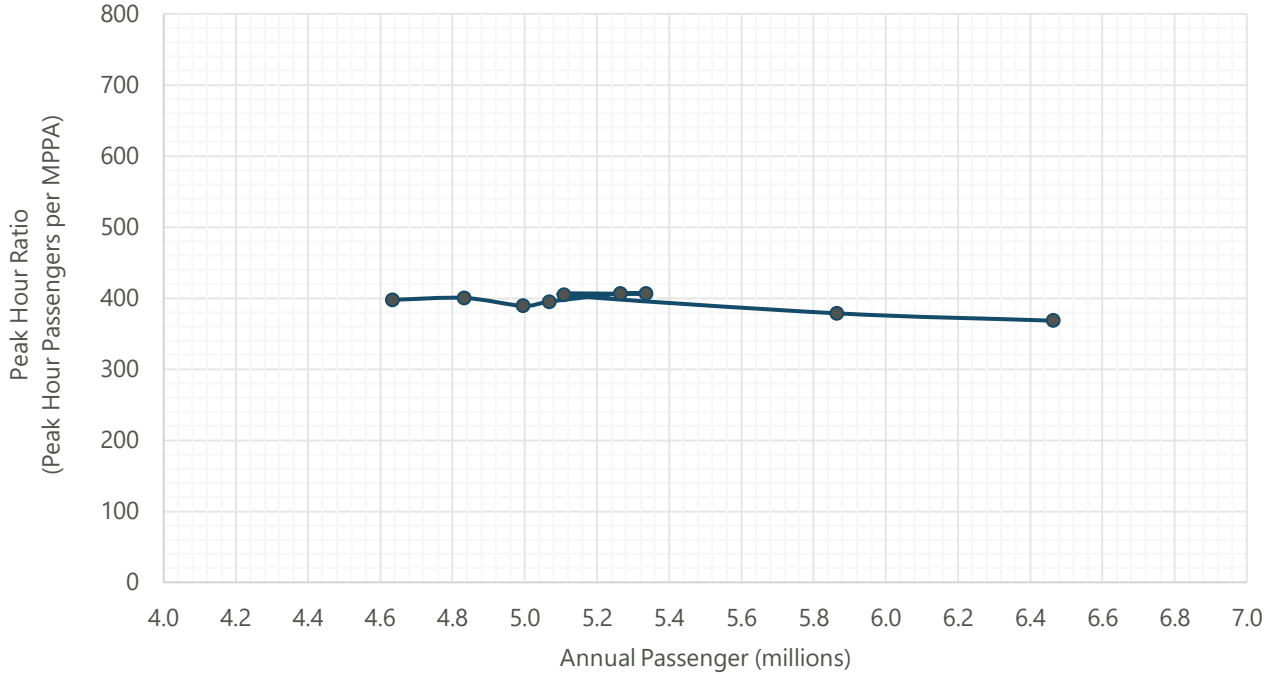
SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport operations data.

EXHIBIT 3.5: TERMINAL 1 TERMINATING – HISTORICAL PEAK HOUR TO ANNUAL PASSENGER RATIO



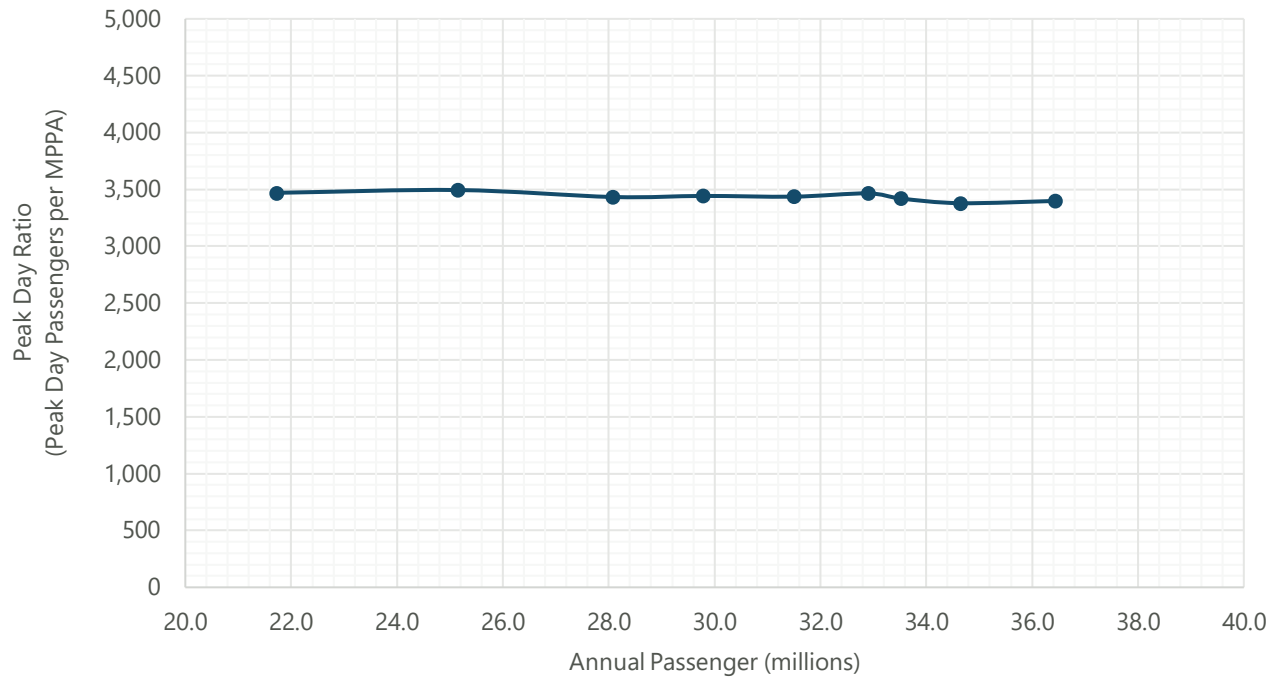
SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport historical operations data.

EXHIBIT 3.6: TERMINAL 2 TERMINATING – HISTORICAL PEAK HOUR TO ANNUAL PASSENGER RATIO



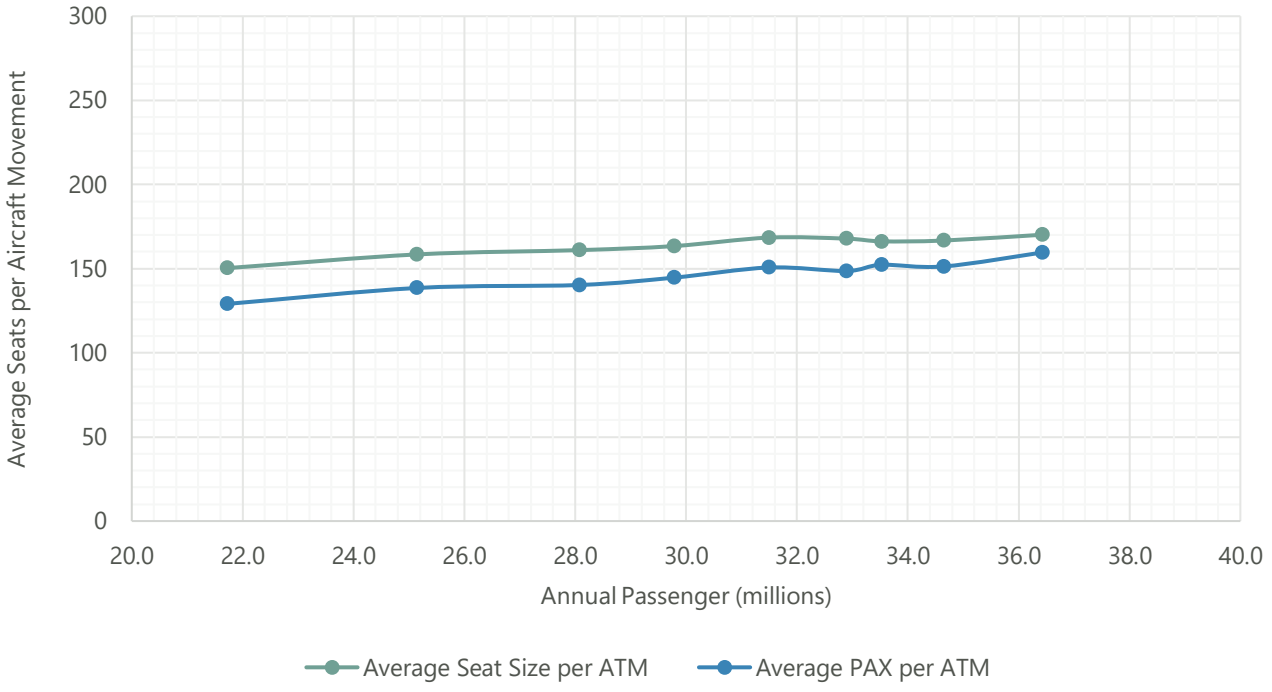
SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport historical operations data.

EXHIBIT 3.7: AIRPORT-WIDE PEAK DAY – HISTORICAL PEAK DAY TO ANNUAL PASSENGER RATIO



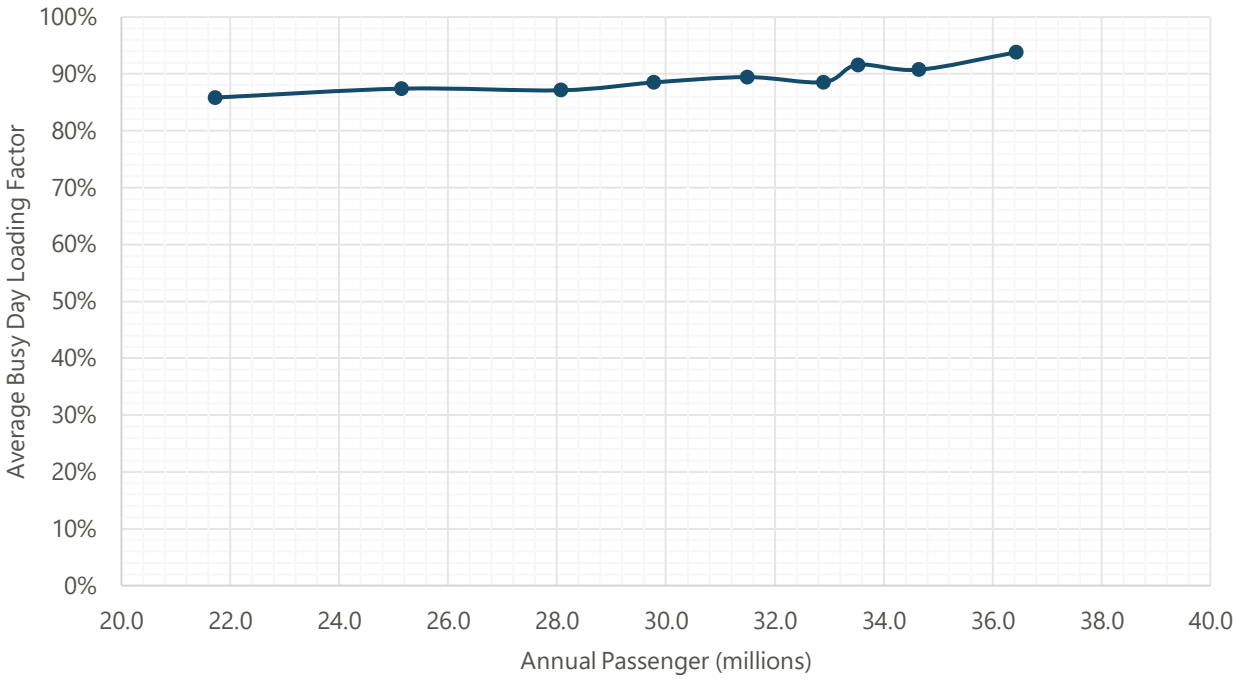
SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport historical operations data.

EXHIBIT 3.8: AVERAGE AIRCRAFT SEAT SIZE AND AVERAGE PASSENGERS PER MOVEMENT



SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport historical operations data.

EXHIBIT 3.9: BUSY DAY AVERAGE LOAD FACTOR



SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport historical operations data.

TABLE 3.1: SELECTED PEAK-HOUR RATIOS AND METRICS

TERMINAL AND FLOW	CURRENT PEAK-HOUR RATIO
Terminal 1 Originating Departures	355
Terminal 1 Terminating Arrivals	320
Terminal 2 Originating Departures	510
Terminal 2 Terminating Arrivals	375
Terminal 2 Transfers Departure	955
Peak Day Airport-Wide Departing Passengers	3,400
Average Seats per Aircraft Movement	170
Average Passengers per Aircraft Movement	160

SOURCE: Ricondo, **June 2026**, analysis of Dublin Airport historical operations data.

4. CAPACITY ASSESSMENT SUMMARY

The capacity assessment was completed for existing Dublin Airport facilities, infrastructure, equipment, and operational parameters and the results are summarised for the major functional components in the following sections. Section 3 provides detailed information on the profile and characteristics of demand applied in the capacity analyses and **Appendices A** and **B** provide additional information on the methodologies and technical analyses completed in support of the capacity assessment.

4.1 AIRPORT LANDSIDE

On-airport landside facilities and infrastructure providing capacity to accommodate public, private and commercial ground transportation services has been assessed in the Environmental Impact Assessment Report (EIAR) Chapter 6 and associated appendices.

The EIAR evaluates the surface access system at a future demand level of 40 MPPA and the current findings indicate that the infrastructure will perform adequately. Following discussions with Aecom, the EIAR Chapter 6 author, this report assumes there is sufficient flexibility across the ground transportation services offered at the airport for the system to adjust to accommodate a demand level of 40.5 MPPA.

4.2 PASSENGER TERMINALS

Passenger terminal capacity is presented by terminal, flow direction, and major functional area in the following sections. The capacity of each function is presented in the following two forms:

- **At-function capacity** – the capacity of each function to accommodate passenger volume presenting during a peak period.
- **At-flight time capacity** – the equivalent capacity at scheduled flight time that can be accommodated by the function.

The at-function and at-flight time capacities are connected through the **presentation profile percentage**, which represents the proportional relationship between the volume of passengers presenting at the function, based on pre-departure show-up time and where applicable, the parallel distribution of passengers between different processes.

A flow chart is provided for each section demonstrating the process flow, presentation volume percentages, and the results of the capacity assessment.

4.2.1 TERMINAL 1 DEPARTURES

The Terminal 1 originating departures process consists of check-in, boarding pass verification, and security screening functions.

Peak hour capacity of each processing function is determined by an IATA ADRM methodology, which considers configuration, equipment, and operational characteristics. The corresponding peak hour capacity at scheduled flight departure time is determined by the proportional relationship represented by the passenger presentation profile. These factors are discussed in further detail in **Section 3**.

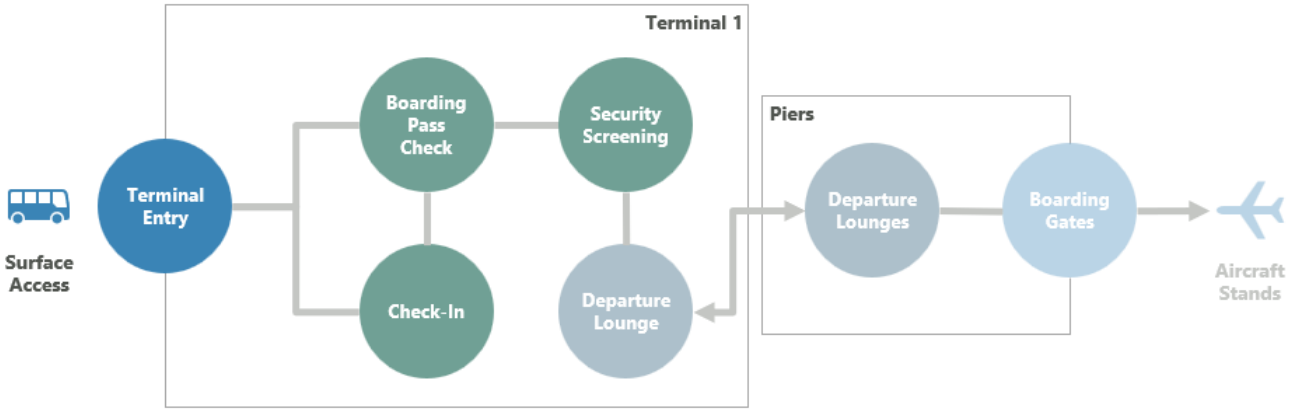
Exhibit 4.1 illustrates the Terminal 1 departures flow and the hourly passenger capacity of each individual processing function. The security screening function has the lowest capacity, limiting the **peak hour Terminal 1 originating departures volume at scheduled flight time to a maximum of 4,715 passengers**. The peak

hour passenger volume is converted to an annual passenger volume using the peak hour ratio. The ratio and corresponding annual capacity are detailed in **Section 4.5**.

See **Appendix A.1.1** for additional information on Terminal 1 Departures capacity.

EXHIBIT 4.1: TERMINAL 1 ORIGINATING DEPARTURES PROCESSING CAPACITY

	Boarding Pass	Security
Hourly Passenger Capacity at Function	9,960	3,820
Presentation Profile	81%	81%
Hourly Passenger Capacity at Flight Time	**12,295**	**4,715**



	Check-In
Hourly Passenger Capacity at Function	3,570
Presentation Profile	42%
Hourly Passenger Capacity at Flight Time	**8,500**

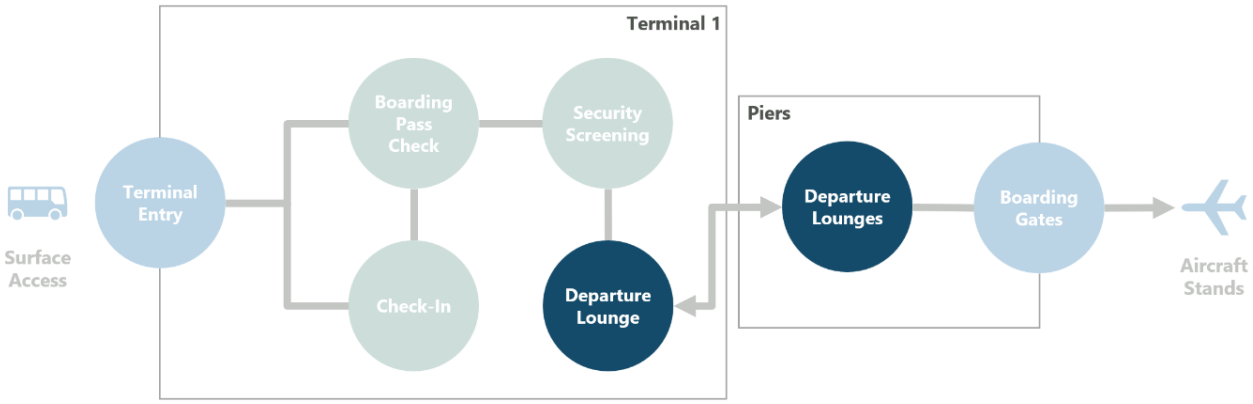
SOURCE: Ricondo, **June 2026**.

Departing passengers cleared through security screening proceed to departure lounge facilities located in Terminal 1 and Piers 1, 2 and 3. Departure lounges include a range of accommodations, services, and amenities, including seating areas, duty free and travel retail shops, and food and beverage locations. Passengers can move freely between the terminal and pier departure lounge areas, and the combined space accommodates the total volume of post-security passengers dwelling prior to aircraft boarding.

Peak hour departure lounge capacity is determined by maximum occupancy densities for each category of space within the terminal and pier departure lounge areas. For example, duty free shops accommodate fewer passengers per square metre than gate lounge seating areas. The corresponding peak hour capacity at scheduled flight departure time is determined by the proportional relationship represented by the passenger presentation profile. These factors are discussed in further detail in **Section 3**.

Exhibit 4.2 illustrates the departures lounge functions in the context of the overall departures flow and provides the combined passenger dwell capacity for Terminal 1 and Piers 1, 2 and 3. The **departures lounge facilities can accommodate a peak hour departures volume at scheduled flight time of a maximum of 6,320 passengers**. The peak hour passenger volume is converted to an annual passenger volume using the peak hour ratio. The ratio and corresponding annual capacity are detailed in **Section 4.5**.

EXHIBIT 4.2: TERMINAL 1 DEPARTURES – TERMINAL AND PIER DEPARTURE LOUNGE CAPACITY



	Departure Lounges
Hourly Passenger Capacity at Function	6,255
Presentation Profile	99%
Hourly Passenger Capacity at Flight Time	**6,320**

SOURCE: Ricondo, **June 2026**.

4.2.2 TERMINAL 1 BAGGAGE HANDLING SYSTEM

The Terminal 1 and Terminal 2 outbound baggage handling systems were upgraded several years ago to comply with ECAC EDS Standard 3 screening requirements. The improvements included load sharing between devices, additional resilience through new baggage links between systems, and the ability to transfer bags between Terminal 1 and Terminal 2. The upgrades allow the outbound baggage systems to provide sufficient handling capacity to accommodate the induction capacity of the check-in systems under current operating procedures and assumptions. The capacity analysis assumes the outbound system matches the Terminal 1 check-in capacity summarised in **Section 4.2.1**.

4.2.3 TERMINAL 1 ARRIVALS

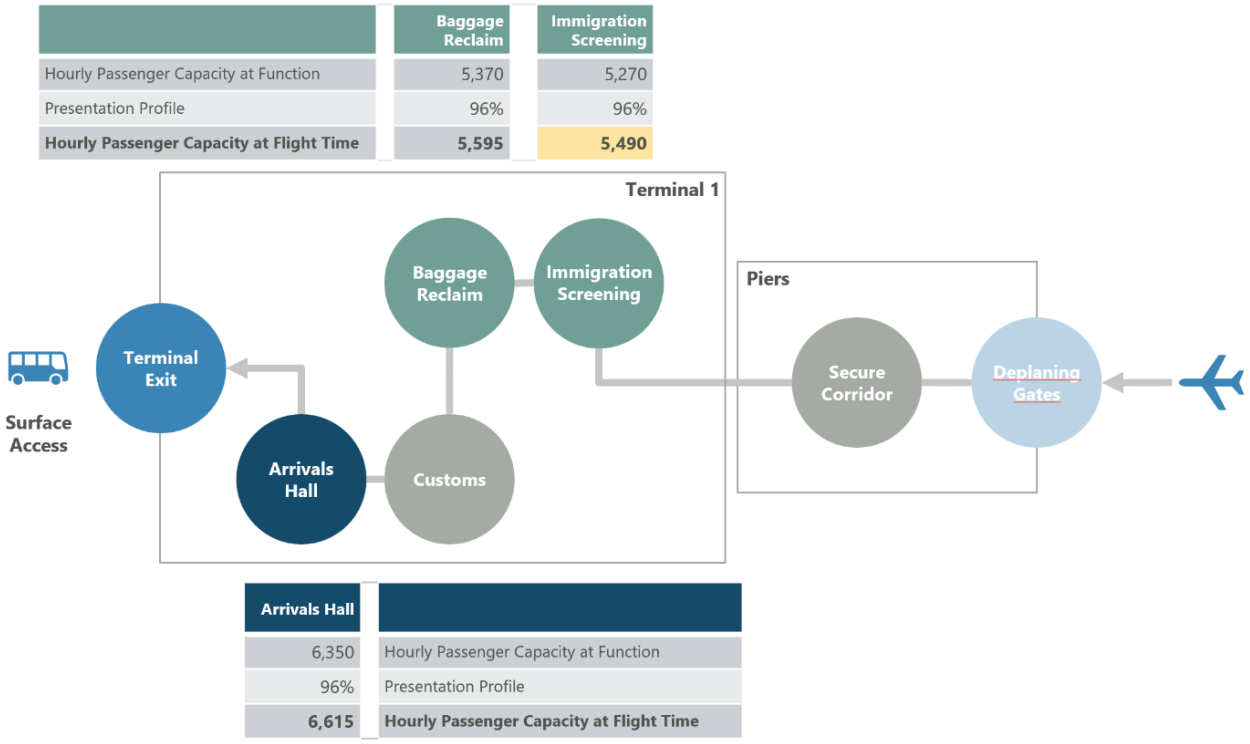
The Terminal 1 terminating arrivals process consists of immigration screening, baggage reclaim, customs screening, and the arrivals hall.

Peak hour capacity of each function is determined by an IATA ADRM methodology, which considers configuration, equipment, and operational characteristics. The corresponding peak hour capacity at scheduled flight departure time is determined by the proportional relationship represented by the passenger presentation profile. These factors are discussed in further detail in **Section 3**.

Exhibit 4.3 illustrates the Terminal 1 arrivals flow and the capacity of each individual function. Immigration screening has the lowest capacity, limiting the **peak hour Terminal 1 terminating arrivals volume at scheduled flight time to a maximum of 5,490 passengers**. The peak hour passenger volume is converted to an annual passenger volume using the peak hour ratio. The ratio and corresponding annual capacity are detailed in **Section 4.5**.

See **Appendix A.1.2** for additional information on Terminal 1 Arrivals capacity.

EXHIBIT 4.3: TERMINAL 1 TERMINATING ARRIVALS CAPACITY



SOURCE: Ricondo, **June 2026**.

4.2.4 TERMINAL 2 DEPARTURES

The Terminal 2 originating departures process consists of check-in, boarding pass verification, and security screening functions.

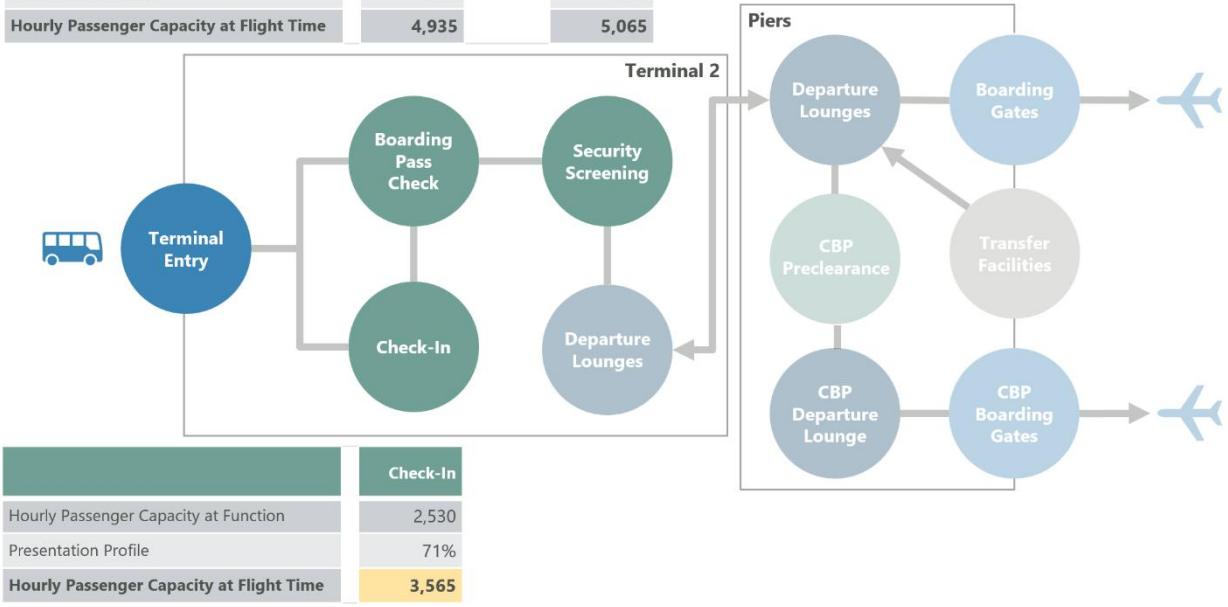
Peak hour capacity of each processing function is determined by an IATA ADRM methodology, which considers configuration, equipment, and operational characteristics. The corresponding peak hour capacity at scheduled flight departure time is determined by the proportional relationship represented by the passenger presentation profile. These factors are discussed in further detail in **Section 3**.

Exhibit 4.4 illustrates the Terminal 2 departures flow and the hourly passenger capacity of each individual processing function. The check-in function has the lowest capacity, limiting the **peak hour Terminal 2 originating departures volume at scheduled flight time to a maximum of 3,565 passengers**. The peak hour passenger volume is converted to an annual passenger volume using the peak hour ratio. The ratio and corresponding annual capacity are detailed in **Section 4.5**.

See **Appendix A.1.3** for additional information on Terminal 2 Departures capacity.

EXHIBIT 4.4: TERMINAL 2 ORIGINATING DEPARTURES PROCESSING CAPACITY

	Boarding Pass	Security
Hourly Passenger Capacity at Function	3,900	4,000
Presentation Profile	79%	79%
Hourly Passenger Capacity at Flight Time	**4,935**	**5,065**



	Check-In
Hourly Passenger Capacity at Function	2,530
Presentation Profile	71%
Hourly Passenger Capacity at Flight Time	**3,565**

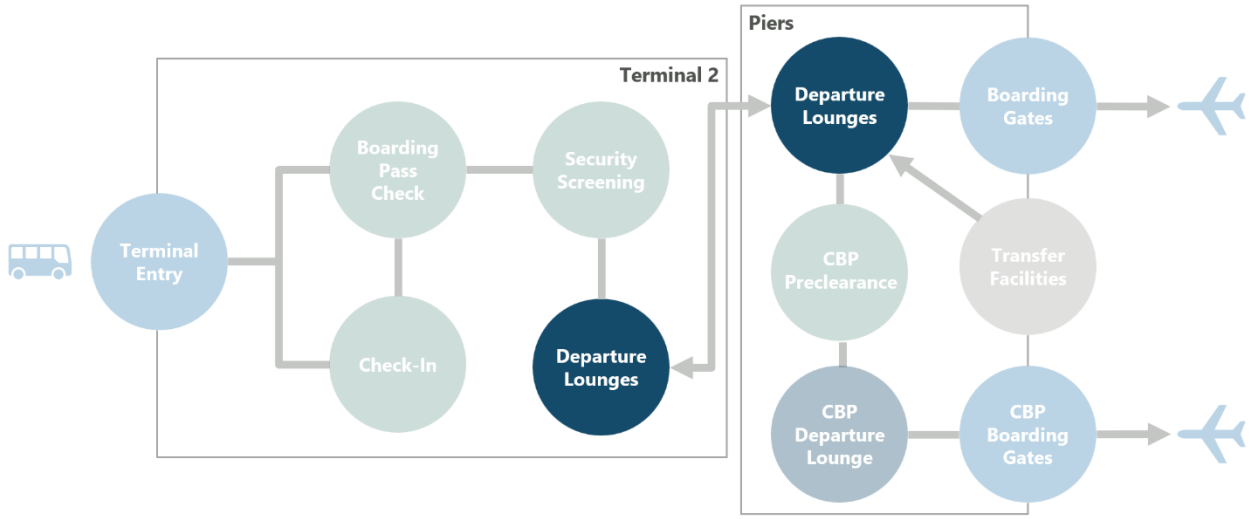
SOURCE: Ricondo, **June 2026**.

Departing passengers cleared through security screening proceed to departure lounge facilities located in Terminal 2 and Pier 4. Departure lounges include a range of services, and amenities, including seating areas, duty free and travel retail shops, and food and beverage locations. Passengers can move freely between the terminal and pier departure lounge areas, and the combined space accommodates the total volume of post-security passengers dwelling prior to aircraft boarding.

Peak hour departure lounge capacity is determined by maximum occupancy densities for each category of space within the terminal and pier departure lounge areas. For example, duty free shops accommodate fewer passengers per square metre than gate lounge seating areas. The corresponding peak hour capacity at scheduled flight departure time is determined by the proportional relationship represented by the passenger presentation profile. These factors are discussed in further detail in **Section 3**.

Exhibit 4.5 illustrates the departures lounge functions in the context of the overall departures flow and provides the combined passenger dwell capacity for Terminal 2 and Pier 4. The departures lounge facilities can accommodate a **peak hour departures volume at scheduled flight time of a maximum of 4,705 passengers**. The peak hour passenger volume is converted to an annual passenger volume using the peak hour ratio. The ratio and corresponding annual capacity are detailed in **Section 4.5**.

EXHIBIT 4.5: TERMINAL 2 DEPARTURES – TERMINAL AND PIER DEPARTURE LOUNGE CAPACITY



	Departure Lounges
Hourly Passenger Capacity at Function	4,940
Presentation Profile	105%
Hourly Passenger Capacity at Flight Time	**4,705**

SOURCE: Ricondo, **June 2026**.

4.2.5 TERMINAL 2 PRECLEARED DEPARTURES TO THE UNITED STATES

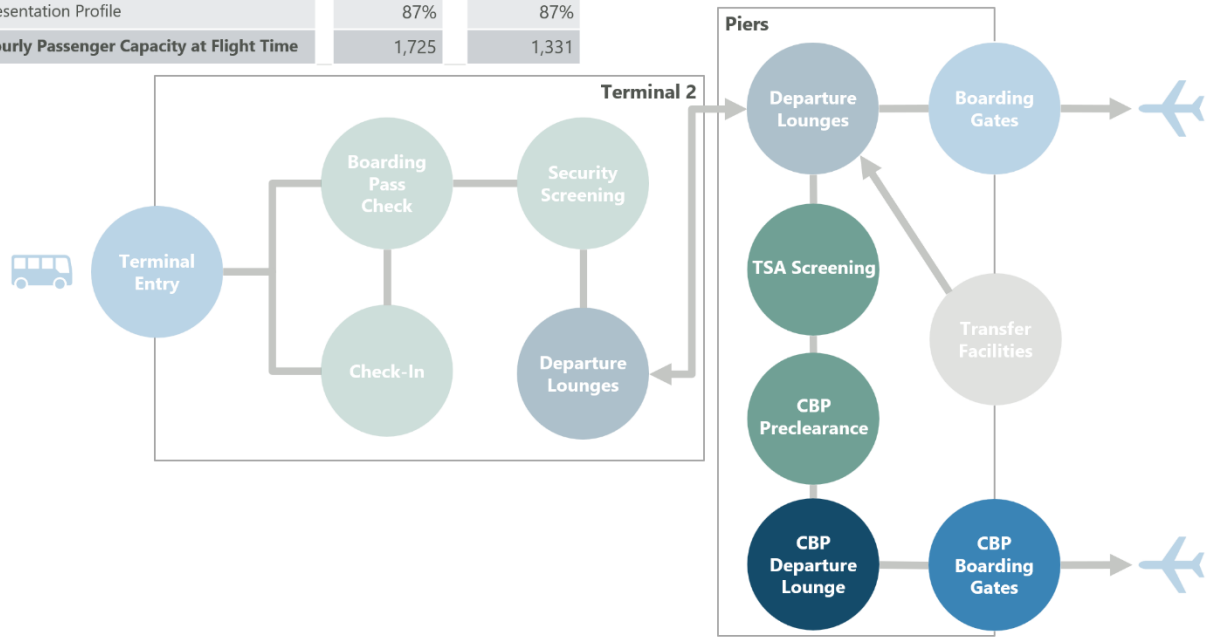
Passengers departing to the United States preclear U.S. CBP immigration before boarding in Dublin and arrive as domestic passengers at the destination airport. Passengers proceed from the Terminal 2 Departures Lounge to the CBP Preclearance facility in Pier 4. Following boarding pass and passport verification, transfer passengers advance to a security checkpoint, which provides supplementary screening in compliance with U.S. Transportation Security Administration (TSA) requirements, followed by customs and immigration screening with a CBP Officer. Non-transfer passengers head directly from the boarding pass and passport verification to customs and immigration screening. Precleared passengers then proceed to segregated departures lounge and gate holdroom facilities that are restricted to precleared US flights only. These holdroom facilities operate in a swing configuration that can be expanded or reduced in size to optimise the use of Pier 4.

Exhibit 4.6 illustrates the Terminal 2 U.S. CBP flow and the hourly passenger capacity of each individual processing function.

The preclearance function has the lowest capacity, limiting the **peak hour Terminal 2 CBP volume at scheduled flight time to a maximum of 1,331 passengers**. The peak hour passenger volume is converted to an annual passenger volume using the peak hour ratio. The ratio and corresponding annual capacity are detailed in **Section 4.5**.

EXHIBIT 4.6: TERMINAL 2 U.S. CUSTOMS AND BORDER PROTECTION PROCESSING CAPACITY

	TSA Screening	CBP Preclearance
Hourly Passenger Capacity at Function	1,500	1,157
Presentation Profile	87%	87%
Hourly Passenger Capacity at Flight Time	1,725	1,331



SOURCE: Ricondo, **June 2026**.

4.2.6 TERMINAL 2 BAGGAGE HANDLING SYSTEM

The Terminal 1 and Terminal 2 outbound baggage handling systems were upgraded several years ago to comply with ECAC EDS Standard 3 screening requirements. The improvements included load sharing between devices, additional resilience through new baggage links between systems, and the ability to transfer bags between Terminal 1 and Terminal 2. The upgrades allow the outbound baggage systems to provide sufficient handling capacity to accommodate the induction capacity of the check-in systems under current operating procedures and assumptions. The capacity analysis assumes the outbound system matches the Terminal 2 check-in capacity summarised in **Section 4.2.4**.

4.2.7 TERMINAL 2 ARRIVALS

The Terminal 2 terminating arrivals process consists of immigration screening, baggage reclaim, customs screening, and the arrivals hall.

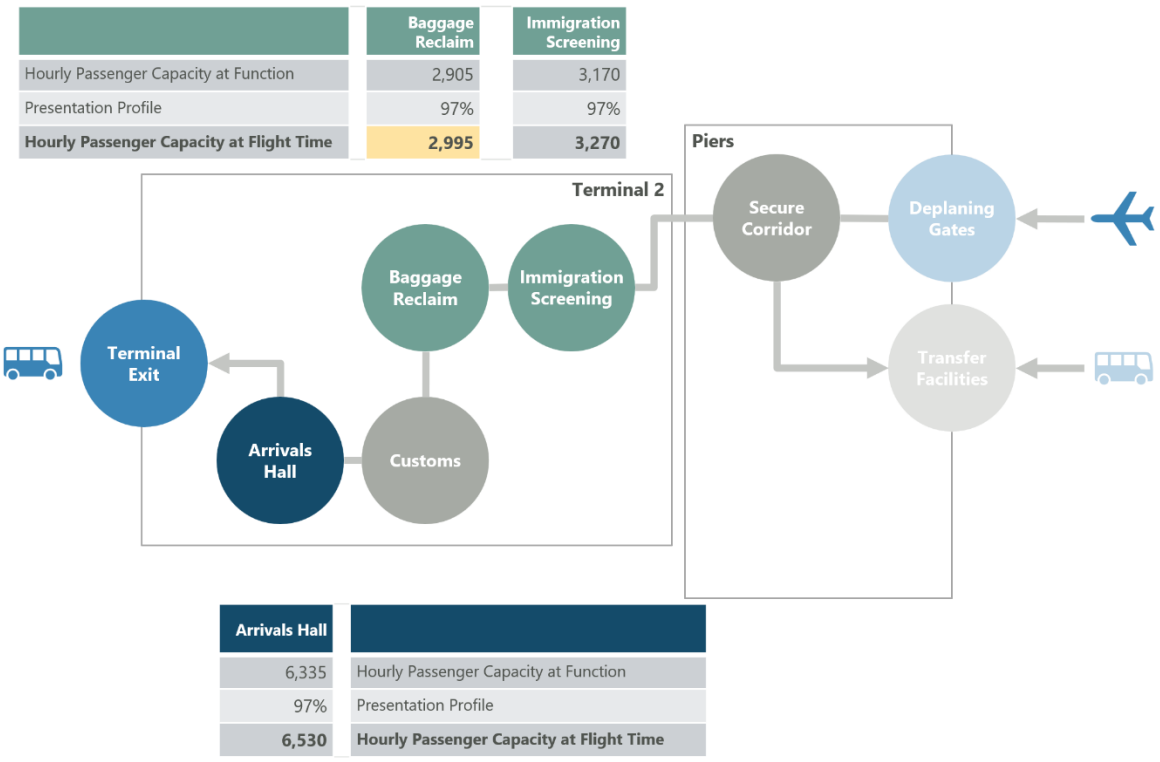
Peak hour capacity of each function is determined by an IATA ADRM methodology, which considers configuration, equipment, and operational characteristics. The corresponding peak hour capacity at scheduled flight departure time is determined by the proportional relationship represented by the passenger presentation profile. These factors are discussed in further detail in **Section 3**.

Exhibit 4.7 illustrates the Terminal 2 arrivals flow and the capacity of each individual function. Baggage reclaim has the lowest capacity, limiting the **peak hour Terminal 2 terminating arrivals volume at scheduled flight time to a maximum of 2,995 passengers**. The peak hour passenger volume is converted to an annual

passenger volume using the peak hour ratio. The ratio and corresponding annual capacity are detailed in **Section 4.5**.

See **Appendix A.1.4** for additional information on Terminal 2 Arrivals capacity.

EXHIBIT 4.7: TERMINAL 2 TERMINATING ARRIVALS CAPACITY



SOURCE: Ricondo, **June 2026**.

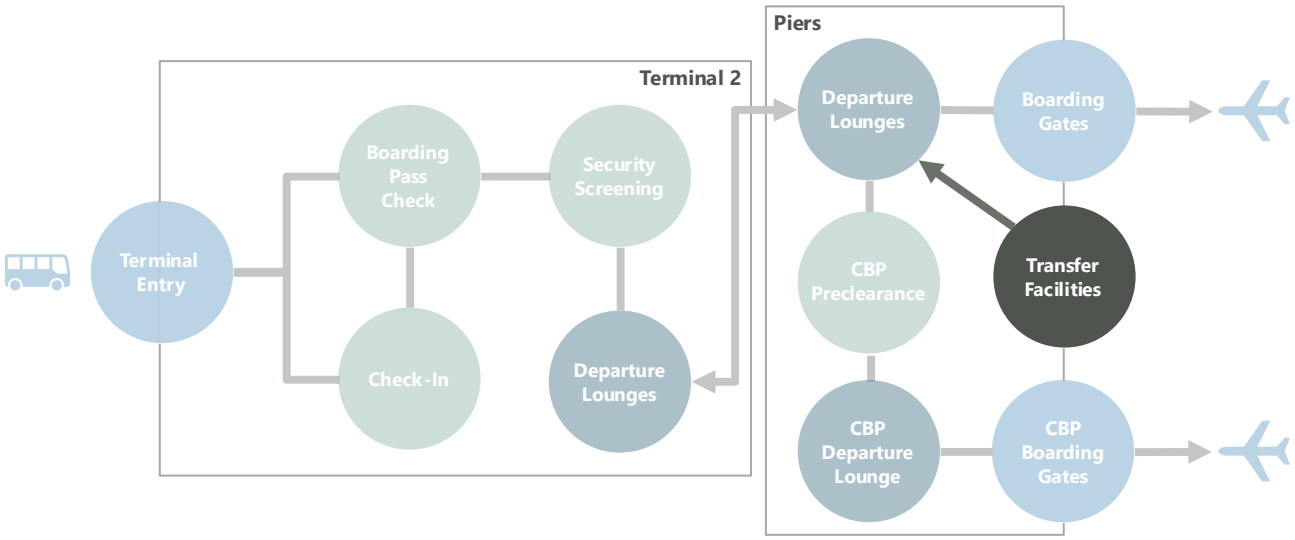
4.2.8 TERMINAL 2 TRANSFERS

The Terminal 2 transfers process consists of boarding pass verification for all transfer passengers, and security screening and immigration inspection for passengers arriving from or transferring to specific destinations. The limiting function in the transfer process is the boarding pass scan, which must be completed by all transfer passengers.

Peak hour capacity of each processing function is determined by an IATA ADRM methodology, which considers configuration, equipment, and operational characteristics. The corresponding peak hour capacity at scheduled flight departure time is determined by the proportional relationship represented by the passenger presentation profile. These factors are discussed in further detail in **Section 3**.

Exhibit 4.8 illustrates the Terminal 2 transfers flow and the hourly passenger capacity of the boarding pass scan function. This function limits the **peak hour Terminal 2 transfer volume at scheduled flight time to a maximum of 1,485 passengers**. The peak hour passenger volume is converted to an annual passenger volume using the peak hour ratio. The ratio and corresponding annual capacity are detailed in **Section 4.5**.

EXHIBIT 4.8: TERMINAL 2 TRANSFER CAPACITY



	Transfer Facilities
Hourly Passenger Capacity at Function	1,440
Presentation Profile	97%
Hourly Passenger Capacity at Flight Time	**1,485**

SOURCE: Ricondo, **June 2026**.

4.3 GATES AND STANDS

Aircraft boarding and deplaning processes are facilitated through a variety of gate facilities primarily located in the existing pier buildings. They provide holding areas for passenger pre-boarding, connectivity to aircraft stands through passenger boarding bridges (PBB) or walkout access to the apron, and connectivity to arrivals corridors, segregating arriving from departing passengers. Gate facilities that serve a mix of aircraft types and airline operations have complex vertical circulation and access control systems, facilitating multiple segregated passenger flows and holding facilities. For example, the Pier 4 gates are configured to serve multiple aircraft types and facilitate originating, terminating, transfer, and US preclearance departure flows.

Aircraft stands accommodate parked aircraft during the arrival and departure turnaround process, as well as for longer duration parking. Similar to gates, there are a variety of stand types that facilitate a range of operations, including narrow- and widebody aircraft sizes, and contact (PBB-served or walkout) or remote (bus-served) connectivity to gates.

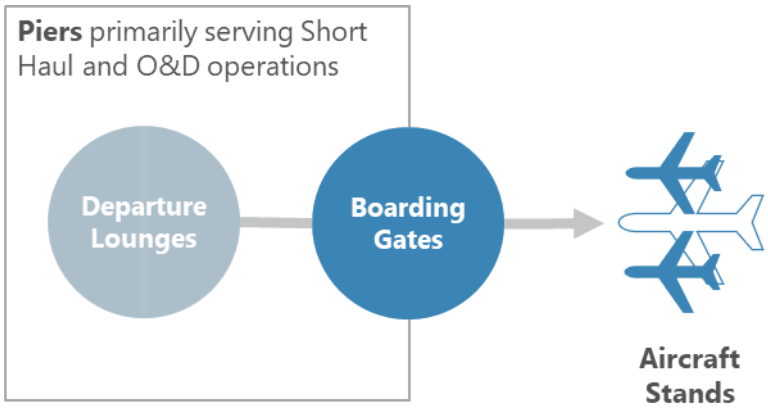
Assessing the capacity of gates and stands is complicated due to the distinct operational needs of different airlines and the level of common use across some of the available gate and stand inventory. For example, shared use of Pier 3 between Terminal 1 and Terminal 2 airlines, or shared use of remote apron facilities for long-duration parking. Aircraft parking durations are also a consideration in determining capacity – fast-turnaround narrowbody operations utilise stands at a higher rate than long-haul, full-service widebody operations.

Stand and gate capacity has been assessed for the total existing airport-wide inventory of 63 gates and 131 narrowbody equivalent (NBE) aircraft stands. The analysis establishes the average number of aircraft movements per gate or stand on a peak day, and the average number of peak day passengers per aircraft. These measures reflect the broader profile and characteristics of demand across the diverse range of airline operations at the

airport, as well as the distinct operational needs of individual airlines, which limit specific operational types to a specific set of gates and stands. These factors are discussed in further detail in **Appendix A, Sections A.2, A.3, and A.4.**

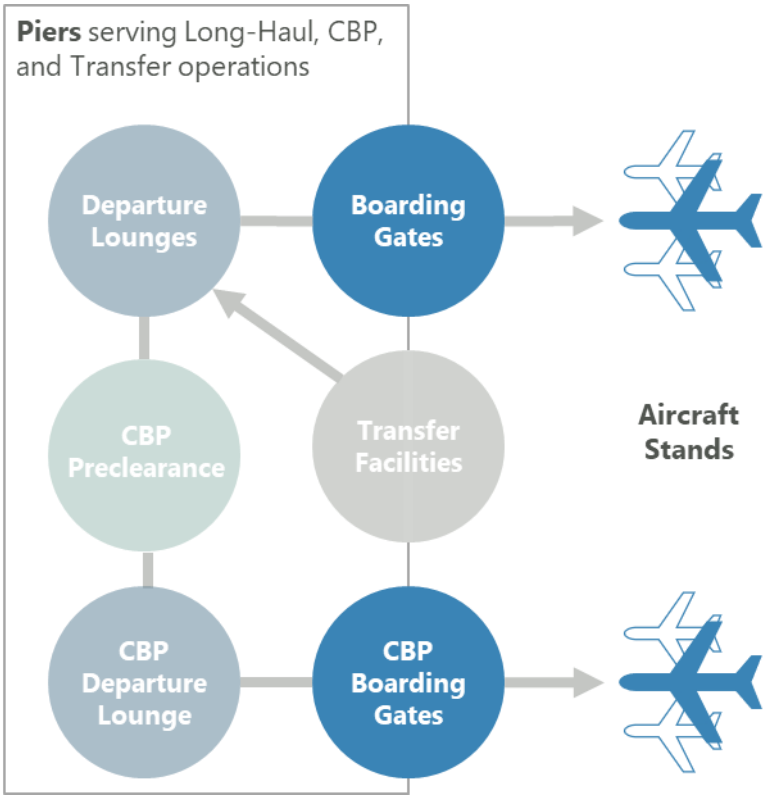
Exhibits 4.9 and **4.10** illustrate different operational types and the related connectivity required for gates and stands. The existing gate inventory can accommodate **a peak day passenger volume of 137,000 passengers**. The aircraft stand inventory can accommodate **a peak day passenger volume of 139,000 passengers**. The peak day passenger volume is converted to an annual passenger volume using the peak day ratio. The ratio and corresponding annual capacity are detailed in **Section 4.5**.

EXHIBIT 4.9: PIERS SERVING SHORT-HAUL, O&D OPERATIONS



SOURCE: Ricondo, **June 2026**.

EXHIBIT 4.10: PIERS SERVING LONG-HAUL, US CBP PRECLEARED, AND/OR TRANSFER OPERATIONS



SOURCE: Ricondo, **June 2026**.

4.4 AIRFIELD

Dublin Airport has two independent parallel runways (Runways 10R-28L and 10L-28R) and a single crosswind runway (Runway 16-34). The runways are connected to the aircraft parking aprons via a system of taxiways.

Runway 10L-28R, the north parallel runway, created a step change in airfield capacity when it was opened in 2022. The combined capacity of the two parallel runway system exceeds the current capacity of the other elements of the airport system.

4.5 EXISTING CAPACITY SUMMARY

The peak period existing capacity for each functional component of the Airport is converted to annual capacity using the corresponding peak period demand ratio and rounded to the nearest 0.5 million passengers per annum. The ratios and resulting annual function capacities are summarised in **Table 4.1**.

Peak period ratios represent the peak period demand per one million passengers per annum (MPPA) for each demand segment. For example, the peak period demand ratio for Terminal 1 departures is **355 peak hour** originating passengers **per one million annual** originating passengers. **Section 3** provides additional information on peak period ratios.

Continuing the above example, Terminal 1 peak hour departures capacity is 4,715 passengers. **Dividing the 4,715 peak hour passenger capacity** by the Terminal 1 originating **peak period demand ratio of 355 peak hour passengers per one million annual passengers**, establishes the corresponding annual Terminal 1 **annual departures capacity of 13.3 MPPA**.

The annual Terminal 1 terminating arrivals capacity, calculated in the same manner as Terminal 1 originating departures, is 17.2 MPPA, which is higher than the Terminal 1 departures capacity. A similar process is followed for Terminal 2 to calculate the 14.0 MPPA capacity shown in Table 4.1. Combining the Terminals 1 and 2 originating and terminating passenger capacities plus the transfer capacity value establishes 43.5 MPPA as the total terminal capacity.

Airlines book approximately the same volume of arriving and departing passengers, which limits total capacity to the lowest of the departures or arrivals processes, which means that on an annual basis, arrivals and departures demand are approximately equal and limited by the lower capacity. Equivalent capacities for the Terminal departures and arrivals functions are determined by selecting the lowest functional flow for each terminal and multiplying by two to represent the combined arrivals and departures capacity. As an example, in Table 4.1 the Terminal 1 departures capacity of 13.3 MPPA is lower than the Terminal 1 Arrivals capacity of 17.2 MPPA. The lower departures capacity is doubled (rounded to the nearest 05. MPPA) to represent the originating and terminating capacity of Terminal 1.

Boarding gates are the limiting functional component, establishing the current airport passenger capacity as **40.5 MPPA**.

TABLE 4.1: EXISTING CAPACITY SUMMARY

FACILITY	PEAK PERIOD	PEAK PERIOD CAPACITY	PEAK PERIOD DEMAND RATIO	ANNUAL FUNCTION CAPACITY (MPPA)	EQUIVALENT ANNUAL AIRPORT CAPACITY (MPPA)
TERMINAL PROCESSING CAPACITY					
Terminal 1					
Departures	Peak Hour Originating Passengers	4,715	355	**13.3**	26.5
Arrivals	Peak Hour Terminating Passengers	5,490	320	17.2	
Terminal 2					
Departures	Peak Hour Originating Passengers	3,565	510	7.0	14.0
Arrivals	Peak Hour Terminating Passengers	2,995	375	8.0	
Total Originating and Terminating Terminal Capacity					**40.5**
Terminal 2 Transfers	Peak Hour Transfer Passengers	1,485	955	**1.6**	3.0
Total Terminal Capacity					**43.5**
AIRCRAFT STANDS					
Aircraft Stands	Peak Day Total Passengers[1/]	139,000	3,400	41.0	
Total Aircraft Stand Capacity					**41.0**
BOARDING GATES					
Boarding Gates	Peak Day Total Passengers[1/]	137,000	3,400	40.5	
Total Boarding Gate Capacity					**40.5**
TOTAL AIRPORT CAPACITY[2/]					**40.5**

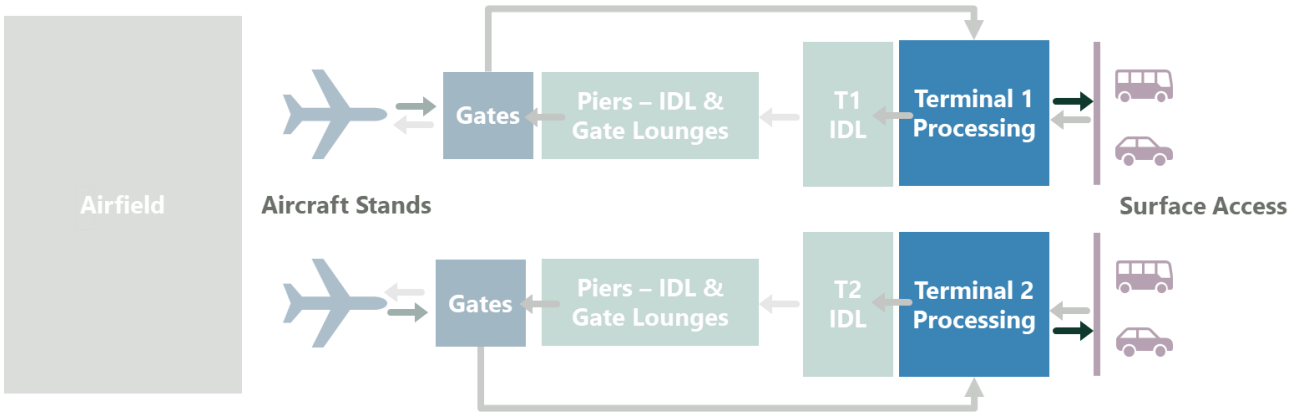
SOURCE: Ricondo, **June 2026**.
NOTES:
1/ Originating, terminating, transfer, and transit passengers
2/ Lowest of terminal, aircraft stands, and boarding gate capacities

APPENDIX A EXISTING CAPACITY

A.1 TERMINAL PROCESSOR FACILITIES

Exhibit A-1 illustrates the Terminal 1 and Terminal 2 processing facilities within the context of the overall airport system. Processing functions include facilities such as check-in and security screening for departing passengers and immigration screening and baggage reclaim for arriving passengers.

EXHIBIT A-1: DUBLIN AIRPORT FUNCTIONAL AREAS – TERMINAL PROCESSING FACILITIES



SOURCE: Ricondo, **June 2026**.

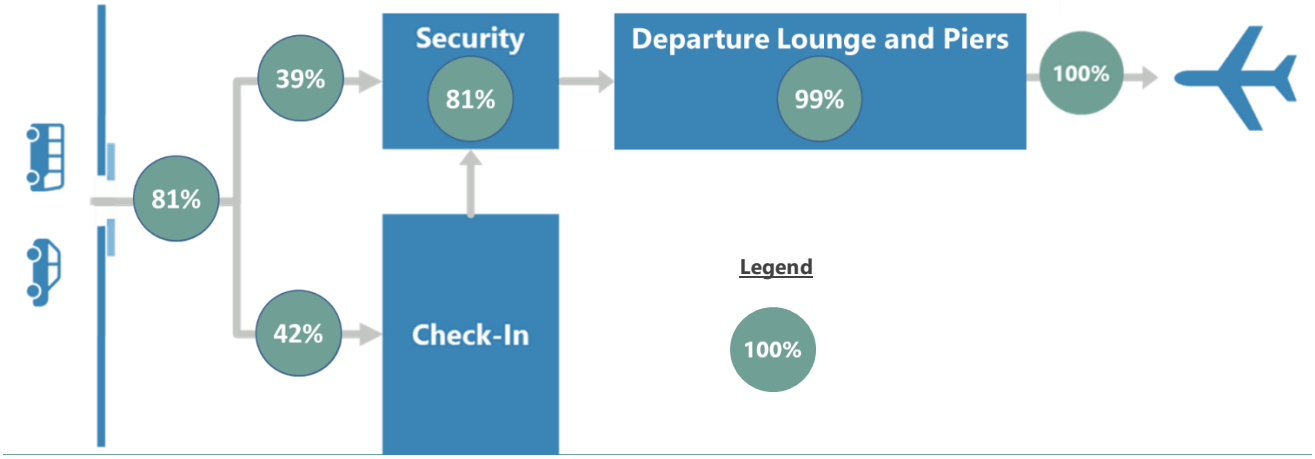
The following subsections provide an overview of the departing and arriving processing facilities for Terminal 1 and Terminal 2, and a summary of the corresponding peak hour capacity.

A.1.1 TERMINAL 1 DEPARTURES

Terminal 1 Departures is located on Level 2 of the building. The process flow, which is illustrated in **Exhibit A-2**, begins with passengers entering the terminal building from the drop-off kerbs, car park, and ground transportation centre.

The peak period volume of passengers presenting at each step in the process is directly proportional to the volume of passengers onboard aircraft during the peak period at flight departure time. **Exhibit A-2** illustrates the proportional presentation volumes for the Terminal 1 departures flow, which are represented as a percentage of the peak period passenger volume at scheduled flight departure time.

EXHIBIT A-2: TERMINAL 1 DEPARTURES FLOW



SOURCE: Ricondo, **June 2026**.

A.1.1.1 CHECK-IN

Departing passengers enter Terminal 1 from the ground transportation facilities via the departures or arrivals forecourt and proceed to the departures level. Passengers with carry-on bags and mobile or pre-printed boarding passes continue directly to the security screening area. All other passengers proceed to the check-in area to collect boarding passes and drop-off baggage.

Passenger Presentation Profile

As shown in **Exhibit A-2**, 81% of Terminal 1 peak departing passengers at flight time enter the terminal, of whom 39% proceed directly to security screening and 42% go to check-in. Passenger show-up characteristics and flow distribution result in a **peak check-in presentation volume equivalent to 42%** of the peak departing passenger volume at flight time.

Configuration and Equipment

The check-in area has eleven banks of check-in positions (Areas 3-13) at the Departures Level, and an additional bank of positions in Area 14 located below the Arrivals Level. Most of the desks in Areas 12 and 13 are configured as self-service bag drop positions which are accessed after passengers use kiosks to print baggage tags.

There are also ten kiosks located between Areas 3 to 11 which are available for check-in and accessing airline bag drop counters. Several counters can also be utilised as bag drop positions. Area 14 has twenty-four check-in desks and the capacity analysis assumes ten of the desks would be operated as bag drops supported by twenty kiosks.

Passenger Processing Characteristics

Average passenger processing times vary by airline and destination. Airline policies and destination type can influence the number of bags checked per passenger, and security and document check procedures can vary by destination. Average passenger processing times in Terminal 1 are slightly over 2 minutes per passenger for full-service check-in and are 45 seconds per passenger for bag-drop positions.

Other Operational Characteristics

Check-in facility allocation policies have a significant impact on the effective capacity of the available facilities. In Terminal 1, Areas 12 and 13 are dedicated to Ryanair; Areas 3-11 are operated as common-use facilities for over thirty other airlines operating in the terminal. Common-use allocation rules assign check-in positions to

airlines for fixed durations, usually three hours, in advance of departure times based on number of flights and aircraft seating size.

Allocation of check-in positions to multiple airlines with a range of upcoming flight departure times results in uneven distribution of passengers among the available desks – at any point in time some of the positions are very busy and some are quiet. This results in a lower effective capacity for the allocated positions than the theoretical processing capacity of all the allocated units.

In Terminal 1, the effective check-in capacity is further reduced by limitations in the available queuing areas between each of the eleven check-in banks.

Desk allocation and queue limitations result in an effective check-in capacity utilisation of **45%** for Agent Counters and **57%** of kiosk positions in Areas 3-11, and **64%** for Agent Counters and **70%** for Kiosks in Areas 12 and 13.

Peak Period Capacity Assessment

The IATA ADRM methodology was utilised to establish the maximum throughput capacity of the Terminal 1 check-in facilities. The assessment determined that the critical peak period duration is 60 minutes. **Appendix B** provides an overview of the IATA ADRM analysis.

Tables A-1.A and **A-1.B** provide a summary of the IATA ADRM methodology applied for Terminal 1 check-in facilities in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-1.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in Table **A-1.B** indicates the Terminal 1 passenger check-in processes can accommodate up to 3,585 presenting passengers per hour, equivalent to **8,520 peak hour passengers at scheduled flight time**.

TABLE A-1.A: 2023 TERMINAL 1 EFFECTIVE PEAK PERIOD CHECK-IN CAPACITY

	AGENT POSITIONS	KIOSKS	BAG DROPS	TOTAL CAPACITY
Effective Processing Capacity				
Number of Positions	102	10	33	
Average Passenger Processing Time per Position (seconds)	125	45	90	
Percent Effective Position Utilization	48%	57%	70%	
Critical Peak Period Duration (minutes)	60	60	60	
Effective Peak Period Processing Capacity (passengers)	**1,410**	**455**	**920**	**2,785**
Effective Queue Capacity				
Effective MQT (minutes)	15	5	5	
Effective Queue Capacity at MQT	355	40	75	
Available Critical Peak Period Capacity	**1,765**	**495**	**995**	**3,255**
Processor Presentation Percentage of Peak Period at Flight Time				**42%**
Peak Period Processor Capacity at Flight Time				**7,750**

SOURCE: daa; Ricondo analysis, February 2023.

TABLE A-1.B: 2026 TERMINAL 1 EFFECTIVE PEAK PERIOD CHECK-IN CAPACITY

	AGENT POSITIONS	KIOSKS	BAG DROPS	TOTAL CAPACITY	NOTES
Effective Processing Capacity					
Number of Positions	102	74	42		See Table B-1.C, Note 1
Average Passenger Processing Time per Position (seconds)	125	90	45		
Percent Effective Position Utilisation	48%	57%	70%		
Critical Peak Period Duration (minutes)	60	60	60		
Effective Peak Period Processing Capacity (passengers)	**1,410**	**1,680**	**2,340**	**3,090**	
Effective Queue Capacity					
Effective MQT (minutes)	15	5	5		
Effective Queue Capacity at MQT	355	140	195		
Available Critical Peak Period Capacity	**1,765**	**1,820**	**2,535**	**3,585**	
Processor Presentation Percentage of Peak Period at Flight Time				**42%**	
Peak Period Processor Capacity at Flight Time				**8,520**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-1.C: 2023 TO 2026 CHANGES - TERMINAL 1 CHECK-IN

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	Updated to reflect changes in kiosk and bag drop deployment in the Terminal 1 Check-In facilities. Table also updated to reflect the Area 14 check-in facility with an assumed deployment of kiosks and bag drop facilities.
Demand Profile	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Existing vs. Baseline	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.

SOURCE: daa; Ricondo analysis, **June 2026**.

A.1.1.2 SECURITY SCREENING

The security screening checkpoints include two processing steps – an automated boarding pass scan to confirm eligibility to enter the airside, followed by the search process.

Passenger Presentation Profile

As illustrated in **Exhibit A-2**, a peak volume equivalent to 81% of the Terminal 1 peak departing passenger volume at flight time enters the terminal building from the ground transportation facilities, of which 39% continues directly to security and 42% proceeds to check-in. The check-in passengers recombine with the direct to security passengers, resulting in a **peak security presentation volume equivalent to 81%** of the peak departing passenger volume at flight time.

Configuration and Equipment

The automated boarding pass screening facility is configured with twelve autopass screening devices, including the fast-track devices. Passengers proceed through the autopass process and enter the search area.

The search process screens passengers and cabin baggage through fourteen security lanes in normal operations, including the fast-track lanes. Each lane is equipped with an automated tray retrieval system (ATRS), C3 baggage scanner, secondary screening areas, a multi-position pre-scanning divest area and a bag retrieval and recompose area.

The search process is configured with a single scanner for individual passenger screening for every two baggage screening lanes. The passenger screening devices have a higher capacity than the baggage screening process and do not limit lane capacity.

Passenger Processing Characteristics

Automated boarding pass screening is a quick, straightforward process that is incorporated into the queuing area prior to the search process. On average each automated boarding pass scan device can process a passenger every 10 seconds.

The security screening process has been upgraded to C3 equipment and reconfigured to provide additional positions since the 2023 Baseline Capacity assessment. The processing rates in the immediate post-deployment period are assumed to be 240 passengers per hour for the 2026 Existing Capacity assessment.

Other Operational Characteristics

The IATA ADRM recommends a range of contingency and resilience considerations for passenger and baggage security screening systems and equipment. The capacity assessment excludes security lanes reserved for operational contingencies. Total available inventory for normal operations is fourteen lanes.

Peak Period Capacity Assessment

The IATA ADRM methodology was utilised to establish the maximum throughput capacity of the Terminal 1 security screening facilities. The assessment determined that the critical peak period duration is 60 minutes.

Tables A-2.A and **A-2.B** provide a summary of the IATA ADRM methodology for the critical peak period duration in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-2.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in Table **A-2.B** indicates the Terminal 1 effective boarding pass scan processes can accommodate up to 9,960 presenting passengers per hour, equivalent to **12,295 peak hour passengers** at scheduled flight time.

TABLE A-2.A: 2023 TERMINAL 1 EFFECTIVE PEAK PERIOD BOARDING PASS SCAN

	AUTOPASS CHECK	TOTAL CAPACITY
Effective Processing Capacity		
Number of Positions	12	
Average Passenger Processing Time per Position (seconds)	10	
Critical Peak Period Duration (minutes)	60	
Effective Peak Period Processing Capacity (passengers)		**4,320**
Effective Queue Capacity		
Available Queue Area (square metres)	396	
Effective MQT (minutes)	5	
Effective Queue Capacity at MQT		360
AVAILABLE CRITICAL PEAK PERIOD CAPACITY		**4,680**
Processor Presentation Percentage of Peak Period at Flight Time		**81%**
Peak Period Processor Capacity at Flight Time		**5,780**

SOURCE: daa; Ricondo analysis, **February 2023**.

TABLE A-2.B: 2026 TERMINAL 1 EFFECTIVE PEAK PERIOD BOARDING PASS SCAN

	AUTOPASS CHECK	TOTAL CAPACITY	NOTES
Effective Processing Capacity			
Number of Positions (see Table B.2.C)	16		See Table B-2.C, Note 1
Average Passenger Processing Time per Position (seconds)	6		See Table B-2.C, Note 2
Critical Peak Period Duration (minutes)	60		
Effective Peak Period Processing Capacity (passengers)		**9,600**	
Effective Queue Capacity			
Available Queue Area (square metres)	396		
Effective MQT (minutes)	5		
Effective Queue Capacity at MQT		360	
AVAILABLE CRITICAL PEAK PERIOD CAPACITY		**9,960**	
Processor Presentation Percentage of Peak Period at Flight Time		**81%**	
Peak Period Processor Capacity at Flight Time		**12,295**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-2.C: 2023 TO 2026 CHANGES - TERMINAL 1 BOARDING PASS

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	Note 1: Additional boarding pass scan units have been deployed at Terminal 1 Central Search. Note 2: Updated boarding pass scan equipment process passengers faster than the 2023 equipment, increasing average throughput per unit.
Demand Profile	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Existing vs. Baseline	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.

SOURCE: daa; Ricondo analysis, **June 2026**.

Tables A-3.A and **A-3.B** provide a summary of the IATA ADRM methodology for the critical peak period duration in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-3.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-3.B** indicates the Terminal 1 effective security screening processes can accommodate up to 3,570 presenting passengers per hour, equivalent to **4,405 peak hour passengers** at scheduled flight time.

TABLE A-3.A: 2023 TERMINAL 1 EFFECTIVE PEAK PERIOD SECURITY SEARCH

	SECURITY SCREENING	TOTAL CAPACITY
Effective Processing Capacity		
Number of Positions Available, Excluding Resilience	14	
Average Passenger Processing Time per Position (seconds)	16	
Critical Peak Period Duration (minutes)	60	
Efficiency Factor	91%	
Effective Peak Period Processing Capacity (passengers)		**2,880**
Effective Queue Capacity		
Available Queue Area (square metres)	660	
Effective MQT (minutes)	10	
Effective Queue Capacity at MQT		480
AVAILABLE CRITICAL PEAK PERIOD CAPACITY		**3,360**
Processor Presentation Percentage of Peak Period at Flight Time		**81%**
Peak Period Processor Capacity at Flight Time		**4,150**

SOURCE: daa; Ricondo analysis, **February 2023**.

TABLE A-3.B: 2026 TERMINAL 1 EFFECTIVE PEAK PERIOD SECURITY SEARCH

	SECURITY SCREENING	TOTAL CAPACITY	NOTES
Effective Processing Capacity			
Number of Positions Available, Excluding Resilience	14		
Average Passenger Processing Time per Position (seconds)	15		See Table B-3.C, Note 1
Critical Peak Period Duration (minutes)	60		
Efficiency Factor	91%		
Effective Peak Period Processing Capacity (passengers)		**3,060**	
Effective Queue Capacity			
Available Queue Area (square metres)	660		
Effective MQT (minutes)	10		
Effective Queue Capacity at MQT		510	
AVAILABLE CRITICAL PEAK PERIOD CAPACITY		**3,570**	
Processor Presentation Percentage of Peak Period at Flight Time		**81%**	
Peak Period Processor Capacity at Flight Time		**4,405**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-3.C: 2023 TO 2026 CHANGES - TERMINAL 1 SECURITY

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
 **Equipment, Technology and Process Improvements**	Note 1: new C3 cabin baggage screening equipment has been deployed in Terminal 1 Central Search, reducing the average processing time per passenger and increasing throughput per position.
 **Demand Profile**	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
 **Existing vs. Baseline**	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.

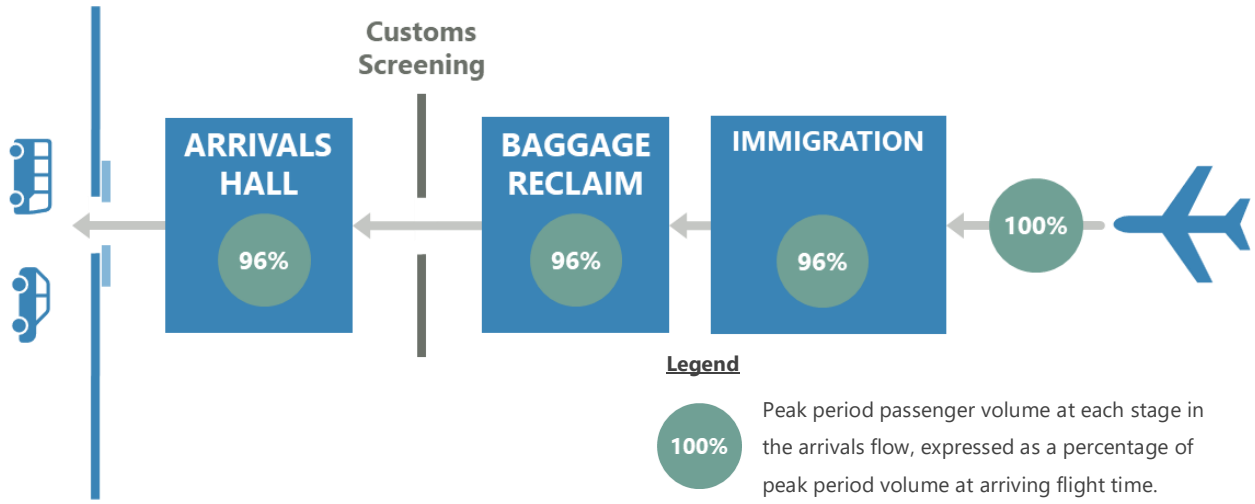
SOURCE: daa; Ricondo analysis, **June 2026**.

A.1.2 TERMINAL 1 ARRIVALS

Terminal 1 Arrivals is located on Level 1 of the building. The process flow, which is illustrated in **Exhibit A-3**, begins with passengers entering a sterile corridor via the arrival gate and proceeding to either the Pier 1 and 2 or Pier 3 immigration halls.

Following completion of immigration processing, passengers enter the baggage reclaim hall, collect any checked baggage, and exit through customs screening to the landside arrivals hall.

EXHIBIT A-3: TERMINAL 1 ARRIVALS FLOW



SOURCE: Ricondo, **June 2026**.

A.1.2.1 IMMIGRATION PROCESSING

Passengers arriving at Terminal 1 are processed at either the Pier 1 and 2 immigration hall, or the separate Pier 3 immigration hall, depending on which pier and gate handles the arriving aircraft. The two immigration facilities operate independently.

Passenger Presentation Profile

As illustrated in **Exhibit A-3**, a **peak presentation volume equivalent to 96%** of the Terminal 1 peak arriving passenger volume at flight arrival time enter the terminal building via sterile corridors connected to arrival gates.

Configuration and Equipment

Piers 1 and 2 are used primarily by short-haul operators serving UK and EU routes. Passengers access the immigration hall and enter the queue for either the staffed immigration desks or E-Gates facilities depending on eligibility and choice.

Pier 3 is used by a wide range of Terminal 1 Airlines, including most of the Terminal 1 widebody aircraft operators. Passengers access the immigration hall and enter the queue for the immigration booths.

Passenger Processing Characteristics

During the EU passenger arrival peak period, which is the most demanding peak period in the Pier 1 and 2 immigration hall the weighted average processing time for EU, Non-EU and North American passengers at the immigration booths is 18 seconds per passenger.

During the **Pier 3** arrival peak period, which has a much higher percentage of non-EU passengers compared to the Pier 1 and 2 arrivals passengers, the weighted average processing time for EU, Non-EU and North American passengers at the immigration booths is 43.3 seconds per passenger.

Peak Period Capacity Assessment

The IATA ADRM methodology was utilised to establish the maximum throughput capacity of the two arrival immigration facilities. The assessment determined that the critical peak period duration is 60 minutes.

In addition to the process flow capacity, the available queue space in the immigration halls was assessed to ensure the target queue time can be accommodated in the queue area. Both facilities have sufficient queue space available to accommodate queue volumes at the target level-of-service.

Tables A-4.A and **A-4.B** provide a summary of the IATA ADRM methodology for the critical peak period duration for the Pier 1 and 2 facilities in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-4.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-4.B** indicates the Terminal 1 Pier 1 and 2 optimized immigration processes can accommodate up to 4,335 presenting passengers per hour, equivalent to **4,500 peak hour passengers** at scheduled flight time.

Tables A-6.A and **A-6.B** provide a summary of the IATA ADRM methodology for the critical peak period duration for combined Piers 1, 2 and 3 in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-6.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-6.B** indicates the Terminal 1 combined immigration processes can accommodate up to 5,270 presenting passengers per hour, equivalent to **5,490 peak hour passengers** at scheduled flight time.

TABLE A-4.A: 2023 TERMINAL 1 PIER 1 AND 2 OPTIMISED PEAK PERIOD IMMIGRATION CAPACITY

	BOOTH POSITIONS	E-GATES	TOTAL CAPACITY
Effective Processing Capacity			
Number of Positions	15	20	
Average Passenger Processing Time per Position (seconds)	18.0	24.0	
Critical Peak Period Duration (minutes)	60	60	
Effective Peak Period Processing Capacity (passengers)	**2,995**	**3,000**	
Effective Queue Capacity			
Effective MQT (minutes)	10	5	
Effective Queue Capacity at MQT	499	250	
Queue Area Required at MQT (1.3m^2 per pax)	650	325	975
Queue Area Available			1035
Available Critical Peak Period Capacity	**3,645**	**3,325**	**6,970**
Processor Presentation Percentage of Peak Period at Flight Time			**96%**
Peak Period Processor Capacity at Flight Time			**7,260**

SOURCE: daa; Ricondo analysis, **October 2023**.

TABLE A-4.B: 2026 TERMINAL 1 PIER 1 AND 2 OPTIMISED PEAK PERIOD IMMIGRATION CAPACITY

	BOOTH POSITIONS	E-GATES	TOTAL CAPACITY	NOTES
Effective Processing Capacity				
Number of Positions	11	10		See Table B-4.C, Note 1
Average Passenger Processing Time per Position (seconds)	18.0	24.0		
Critical Peak Period Duration (minutes)	60	60		
Effective Peak Period Processing Capacity (passengers)	**2,195**	**1,500**		
Effective Queue Capacity				
Effective MQT (minutes)	10	5		
Effective Queue Capacity at MQT	365	125		
Queue Area Required at MQT (1.3m² per pax)	475	165	640	
Queue Area Available			720	See Table B-4.C, Note 1
Available Critical Peak Period Capacity	**2,670**	**1,665**	**4,335**	
Processor Presentation Percentage of Peak Period at Flight Time			**96%**	
Peak Period Processor Capacity at Flight Time			**4,500**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-4.C: 2023 TO 2026 CHANGES - TERMINAL 1 PIER 1 AND 2 IMMIGRATION

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Demand Profile	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Existing vs. Baseline	Note 1: The 2023 Base Capacity assumed a planned operational reconfiguration within the footprint of the Pier 1 and 2 immigration facility. The planned reconfiguration has not yet been implemented. The 2026 Existing Capacity reflects the existing configuration, available positions and queue area.

SOURCE: daa; Ricondo analysis, **June 2026**.

Tables A-5.A and **A-5.B** provide a summary of the IATA ADRM methodology for the critical peak period duration for the Pier 3 facilities in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-5.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-5.B** indicates the Terminal 1 Pier 3 optimized immigration processes can accommodate up to 934 presenting passengers per hour, equivalent to **970 peak hour passengers** at scheduled flight time.

TABLE A-5.A: 2023 TERMINAL 1 PIER 3 OPTIMISED PEAK PERIOD IMMIGRATION CAPACITY

	BOOTH POSITIONS	E-GATES	TOTAL CAPACITY
Effective Processing Capacity			
Number of Positions	12	4	
Average Passenger Processing Time per Position (seconds)	43.3	24.0	
Critical Peak Period Duration (minutes)	60	60	
Effective Peak Period Processing Capacity (passengers)	**995**	**600**	
Effective Queue Capacity			
Effective MQT (minutes)	10	5	
Effective Queue Capacity at MQT	166	50	
Queue Area Required at MQT (1.3m^2 per pax)	215	65	280
Queue Area Available			345
Available Critical Peak Period Capacity	**1,210**	**665**	**1,875**
Processor Presentation Percentage of Peak Period at Flight Time			**96%**
Peak Period Processor Capacity at Flight Time			**1,955**

SOURCE: daa; Ricondo analysis, **October 2023**.

TABLE A-5.B: 2026 TERMINAL 1 PIER 3 OPTIMISED PEAK PERIOD IMMIGRATION CAPACITY

	BOOTH POSITIONS	E-GATES	TOTAL CAPACITY	NOTES
Effective Processing Capacity				
Number of Positions	8	0		See Table B-5.C, Note 1
Average Passenger Processing Time per Position (seconds)	37.5	0		See Table B-5.C, Note 1
Critical Peak Period Duration (minutes)	60	0		See Table B-5.C, Note 1
Effective Peak Period Processing Capacity (passengers)	**768**	**0**		
Effective Queue Capacity				
Effective MQT (minutes)	10	0		
Effective Queue Capacity at MQT	128	0		
Queue Area Required at MQT (1.3m^2 per pax)	166	0	166	
Queue Area Available			160	See Table B-5.C, Note 1
Available Critical Peak Period Capacity	**934**	**0**	**934**	
Processor Presentation Percentage of Peak Period at Flight Time			**96%**	
Peak Period Processor Capacity at Flight Time			**970**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-5.C: 2023 TO 2026 CHANGES - TERMINAL 1 PIER 3 IMMIGRATION

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Demand Profile	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Existing vs. Baseline	Note 1: The 2023 Base Capacity assumed a planned operational reconfiguration within the footprint of the Pier 1 and 2 immigration facility. The planned reconfiguration has not yet been implemented. The 2026 Existing Capacity reflects the existing configuration, available positions and queue area.

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-6.A: 2023 EFFECTIVE PEAK PERIOD TERMINAL 1 IMMIGRATION CAPACITY

	BOOTH POSITIONS	E-GATES	TOTAL CAPACITY
Pier 1 and 2 Critical Peak Period Capacity	3,645	3,325	6,970
Pier 3 Critical Peak Period Capacity	1,210	665	1,875
Available Critical Peak Period Capacity	**4,855**	**3,990**	**8,845**
Processor Presentation Percentage of Peak Period at Flight Time			**96%**
Peak Period Processor Capacity at Flight Time			**9,215**

SOURCE: daa; Ricondo analysis, **October 2023**.

TABLE A-6.B: 2026 EFFECTIVE PEAK PERIOD TERMINAL 1 IMMIGRATION CAPACITY

	BOOTH POSITIONS	E-GATES	TOTAL CAPACITY	NOTES
Pier 1 and 2 Critical Peak Period Capacity	2,670	1,665	4,335	See Table B-6.C, Note 1
Pier 3 Critical Peak Period Capacity	934	0	934	See Table B-6.C, Note 2
Available Critical Peak Period Capacity	**3,605**	**1,665**	**5,270**	
Processor Presentation Percentage of Peak Period at Flight Time			**96%**	
Peak Period Processor Capacity at Flight Time			**5,490**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-6.C: 2023 TO 2026 CHANGES - TERMINAL 1 IMMIGRATION

CATEGORY		CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
	**Equipment, Technology and Process Improvements**	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
	**Demand Profile**	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
	**Existing vs. Baseline**	See Tables B-4.C and B-5.C for differences between the 2023 and 2026 assessments for the Terminal 1 Immigration Facilities.

SOURCE: daa; Ricondo analysis, **June 2026**.

A.1.2.2 BAGGAGE RECLAIM

The baggage reclaim hall capacity is assessed using a methodology developed from the IATA ADRM 12th edition approach to take into account both the total baggage reclaim device length available, and the accumulation space available for passengers.

Historical averages for passengers with bags and bags per flight from airport operational records are used to calculate the number of flights that can be accommodated in the hall at one time. The average length of allocation time per flight and corresponding number of arrivals that can be accommodated per hour is calculated, establishing the number of flights that can be handled in the peak hour.

Configuration and Equipment

Terminal 1 baggage reclaim devices can accommodate 740 total bags simultaneously. The available dwell space for passengers waiting to collect bags can accommodate up to 790 passengers simultaneously.

Peak Period Capacity Assessment

Tables A-7.A and **A-7.B** provide a summary of methodology for the critical peak period duration in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-7.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-7.B** indicates the Terminal 1 improved baggage reclaim processes can accommodate up to 5,370 presenting passengers per hour, equivalent to **5,575 peak hour passengers** at scheduled flight time.

TABLE A-7.A: 2023 TERMINAL 1 IMPROVED BAGGAGE RECLAIM CAPACITY.

PROCESS	PASSENGERS	BAGS	LIMITING CAPACITY
Capacity All Devices	790	835	
Average Passenger with Bags and Bags per ATM	56	76	
Average Flights Accommodated Across All Devices Simultaneously	14.1	11.0	
Average Time to Clear from First Bag Delivery (mins)	15	15	
Flights That Can Be Accommodated in a Peak Hour	56	44	
Average Total Passengers per Flight	138	138	
Total Peak Hour Passenger Capacity	**7,780**	**6,060**	**6,060**
Processor Presentation Percentage of Peak Period at Flight Time			**96%**
Peak Period Processor Capacity at Flight Time			**6,315**

SOURCE: daa; Ricondo analysis, **October 2023**.

TABLE A-7.B: 2026 TERMINAL 1 EXISTING BAGGAGE RECLAIM CAPACITY.

PROCESS	PASSENGERS	BAGS	LIMITING CAPACITY	NOTES
Capacity All Devices	790	740		See Table B-7.C, Note 1
Average Passenger with Bags and Bags per ATM	56	76		
Average Flights Accommodated Across All Devices Simultaneously	14.3	9.7		See Table B-7.C, Note 2
Average Time to Clear from First Bag Delivery (mins)	15	15		
Average Flights That Can be Accommodated on All Devices	4	4		See Table B-7.C, Note 3
Flights That Can Be Accommodated in a Peak Hour	56	39		See Table B-7.C, Note 4
Average Total Passengers per Flight	138	138		
Total Peak Hour Passenger Capacity	**7,780**	**5,370**	**5,370**	
Processor Presentation Percentage of Peak Period at Flight Time			**96%**	
Peak Period Processor Capacity at Flight Time			**5,575**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-7.C: 2023 TO 2026 CHANGES - TERMINAL 1 BAGGAGE RECLAIM

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Demand Profile	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Existing vs. Baseline	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.

SOURCE: daa; Ricondo analysis, **June 2026**.

A.1.2.3 ARRIVALS HALL

Passengers proceed through the baggage reclaim hall, collect any checked baggage, and exit through customs screening to the Terminal 1 landside arrivals hall.

Peak Period Capacity Assessment

The arrivals hall capacity is calculated using the IATA ADRM methodology. **Table A-8** provides a summary of the methodology for the critical peak period duration. The Terminal 1 arrivals hall can accommodate up to 6,350 presenting passengers per hour, and **6,615 peak hour passengers** at scheduled flight time.

TABLE A-8: 2026 EFFECTIVE PEAK PERIOD TERMINAL 1 ARRIVALS HALL CAPACITY[1/]

	VALUES
Effective Holding Capacity	
Area of Arrivals Hall (m^2)	3,175.0
Percent Effective Area Utilization for Dwell	50%
Effective Area	1,587.5
Seating Ratio	20%
Area Per Seated Person (m^2)	2.0
Area Per Standing Person (m^2)	2.0
Holding Capacity	**794**
Dwell Time Per Pax (minutes)	5.2
Dwell Time per Visitor (minutes)	43
Visitors Per Passenger	0.054
Available Critical Peak Period Capacity	**6,350**
Processor Presentation Percentage of Peak Period at Flight Time	**96%**
Peak Period Processor Capacity at Flight Time	**6,615**

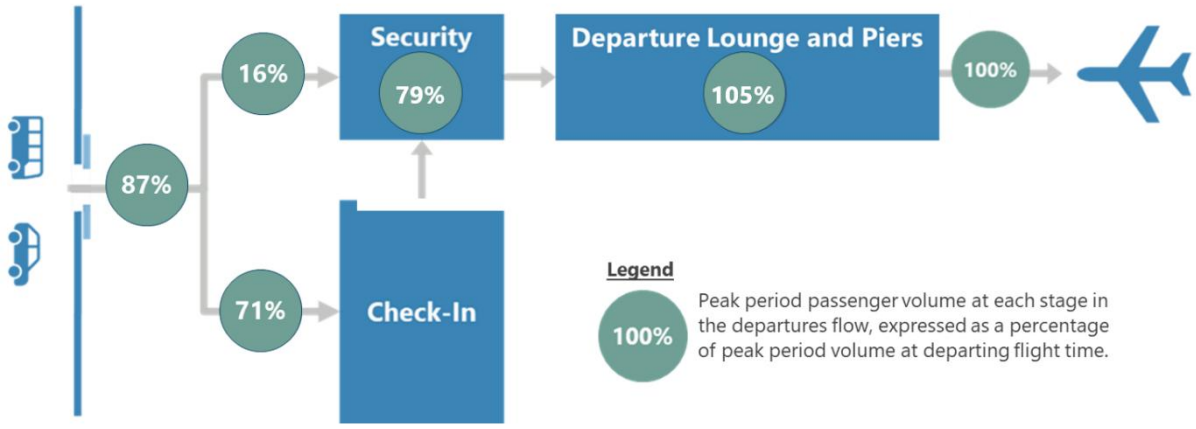
SOURCE: daa; Ricondo analysis, **June 2026.**
NOTES: 1/ No change from 2023 to 2026.

A.1.3 TERMINAL 2 DEPARTURES

Terminal 2 Departures is located on the ground floor and Level 2 of the building. The process flow, which is illustrated in **Exhibit A-4**, begins with passengers entering the terminal building from the ground floor drop-off kerbs, and car park. Departing passengers who originate their journey at Dublin Airport arrive at the terminal over an approximately three-hour period prior to flight departure time. **Exhibit A-5** illustrates the process flow for passengers departing directly to the U.S, which begins with passengers entering the TSA Screening facility from the Terminal 2 Departure Lounge.

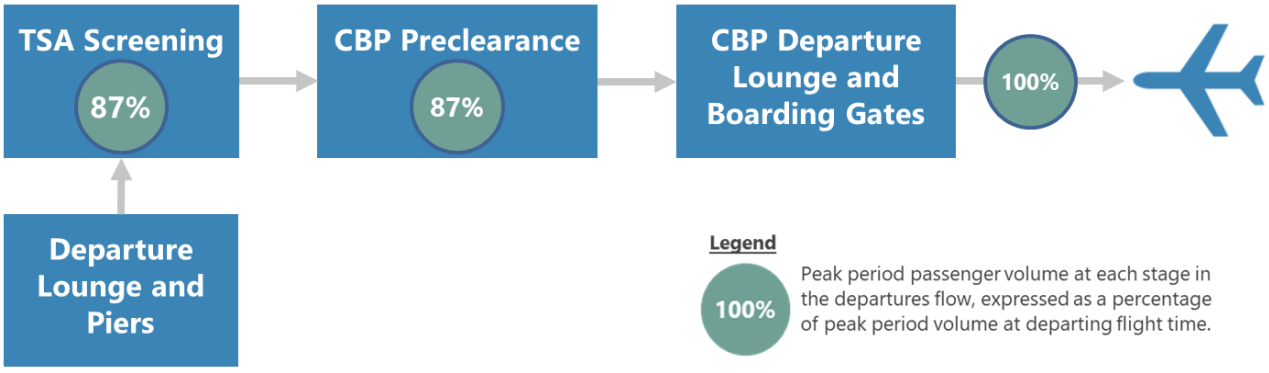
Dublin Airport operational data shows that the peak terminal entry volume is 87% of the peak passenger volume at flight departure time.

EXHIBIT A-4: TERMINAL 2 DEPARTURES FLOW



SOURCE: Ricondo, **June 2026**.

EXHIBIT A-5: TERMINAL 2 CBP FLOW



SOURCE: Ricondo, **June 2026**.

A.1.3.1 CHECK-IN

Departing passengers enter Terminal 2 from the ground transportation facilities via the departures level forecourt or the arrivals bridge from the Terminal 2 car park. Passengers with carry-on bags and mobile or pre-

printed boarding passes continue directly to the security screening area. All other passengers proceed to the check-in area to collect boarding passes and drop-off baggage.

Passenger Presentation Profile

As illustrated in **Exhibit A-4**, a peak presentation volume equivalent to 87% of the Terminal 2 peak departing passenger volume at flight time enters the terminal building from the ground transportation facilities, of which 16% continues directly to security and 71% proceeds to check-in. Passenger show-up characteristics and flow distribution result in a **peak check-in presentation volume equivalent to 71%** of the peak departing passenger volume at flight time.

Configuration and Equipment

The Terminal 2 check-in area is divided into two sections, the Aer Lingus check in facility in the west end of the hall, and US airlines and other airline check-in areas in the east end of the hall.

The Aer Lingus west hall shoreline check-in area has a total of 28 desks operated as a mix of conventional check-in desks, self bag drop desks and premium/business class check-in desks. The check-in area also includes self-service kiosk and bag weighing machines for Aer Lingus passengers for self check-in and bag tag printing.

The east hall shoreline check-in area has twenty-six conventional check-in desks allocated on a common-use basis between the multiple airlines that use this area. The area also accommodates airline and common use kiosks for OAL passengers.

Other Operational Characteristics

The policies governing allocation of check-in facilities to individual airlines have an important role in determining the effective capacity of the available facilities. Common-use allocation rules assign check-in positions to airlines for fixed durations, usually three hours, in advance of departure times based on number of flights and aircraft seating size.

Allocation of check-in positions to multiple airlines with a range of upcoming flight departure times results in uneven distribution of passengers among the available desks – at any point in time some of the positions are very busy and some are quiet. This results in a lower effective capacity for the allocated positions than the theoretical processing capacity of all the allocated units.

The current average passenger processing times in Terminal 2 are 133 seconds per passenger for full-service check-in and 45 seconds per passenger for the Aer Lingus bag-drop positions.

Peak Period Capacity Assessment

The IATA ADRM methodology was utilised to establish the maximum throughput capacity of the Terminal 1 check-in facilities. The assessment determined that the critical peak period duration is 60 minutes.

Tables A-9.A and **A-9.B** provide a summary of the methodology for the critical peak period duration in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-9.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-9.B** indicates the Terminal 2 check-in processes can accommodate up to 2,530 presenting passengers per hour, equivalent to **3,560 peak hour passengers** at scheduled flight time.

TABLE A-9.A: 2023 TERMINAL 2 EFFECTIVE PEAK PERIOD CHECK-IN CAPACITY

	AGENT POSITIONS	BAG-DROP	TOTAL CAPACITY
Effective Processing Capacity			
Number of Positions	53	17	
Average Passenger Processing Time per Position (seconds)	133	45	
Critical Peak Period Duration (minutes)	60	60	
Effective Peak Period Processing Capacity (passengers)	**1,435**	**1,360**	**2,795**
Effective Queue Capacity			
Effective MQT (minutes)	15	5	
Effective Queue Capacity at MQT	360	115	
Available Critical Peak Period Capacity	**1,795**	**1,475**	**3,270**
Processor Presentation Percentage of Peak Period at Flight Time			**71%**
Peak Period Processor Capacity at Flight Time			**4,605**

SOURCE: daa; Ricondo analysis, **October 2023**.

TABLE A-9.B: 2026 TERMINAL 2 EFFECTIVE PEAK PERIOD CHECK-IN CAPACITY

	AGENT POSITIONS	BAG-DROP	TOTAL CAPACITY	NOTES
Effective Processing Capacity				
Number of Positions	44	12		See Table B-9.C, Note 1
Average Passenger Processing Time per Position (seconds)	133	45		
Critical Peak Period Duration (minutes)	60	60		
Effective Peak Period Processing Capacity (passengers)	**1,191**	**960**	**2,151**	
Effective Queue Capacity				
Effective MQT (minutes)	15	5		
Effective Queue Capacity at MQT	298	80		See Table B-9.C, Note 2
Available Critical Peak Period Capacity	**1,490**	**1,040**	**2,530**	
Processor Presentation Percentage of Peak Period at Flight Time			**71%**	
Peak Period Processor Capacity at Flight Time			**3,560**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-9.C: 2023 TO 2026 CHANGES - TERMINAL 2 CHECK-IN CAPACITY

CATEGORY		CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
	**Equipment, Technology and Process Improvements**	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
	**Demand Profile**	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
	**Existing vs. Baseline**	Note 1: The 2023 Base Capacity assumed a planned operational reconfiguration within the footprint of the Terminal 2 check-in facility. The planned reconfiguration has not yet been implemented. The 2026 Existing Capacity reflects the existing configuration, available positions and queue area.

SOURCE: daa; Ricondo analysis, **June 2026**.

A.1.3.2 SECURITY SCREENING

The security screening checkpoints include two processing steps – a boarding pass check to confirm eligibility to enter the airside, followed by the search process.

Passenger Presentation Profile

As illustrated in **Exhibit A-4**, a peak volume equivalent to 87% of the Terminal 2 peak departing passenger volume at flight time enters the terminal building from the ground transportation facilities, of which 16% continues directly to security and 71% proceeds to check-in. The check-in passengers recombine with the direct to security passengers, resulting in a **peak security presentation volume equivalent to 87%** of the peak departing passenger volume at flight time.

Configuration and Equipment

The boarding pass screening process has been reconfigured within the existing security level footprint and is equipped with six autopass screening devices, including the fast-track devices.

Following boarding pass inspection, the search process has been reconfigured and re-equipped within the existing security level footprint. The process screen passengers and cabin baggage through sixteen security lanes, including the fast-track lanes. Each lane is equipped with a C3 baggage scanner, secondary screening areas, pre-scanning divest area and a bag retrieval and recompose area.

The search process is configured with a single scanner for individual passenger screening for every two baggage screening lanes. The passenger screening devices have a higher capacity than the baggage screening process and do not limit lane capacity.

Passenger Processing Characteristics

The automated boarding pass screening is a quick, simple process that is incorporated into the queuing area prior to the search process. On average each automated boarding pass scan device can process a passenger every 6 seconds.

Security screening processing rates in the immediate post-deployment period are assumed to be 225 passengers per hour for the 2026 Existing Capacity assessment.

Other Operational Characteristics

The IATA ADRM recommends a range of contingency and resilience considerations for passenger and baggage security screening systems and equipment. The capacity assessment excludes security lanes reserved for operational contingencies. Total available inventory for normal operations is sixteen lanes.

Peak Period Capacity Assessment

Tables A-10.A and **A-10.B** provide a summary of the capacity of the planned future Terminal 2 autopass screening process in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-10.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-10.B** indicates the Terminal 2 autopass screening process can accommodate up to 3,900 presenting passengers per hour, equivalent to **4,485 peak hour passengers** at scheduled flight time.

Tables A-11.A and **A-11.B** provide a summary of the capacity of the improved security screening area in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-11.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-11.B** indicates the Terminal 2 security screening area can accommodate up to 3,365 presenting passengers per hour, equivalent to **4,640 peak hour passengers** at scheduled flight time.

TABLE A-10.A: 2023 TERMINAL 2 IMPROVED AUTOPASS PEAK PERIOD CAPACITY

	AUTOPASS SCREENING	TOTAL CAPACITY
Effective Processing Capacity		
Number of Positions	10	
Average Passenger Processing Time per Position (seconds)	10	
Critical Peak Period Duration (minutes)	60	
Effective Peak Period Processing Capacity (passengers)		**3,600**
Effective Queue Capacity		
Available Queue Area (square metres)	**330**	
Effective MQT (minutes)	5	
Effective Queue Capacity at MQT		300
AVAILABLE CRITICAL PEAK PERIOD CAPACITY		**3,900**
Processor Presentation Percentage of Peak Period at Flight Time		**87%**
Peak Period Processor Capacity at Flight Time		**4,485**

SOURCE: daa; Ricondo analysis, **February 2023.**

TABLE A-10.B: 2026 TERMINAL 2 IMPROVED AUTOPASS PEAK PERIOD CAPACITY

	AUTOPASS SCREENING	TOTAL CAPACITY	NOTES
Effective Processing Capacity			
Number of Positions	6		See Table B-10.C, Note 1
Average Passenger Processing Time per Position (seconds)	6		See Table B-10.C, Note 2
Critical Peak Period Duration (minutes)	60		
Effective Peak Period Processing Capacity (passengers)		**3,600**	
Effective Queue Capacity			
Available Queue Area (square metres)	**330**		
Effective MQT (minutes)	5		
Effective Queue Capacity at MQT		300	
AVAILABLE CRITICAL PEAK PERIOD CAPACITY		**3,900**	
Processor Presentation Percentage of Peak Period at Flight Time		**87%**	
Peak Period Processor Capacity at Flight Time		**4,485**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-10.C: 2023 TO 2026 CHANGES - TERMINAL 2 BOARDING PASS SCAN

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	Note 1: Number of boarding pass scan units deployed at Terminal 1 Central Search has changed. No change to overall throughput due to reduction in average processing time per passenger. Note 2: Updated boarding pass scan equipment process passengers faster than the 2023 equipment, increasing average throughput per unit.
Demand Profile	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Existing vs. Baseline	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-11.A: 2023 TERMINAL 2 IMPROVED SECURITY PEAK PERIOD CAPACITY

	SECURITY SCREENING	TOTAL CAPACITY
Effective Processing Capacity		
Number of Positions Available, Excluding Resilience	11	
Average Passenger Processing Time per Position (seconds)	12	
Critical Peak Period Duration (minutes)	60	
Efficiency Factor	95%	
Effective Peak Period Processing Capacity (passengers)		**3,120**
Effective Queue Capacity		
Available Queue Area (square metres)	286	
Effective MQT (minutes)	5	
Effective Queue Capacity at MQT		260
AVAILABLE CRITICAL PEAK PERIOD CAPACITY		**3,380**
Processor Presentation Percentage of Peak Period at Flight Time		**87%**
Peak Period Processor Capacity at Flight Time		**3,885**

SOURCE: daa; Ricondo analysis, **February 2023.**

TABLE A-11.B: 2026 TERMINAL 2 IMPROVED SECURITY PEAK PERIOD CAPACITY

	SECURITY SCREENING	TOTAL CAPACITY	NOTES
Effective Processing Capacity			
Number of Positions Available, Excluding Resilience	16		See Table B-11.C, Note 1,2
Average Passenger Processing Time per Position (seconds)	16		See Table B-11.C, Note 1,2
Critical Peak Period Duration (minutes)	60		
Efficiency Factor	95%		
Effective Peak Period Processing Capacity (passengers)		**3,420**	
Effective Queue Capacity			
Available Queue Area (square metres)	286		
Effective MQT (minutes)	4.3		
Effective Queue Capacity at MQT		245	
AVAILABLE CRITICAL PEAK PERIOD CAPACITY		**3,665**	
Processor Presentation Percentage of Peak Period at Flight Time		**79%**	
Peak Period Processor Capacity at Flight Time		**4,640**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-11.C: 2023 TO 2026 CHANGES - TERMINAL 2 SECURITY

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	Note 1: new C3 cabin baggage screening equipment and additional screening positions have been deployed in Terminal 1 Central Search, reducing the average processing time per passenger and increasing throughput per position.
Demand Profile	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Existing vs. Baseline	Note 2: The 2023 Base Capacity assumed C3 equipment deployment within the footprint of the Terminal 2 central search facility. The equipment deployment and position additions have been implemented. The 2026 Existing Capacity reflects average processing times during the immediate post-deployment period.

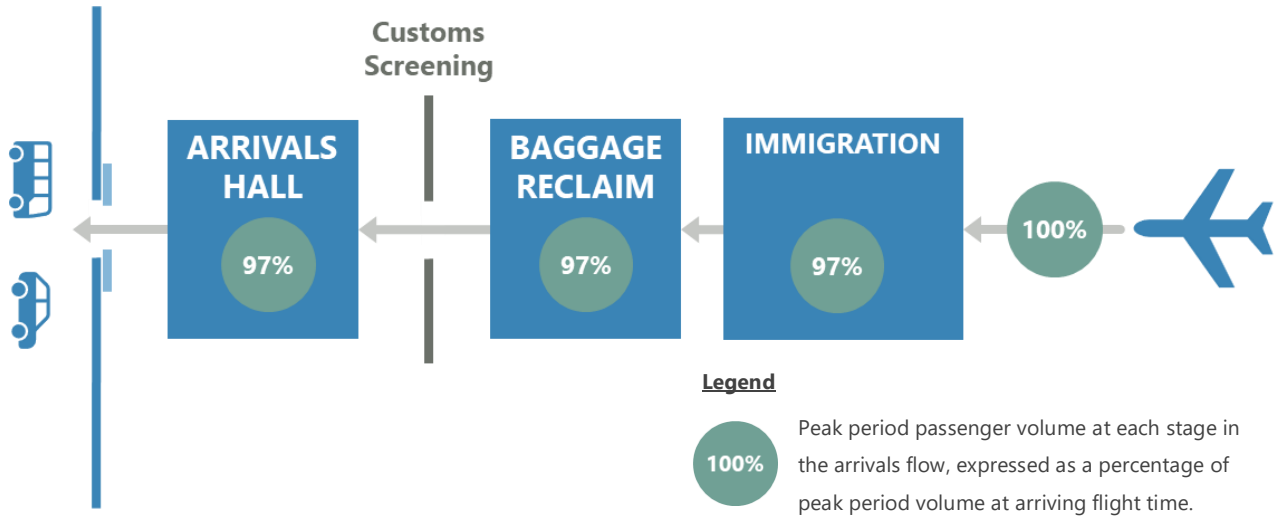
SOURCE: daa; Ricondo analysis, **June 2026**.

A.1.4 TERMINAL 2 ARRIVALS

Terminal 2 Arrivals is located on Level 2 of the building. The process flow, which is illustrated in **Exhibit A-6**, begins with passengers entering a sterile corridor via the arrival gate and proceeding to the Terminal 2 immigration hall.

Following completion of immigration processing, passengers enter the baggage reclaim hall, collect any checked baggage, and exit through customs screening to the landside arrivals hall.

EXHIBIT A-6: TERMINAL 2 ARRIVALS FLOW



SOURCE: Ricondo, **June 2026**.

A.1.4.1 IMMIGRATION PROCESSING

Passengers arriving at Terminal 2 are all processed at the immigration hall inside the Terminal 2 building.

Passenger Presentation Profile

As illustrated in **Exhibit A-5**, a **peak presentation volume equivalent to 97%** of the Terminal 1 peak arriving passenger volume at flight arrival time enter the terminal building via sterile corridors connected to arrival gates.

Configuration and Equipment

The Terminal 2 immigration hall is utilised by all of the Terminal 2 operators, serving a wide range of destinations including the UK, EU, North America, and the Middle East. Passengers access the immigration hall and enter the queue for either the staffed immigration desks or E-Gates facilities depending on eligibility and choice. The facility has twelve staffed immigration desks and 10 E-Gate positions.

Passenger Processing Characteristics

During the most demanding peak period the weighted average processing time for EU, Non-EU and North American passengers at the immigration booths is 33 seconds per passenger.

Peak Period Capacity Assessment

The IATA ADRM methodology was utilised to establish the maximum throughput capacity of the Terminal 2 arrival immigration facilities. The assessment determined that the critical peak period duration is 60 minutes.

In addition to the process flow capacity, the available queue space in the immigration halls was assessed to ensure the target queue time can be accommodated in the queue area. Both facilities have sufficient queue space available to accommodate queue volumes at the target level-of-service.

Tables A-12.A and **A-12.B** provide a summary of the IATA ADRM methodology for the critical peak period duration in the 2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-12.C** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-12.B** indicates the Terminal 2 immigration processes can accommodate up to 3,170 presenting passengers per hour, equivalent to **3,265 peak hour passengers** at scheduled flight time.

TABLE A-12.A: 2023 TERMINAL 2 EFFECTIVE PEAK PERIOD IMMIGRATION CAPACITY

	BOOTH POSITIONS	E-GATES	TOTAL CAPACITY
Effective Processing Capacity			
Number of Positions	12	10	
Average Passenger Processing Time per Position (seconds)	32.7	24.0	
Critical Peak Period Duration (minutes)	60	60	
Effective Peak Period Processing Capacity (passengers)	**1,320**	**1,500**	
Effective Queue Capacity			
Effective MQT (minutes)	10	5	
Effective Queue Capacity at MQT	220	125	
Queue Area Required at MQT (1.3m^2 per pax)	**286**	**163**	**449**
Queue Area Available			580
Available Critical Peak Period Capacity	**1,606**	**1,663**	**3,270**
Processor Presentation Percentage of Peak Period at Flight Time			**97%**
Peak Period Processor Capacity at Flight Time			**3,370**

SOURCE: daa; Ricondo analysis, **February 2023.**

TABLE A-12.B: 2026 TERMINAL 2 EFFECTIVE PEAK PERIOD IMMIGRATION CAPACITY

	BOOTH POSITIONS	E-GATES	TOTAL CAPACITY	NOTES
Effective Processing Capacity				
Number of Positions	12	10		
Average Passenger Processing Time per Position (seconds)	32.7	24.0		
Critical Peak Period Duration (minutes)	60	60		
Effective Peak Period Processing Capacity (passengers)	**1,320**	**1,500**		
Effective Queue Capacity				
Effective MQT (minutes)	10	5		
Effective Queue Capacity at MQT	220	125		
Queue Area Required at MQT (1.3m^2 per pax)	**286**	**163**	**449**	
Queue Area Available			580	
Available Critical Peak Period Capacity	**1,545**	**1,625**	**3,170**	2023 calculation error corrected
Processor Presentation Percentage of Peak Period at Flight Time			**97%**	
Peak Period Processor Capacity at Flight Time			**3,265**	

SOURCE: daa; Ricondo analysis, **June 2026**.

TABLE A-12.C: 2023 TO 2026 CHANGES - TERMINAL 2 IMMIGRATION

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Demand Profile	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Existing vs. Baseline	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.

SOURCE: daa; Ricondo analysis, **June 2026**.

A.1.4.2 BAGGAGE RECLAIM

The baggage reclaim hall capacity assessment uses a methodology developed from the IATA ADRM 12th edition approach, evaluating the total baggage reclaim device length available and the accumulation space available for passengers.

Historical averages for passengers with bags and bags per flight from airport operational records are used to calculate the number of flights that can be accommodated in the hall at one time. The average length of allocation time per flight and corresponding number of arrivals that can be accommodated per hour establishes the number of flights that can be handled in the peak hour.

Peak Period Capacity Assessment

Table A-13 provides a summary of the methodology for the critical peak period duration. The Terminal 1 baggage reclaim hall devices can accommodate up to 2,904 presenting passengers per hour limited by the belt length, and **2,995 peak hour passengers** at scheduled flight time.

TABLE A-13: 2026 TERMINAL 1 BAGGAGE RECLAIM CAPACITY[1/]

PROCESS	PASSENGERS	BAGS	LIMITING CAPACITY
Capacity All Devices	1,517	572	
Average Pax and Bags per ATM	75	95	
Average Flights accommodated on all devices	20	6	
Average time to clear from first bag delivery (mins)	15	15	
Average no. of flights that can be accommodated on all devices	4	4	
No. of flights that can be accommodated in a peak hour	81	24	
Average total passengers per flight	120	120	
Total peak hour passenger capacity ==>	**9,773**	**2,904**	**2,904**
		Processor Presentation Percentage of Peak Period at Flight Time	**97%**
		Peak Period Processor Capacity at Flight Time	**2,995**

SOURCE: daa; Ricondo analysis, **June 2026.**
NOTES: 1/ No change from 2023 to 2026.

A.1.4.3 ARRIVALS HALL

Passengers proceed through the baggage reclaim hall, collect any checked baggage, and exit through customs screening to the Terminal 2 landside arrivals hall.

Peak Period Capacity Assessment

The arrivals hall capacity is calculated using the IATA ADRM methodology. **Table A-14** provides a summary of the methodology for the critical peak period duration. The Terminal 1 arrivals hall can accommodate up to 6,335 presenting passengers per hour, and **6,530 peak hour passengers** at scheduled flight time.

TABLE A-14: 2026 EFFECTIVE PEAK PERIOD TERMINAL 2 ARRIVALS HALL CAPACITY[1/]

	VALUES
Effective Holding Capacity	
Area of Arrivals Hall (m^2)	3,488.0
Percent Effective Position Utilization	50%
Effective Area	1,744.0
Seating Ratio	20%
Area Per Seated Person (m^2)	2.0
Area Per Standing Person (m^2)	2.0
Holding Capacity	872
Dwell Time Per Pax (minutes)	5.2
Dwell Time per Visitor (minutes)	54.67
Visitors Per Passenger	0.056
Available Critical Peak Period Capacity	**6,335**
Processor Presentation Percentage of Peak Period at Flight Time	**97%**
Peak Period Processor Capacity at Flight Time	**6,530**

SOURCE: daa; Ricondo analysis, **June 2026.**
NOTES:
1/ No change from 2023 to 2026.

A.2 TERMINAL AND PIER DEPARTURE AND GATE LOUNGE FACILITIES

Post-security passenger dwell facilities including the terminal departure lounge areas, a mix of duty free, travel retail, food & beverage, airline clubs, and seating areas; and pier gate lounge areas, including travel retail, food & beverage, seating areas and pre-boarding areas at individual gates.

A.2.1 FACILITIES UTILISED BY TERMINAL 1 PASSENGERS

Originating passengers flow from the security screening checkpoint to the Terminal 1 departures lounge area.

Passenger Presentation Profile

As illustrated in **Exhibit A-2**, the **peak post-security accumulation volume is equivalent to 99%** of the Terminal 1 peak departing passenger volume at flight time.

Functional Configuration

Post-security, pre-boarding space accommodates a mix of functions within the Terminal 1 departures lounge and in the connected pier facilities. The Terminal 1 departures lounge provides a mix of duty free, travel retail, and food and beverage services, integrated with waiting areas and other passenger amenities. The existing Terminal 1 departures lounge area has a total gross floor area (GFA) of 10,597 square metres of passenger accessible space, excluding back-of-house storage and support facilities.

The accessible areas in Piers 1, 2 and 3 provide a further 6,312 square meters of duty free, retail and gate lounge space for passengers to wait for boarding.

Space Utilisation Characteristics

The capacity assessment process applies an optimal occupancy density for the major space categories – retail, food and beverage, waiting areas, and circulation – which corresponds to the unit capacity of each type of space to accommodate passengers at an acceptable level-of-service. The occupancy densities vary based on the function of each category and all exceed the minimum IATA ADRM standards for optimal occupancy levels.

The capacity of the departures lounge to accommodate passengers is determined by the total GFA of each space category and the corresponding occupancy density (GFA per passenger). **Table A-15** details GFA and occupancy density for each of the major space categories and the resulting occupancy capacity of the Terminal 1 departures lounge.

Peak Period Capacity Assessment

Table A-15 provides a summary of the IATA ADRM methodology for the peak population in the departures area. The Terminal 1 departures area can accommodate up to 6,255 passengers, equivalent to **6,320 peak hour passengers** at scheduled flight time.

TABLE A-15: 2026 TERMINAL 1 DEPARTURE LOUNGE AND PIER DWELL CAPACITY[1/]

SPACE CATEGORY		EXISTING GFA (SQUARE METRES)	OCCUPANCY DENSITY (SQUARE METRES PER PASSENGER)	MAXIMUM OCCUPANCY (PASSENGERS)
Duty Free and Other Retail		4,035	4.5	897
Food and Beverage		2,623	3.5	749
Waiting Areas		255	2.0	128
Circulation		3,684	2.0	1,842
Pier 1	Duty Free & Retail	210	4.5	47
	Holdrooms	2,099	2.0	1,050
Pier 2	Duty Free & Retail	106	4.5	24
	Holdrooms	2,169	2.0	1,085
Pier 3	Duty Free & Retail	1,542	4.5	343
	Holdrooms	186	2.0	93
AVAILABLE PEAK PERIOD OCCUPANCY CAPACITY		**16,909**	**2.7**	**6,255**
			Processor Presentation Percentage of Peak Period at Flight Time	**99%**
			Peak Period Processor Capacity at Flight Time	**6,320**

SOURCE: daa; Ricondo analysis, **June 2026**.
NOTES: No change from 2023 to 2026.

A.2.2 FACILITIES UTILISED BY TERMINAL 2 PASSENGERS

Passenger Presentation Profile

As illustrated in **Exhibit A-4**, the **peak post-security accumulation volume is equivalent to 105%** of the Terminal 2 peak departing passenger volume at flight time. Terminal 2 accumulates a higher volume of passengers in the post-security departures facilities relative to the peak departing passenger volume onboard aircraft during the peak departure hour due to extended show-up profiles for a higher proportion of long-haul departures and the timing of transfer passenger arrivals prior to the departures peak.

Functional Configuration

Originating passengers flow from the security screening checkpoint to the Terminal 2 departures lounge area, which provides a mix of duty-free, travel retail, and food and beverage services, integrated with waiting areas and other passenger amenities. The existing Terminal 2 departures lounge area has a total gross floor area (GFA) of 9,878 square metres of passenger accessible space, excluding back-of-house storage and support facilities.

The Pier 4 areas are also included, adding an additional 3,002 square meters of passenger accumulation space.

The capacity assessment process applies an optimal occupancy density for the major space categories – Retail, Food and Beverage, Waiting Areas, and Circulation – which corresponds to the unit capacity of each type of space to accommodate passengers at an acceptable level-of-service. The occupancy densities vary based on the function of each category and all exceed the minimum IATA ADRM standards for optimal occupancy levels.

The capacity of the departures lounge to accommodate passengers is determined by the total GFA of each space category and the corresponding occupancy density (GFA per passenger). **Table A-16** details GFA and occupancy density for each of the major space categories and the resulting occupancy capacity of the Terminal 2 departures lounge.

Peak Period Capacity Assessment

Table A-16 provides a summary of the IATA ADRM methodology for the peak population in the departures area. The Terminal 2 departures area can accommodate up to 4,940 passengers per hour, equivalent to **4,990 peak hour passengers** at scheduled flight time.

TABLE A-16: 2026 TERMINAL 2 DEPARTURE LOUNGE CAPACITY[1/]

SPACE CATEGORY		EXISTING GFA (SQUARE METRES)	OCCUPANCY DENSITY (SQUARE METRES PER PASSENGER)	MAXIMUM OCCUPANCY (PASSENGERS)
Duty Free and Other Retail		3,557	4.5	790
Food and Beverage		2,017	3.5	576
Waiting Areas		518	2.0	259
Circulation		3,786	2.0	1,893
Pier 4 Level 1	Duty Free & Retail	232	4.5	52
	Food and Beverage	70	3.5	20
	Holdrooms	2,700	2.0	1,350
AVAILABLE PEAK PERIOD OCCUPANCY CAPACITY		**12,880**	**2.6**	**4,940**
		Processor Presentation Percentage of Peak Period at Flight Time		**105%**
		Peak Period Processor Capacity at Flight Time		**4,705**

SOURCE: daa; Ricondo analysis, **June 2026**.
NOTES: No change from 2023 to 2026.

A.3 PASSENGER BOARDING GATES

Passenger boarding facilities are provided to assemble passengers prior to accessing the aircraft via a boarding gate. To enable on time departure of flights, airlines call passengers to assemble at the gates ahead of departure so that when the aircraft is ready for boarding, the aircraft can be loaded quickly and efficiently.

Passenger boarding gates are categorised into the following groups:

- Contact gates – direct connection for aircraft boarding and deplaning via an airbridge.
- Contact US CBP preclearance gate – a contact gate serving the segregated US CBP precleared area.
- Walkout gate – a gate with direct access to the apron and marshalled access to aircraft via stairs.
- Remote bus gate – a gate where passengers board a bus to be transported to the departure aircraft.

The current passenger boarding gate inventory is shown in **Table A-17**. **Table A-18.A** presents the estimated capacity of the existing gate inventory, assuming 0% contingency available for redundancy and resilience in the

2023 Baseline Capacity assessment and the 2026 Existing Capacity assessment, respectively. **Table A-18.B** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in **Table A-18.A** indicates the boarding gates can accommodate up to 137,000 busy day passengers, equivalent to **40.5 MPPA**.

TABLE A-17: 2026 PASSENGER BOARDING GATES [1/]

AREA	APRON	TYPE	NARROWBODY EQUIVALENT GATES
North	Pier 1	Remote	1
		Walkout	15
Terminal	Pier 2	Remote	2
		Walkout	8
	OCTB	Walkout	1
	Pier 3	Walkout	1
		Contact	7
	Pier C	Remote	4
South	Pier 4	Contact US CBP	15
		Contact	4
	South Apron	Remote	5
		Total	**63**

SOURCE: daa; Ricondo analysis, **June 2026**.
NOTES:
1/ No change from 2023 to 2026.

TABLE A-18.A: 2026 PASSENGER BOARDING GATES CAPACITY CALCULATION

CATEGORY	2023 BASELINE	2026 EXISTING	NOTES
AVAILABLE GATES			
Gate Inventory	63	63	
Operational Reserve	0	0	
Available Operational Gates	**63**	**63**	
BUSY DAY AIRCRAFT MOVEMENT CAPACITY			
Aircraft Movements per Gate	13.6	13.6	
Busy Day Aircraft Movements Capacity	**857**	**857**	
BUSY DAY PASSENGER CAPACITY			
Average Aircraft Seat Size	165	170	Aircraft operating at the airport increased in size from 2019 to 2025
Average Load Factor	90%	94%	The average percentage of aircraft seats filled increased from 2019 to 2025
Average Passengers per Aircraft Movement	149	160	Larger aircraft and higher load factors increased average passengers per aircraft from 2019 to 2025
Busy Day Passengers	**127,000**	**137,000**	
ANNUAL PASSENGER CAPACITY			
Busy Day Passengers per MPPA[1/]	3,500	3,400	Passenger volumes were slightly higher during non-busy days in 2025 compared to 2019
Annual Passenger Capacity	**36.5 MPPA**	**40.5 MPPA**	

SOURCE: daa; Ricondo analysis, **June 2026**.
NOTES:
1/ MPPA = million passengers per annum

TABLE A-18.B: 2023 TO 2026 CHANGES - BOARDING GATES

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Demand Profile	Aircraft movement capacity remains the same. Average passengers per aircraft movement has increased. The number of seats per aircraft and load factor during a busy day at Dublin Airport has increased since 2019, the last year of the dataset analysed in the 2023 Capacity Report.
Existing vs. Baseline	No. change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.

SOURCE: daa; Ricondo analysis, **June 2026**.

A.4 AIRCRAFT STANDS

Aircraft stands are required to park aircraft when they arrive at the airport. Operational stands are categorised into the following groups:

- Contact stands – adjacent to pier facilities and served by an airbridge.
- Contact preclearance capable – contact stands that connect to the US CBP segregated precleared area.
- Walkout stands – stands adjacent to pier facilities with pedestrian access from the building to the apron and marshalled access to the aircraft via stairs.
- Remote stands – stands not adjacent to pier facilities and served by bus from a remote boarding lounge.
- Inactive stands – stands not used for active operations, primarily utilised for long-ground time aircraft.
- Cargo stands – stands that are used by freighter aircraft, with access to specialised cargo loading equipment.

In addition to the operational stands, it is typical to provide several contingency stands for based carrier standby aircraft, for eventualities related to schedule disruption, and for performing unscheduled maintenance.

Table A-19 provides an inventory of available aircraft stands. **Table A-20.A** presents the Dublin Airport aircraft stands capacity assessment. The table presents the updated 2026 capacity calculation alongside the corresponding 2023 Capacity Report calculation. **Table A-20.B** summarizes the differences between the 2023 and 2026 data.

The 2026 Existing Capacity assessment detailed in Table **A-20.A** indicates the aircraft stands can accommodate up to 139,000 busy day passengers, equivalent to **41.0 MPPA**.

TABLE A-19: 2026 AIRCRAFT STANDS[1/]

AREA	APRON	STAND TYPE	NARROWBODY EQUIVALENT STANDS (NBES)
North	Hangars	Remote	3
	Pier 1	Remote	3
		Walkout	20
	Apron 5G	Remote	15
	Apron 5H	Remote	12
Terminal	Island	Remote	5
	Pier 2	Walkout	9
	OCTB	Walkout	1
	Pier 3	Walkout	3
		Contact	8
South	Pier 4	Contact US CBP	15
		Contact	4
	South Apron	Remote	9
West	West Apron	Inactive / Cargo	24
		Total	**131**

SOURCE: daa; Ricondo analysis, **June 2026**.
NOTE: 1/ No change from 2023 to 2026.

TABLE A-20.A: 2026 AIRCRAFT STANDS CAPACITY CALCULATION

CATEGORY	2023 BASELINE	2026 EXISTING	NOTES
AVAILABLE STANDS			
Stand Inventory (NBE)[1/]	131	131	Apron 5H was included as an approved project in the 2023 Baseline and has since been completed
Standby; Reserve; Resilience (NBE)	-10	-10	
Available Operational Stands (NBE)	**121**	**121**	
BUSY DAY AIRCRAFT MOVEMENT CAPACITY			
Average Aircraft Movements per Stand	7.2	7.2	
Busy Day Aircraft Movements	**871**	**871**	
BUSY DAY PASSENGER CAPACITY			
Average Aircraft Seat Size	165	170	Aircraft operating at the airport increased in size from 2019 to 2025
Average Load Factor	90%	94%	The average percentage of aircraft seats filled increased from 2019 to 2025
Average Passengers per Aircraft Movement	149	160	Larger aircraft and higher load factors increased average passengers per aircraft from 2019 to 2025
Busy Day Passengers	**129,500**	**139,000**	
ANNUAL PASSENGER CAPACITY			
Busy Day Passengers per MPPA[2/]	3,500	3,400	Passenger volumes were slightly higher during non-busy days in 2025 compared to 2019
Annual Passenger Capacity	**37.0 MPPA**	**41.0 MPPA**	

SOURCE: daa; Ricondo analysis, **June 2026**.
NOTES:
1/ NBE = narrowbody equivalent aircraft, 2/ MPPA = million passengers per annum

TABLE A-20.B: 2023 TO 2026 CHANGES - AIRCRAFT STANDS

CATEGORY	CHANGES FROM THE 2023 TO 2026 CAPACITY ASSESSMENTS
Equipment, Technology and Process Improvements	No change from the 2023 Capacity Assessment to the 2026 Capacity Assessment for this category.
Demand Profile	Aircraft movement capacity remains the same. Average passengers per aircraft movement have increased. The number of seats per aircraft and load factor during a busy day at Dublin Airport has increased since 2019, the last year of the dataset analysed in the 2023 Capacity Report.
Existing vs. Baseline	No. change. The 2023 Capacity Report included the then planned future Apron 5H in the baseline capacity. The 12 aircraft stands of Apron 5H have since been completed and are included in the 2026 Capacity Report.

SOURCE: daa; Ricondo analysis, June 2026

APPENDIX B SUPPORTING TECHNICAL INFORMATION

B.1 UNIT PROCESSOR CAPACITY APPROACH

The IATA ADRM 12th Edition proposes an approach based on a static assessment of the most constraining of five different peak period demand levels: The peak 15-, 30-, 60-, 120-and 240-minute periods.

These five demand levels are tested against the processing rate and queue time to provide five facility requirement figures, the worst case of which should then be used as the facility requirement.

The facility requirement formula used is shown below:

$$Unit\ Requirement = (Demand \times Process\ Time/60)/(Period + MQT)$$

Where *Demand* is the relevant peak period figure, *Period* is the number of minutes of the peak, *Process Time* is the number of seconds per passenger for the process, and *MQT* is the maximum queue time.

This formula can be rearranged to make 'Demand' the subject of the equation, which gives the capacity for each period based on a given number of processors, process time and MQT, as below:

$$Capacity = ((Period + MQT) \times Unit\ Provision)/(Process\ Time/60)$$

The capacity can then be assessed for different period lengths.

When rearranging the formula, the methodology is simplified to examine only the 60-minute period, as this is the period for which the annual capacity figure is based off.

B.2 ARRIVALS HALL CAPACITY APPROACH

For non-processor-based capacity, like the arrivals hall area, a different methodology is provided by the ADRM, based on populations and available areas. To calculate the passenger holding capacity of the arrivals hall area, the following rearranged formula is used:

$$Hall\ Capacity = 1/((seat\ ratio * seat\ area)/Area\ of\ Hall + ((standing\ ratio * stand\ area)/Area\ of\ hall)$$

Where *seat ratio* is the percentage of people who are seated, and *standing* ratio is the percentage of people who are standing, *seat area* is the area provided per seat, *stand area* is the area provided per standing person, and *area of hall* is the total area of the arrivals hall.

Once the Hall Capacity is known, it is required to work out the peak hour arrivals passengers that this capacity supports:

$$PHP = 1/(((Pax\ Dwell\ /(Hall\ Capacity * 60) + ((Visitor\ Dwell * Visitor\ Ratio)/(Hall\ Capacity\ * 60)))$$

Where *PHP* is the peak hour capacity of the area, *Pax Dwell* and *Visitor Dwell* are the average dwell times of passengers and visitors in the arrivals hall, and *Visitor Ratio* is the average number of visitors per arriving passenger.



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Appendix J Water Framework Directive Assessment

REPORT



Water Framework Directive (WFD) Assessment

Project Ref: Proposed Order for Future Operations at Dublin Airport

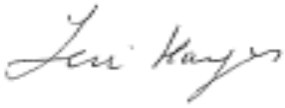
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Signature		
Name	Marcelo Allende	Teri Hayes
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Date	4 November 2026	

Disclaimer
This report considers the specific instructions and requirements of our client. It is not intended for third-party use or reliance, and no responsibility is accepted for any third party. The provisions in this report apply solely to this project and should not be assumed applicable to other developments without review and modification.

ENVIRONMENT
I.S. EN ISO 14001:2015
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HEALTH & SAFETY
I.S. ISO 45001:2018
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QUALITY
I.S. EN ISO 9001:2015
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1. INTRODUCTION

1.1 Background

AWN Consulting (AWN) has been commissioned by Nicholas O'Dwyer Ltd (NOD) and Dublin Airport Authority (daa) to carry out a Water Framework Directive Assessment for a Proposed Order in relation to future operations at Dublin Airport. The Proposed Order will consist of the amendment of condition no. 3 of ABP Ref. No. PL06F.220670 (F06A/1248) and condition no. 2 under ABP Ref No. PL06F.223469 (F06A/1843); collectively referred to as "the 32mppa Conditions").

- Condition no. 3 of ABP Ref. No. PL06F.220670 (F06A/1248) states: "3. The combined capacity of Terminal 2 as permitted together with Terminal 1 shall not exceed 32 million passengers per annum unless otherwise authorised by further grant of planning permission. Reason: Having regard to the policies and objectives of the Dublin Airport Local Area Plan and capacity constraints (transportation) at the eastern campus."
- Condition no. 2 of ABP Ref. No. PL06F.223469 (F06A/1843) states: "2. The combined capacity of Terminal 1 (including the extension authorised by this grant of permission) and Terminal 2 granted permission under planning register reference number F06A/1248 (An Bord Pleanála appeal reference number PL 06F.220670) shall not exceed 32 million passengers per annum unless otherwise authorised by further grant of planning permission. Reason: Having regard to the policies and objectives of the Dublin Airport Local Area Plan and capacity constraints (transportation) at the eastern campus."

The Proposed Order relates to the whole of Dublin Airport and includes all airside and landside infrastructure used for processing passengers. The main consequences of the Proposed Order are as follows:

- The amendment of the 32mppa Conditions will involve a change in the operational conditions of the Airport to be in a position to process more passengers.
- No physical works are either included as part of the Proposed Order, or are required in order to facilitate the Proposed Order.
- In this context, and taking into account available stands, gates, baggage handling and surface accessibility, the Airport Capacity Report (2026) demonstrates that the estimated capacity of the existing facilities, infrastructure, operational processes and current demand profile of Dublin Airport is 40.5mppa.

Therefore, what is being assessed in this report is:

- The growth in passenger numbers to 40mmpa by 2029 (2029 Proposed Operation);
- From the bases of (i) 2025 Permitted Operation [32mppa]; and (ii) 2025 Current Operation [36mppa].

The 40mppa assessment scenario assumes that the embedded operational measures described in the Drainage Report are in place. These measures are being implemented independently of this application as part of ongoing airport operational improvements and are referenced solely to inform the assessment. No consent is being sought for these measures under the Proposed Order.

AWN completed a WFD Assessment which has been prepared in response to the requirements of the Water Framework Directive. The objective of this assessment is to determine whether the Proposed Order has the potential to cause a deterioration of a water body from its current status or potential, and/or prevent future attainment of good status or potential where not already achieved.

This WFD Assessment has been prepared in response to the requirements of the Water Framework Directive 2000/60/EC and is provided to support the Appropriate Assessment Screening Report (AA) and

should, therefore, be read together with this report; and to support the application for the Proposed Order pursuant to the Dublin Airport (Passenger Capacity) Act 2026.

1.2 Experience of Authors

This report was prepared by Marcelo Allende. Marcelo Allende (BSc, BEng) is a Principal Environmental Consultant (Hydrologist) with AWN Consulting with over 20 years of experience in water resources technical studies, conceptual and numerical hydrological/hydrogeological modelling and environmental consultancy. Marcelo holds a degree in Water Resource Civil Engineering (BEng, Hons) from the University of Chile and a Bachelor of Science in Engineering (BSc, Hons). He has worked on a wide of range of projects including multi-aspect environmental investigations, geo-environmental impact assessments, surface and groundwater resource management, hydrological and hydrogeological conceptual and numerical modelling, strategic and site specific flood risk assessments (Stage 1,2 and 3), Due Diligence reporting, baselines studies, soils, surface water and groundwater monitoring and field sampling programmes on a variety of brownfield and greenfield sites throughout Ireland as well as overseas in Chile, Argentina, Peru and Panama. He is currently a member of the International Association of Hydrogeologists (IAH, Irish Group) and a member of Engineers Ireland (MIEI).

1.3 Source of Information

Desk-based hydrological and hydrogeological information was obtained through accessing databases and other archives where available. Data was sourced from the following:

- Geological Survey of Ireland- online mapping (GSI, 2025).
- GSI - Geological Heritage Sites & Sites of Special Scientific Interest.
- Ordnance Survey of Ireland (OSI).
- Teagasc subsoil database.
- National Parks and Wildlife services (NPWS, 2025).
- Environmental Protection Agency (EPA) – website mapping and database information. Envision water quality monitoring data for watercourses in the area.
- WFD Cycle 2 – Liffey and Dublin Bay Catchment – Sub-Catchment: Mayne_SC_010 (EPA, 2022).
- WFD Cycle 3 HA 09 Liffey and Dublin Bay Catchment Report (EPA, 2024).
- Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).
- Fingal Development Plan 2023-2029.
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW).
- Office of Public Works (OPW) flood mapping data (www.floodmaps.ie)

Site specific data was derived from the following sources:

- Dublin Airport. Proposed Order on Passenger Cap. Assessment of de-icer Pollution Impacts from Airport Passenger Growth (Gresham Smith, 2026).
- Dublin Airport. Surface water quality monitoring.

Relevant legislation and guidance are as follows:

- European Communities 920030, Common Implementation Strategy for the Water Framework Directives (2000/60/EC) Guidance Document No.2.
- EPA (May 2015), An approach to characterisation as part of the Water Framework Directive V2 revised.
- EPA (2010) Methodology for Establishing Groundwater Threshold Values, the Assessment of Chemical and Quantitative Status for Groundwater and Groundwater Trends.

- Common Implementation Strategy (CIS) (2017) Guidance Document No. 36 'Exemptions to the environmental objectives according to Article 4(7) provides comprehensive guidance on the application of Article 4(7).
- Joint Assistance to Support Projects in European Regions (JASPERS) (2018) Water Framework Directive Project assessment checklist tool.
- UKTAG (2012) Groundwater Chemical Classification for the Water Framework Directive. Paper 11b(i).
- UKTAG (2012) Groundwater Quantitative Classification for the Water Framework Directive. Paper 11b(ii), UK Technical Advisory Group on the Water Framework Directive.
- Inland Fisheries Ireland (IFI) – A Guideline on Planning for Watercourses in the Urban Environment.

This WFD assessment was based on desktop review of the Environmental Protection agency (EPA) and Local Authority Waters Programme water quality records which were obtained from the portal www.catchments.ie (accessed in June 2026). From the aforementioned source of information, the WFD Status classification and Risk score were obtained for the identified water bodies.

1.4 Water Framework Directive Legislation and Guidance

The Water Framework Directive (WFD) 2000/60/EC aims to protect and enhance the quality of the water environment (both surface water and groundwater) across all European Union member states.

The concept of 'deterioration of the status' of a body of surface water in Article 4(1)(a)(i) of Directive 2000/60 must be interpreted as meaning that there is deterioration as soon as the status of at least one of the quality elements, within the meaning of Annex V to the directive, falls by one class, even if that fall does not result in a fall in classification of the body of the surface water as a whole. However, if the quality element concerned, within the meaning of that annex, is already in the lowest class, any deterioration of that element constitutes a 'deterioration of the status' of a body of surface water, within the meaning of Article 4(1)(a)(i).

As part of its role, competent authorities and other stakeholders must consider whether proposals (other than where exemptions apply Article 4.4 - 4.7 of the WFD) have the potential to:

- Cause a deterioration of a water body from its current status or potential; and/ or
- Prevent future attainment of good status or potential where not already achieved.

As a result, new developments/proposals/licence conditions that have the potential to impact on current or predicted WFD status are required to assess their compliance against the WFD objectives of the potentially affected water bodies.

The WFD is implemented through River Basin Management Plans (RBMPs) in six-year cycles. Ireland is currently in WFD third cycle 2022-2027 i.e. Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).

The primary aim of the RBMP is that water bodies identified as being 'At Risk' of not achieving their environmental objectives need to have targeted measures implemented to achieve objectives under this Plan. The Water Action Plan 2024 has been reviewed in the context of ensuring mitigation measures comply with current and expected future measures required to be implemented for protection of water body status within the context of the proposed Order.

1.5 Methodology

This WFD assessment is based on desktop review of the Environmental Protection Agency (EPA) dataset which was obtained from the portal www.catchments.ie (accessed in May 2026).

The water bodies identified for this assessment are related to the vicinity of the Dublin Airport site and its direct or indirect hydrological or hydrogeological connection. From the aforementioned source of information, the WFD Status classification, and Risk score were obtained for the identified water bodies and are presented in Section 3.

1.5.1 WFD Risk Status

The WFD Risk score is the risk for each waterbody of failing to meet their WFD objectives by 2027. The risk of not meeting WFD objectives has been determined by assessment of monitoring data, data on the pressures and data on the measures that have been implemented over the third cycle. Waterbodies that are At Risk are prioritised for implementation of measures. The most recent assessment was completed in 2021 by the EPA Catchments Unit in conjunction with other public bodies.

The three risk categories are:

- Waterbodies that are 'At Risk' of not meeting their Water Framework Directive objectives. For these waterbodies an evidence-based process was undertaken to identify the significant pressures; once a pressure is designated as 'significant', measures and accompanying resources are needed to mitigate the impact(s) from this pressure. These 'At Risk' waterbodies require not only implementation of the existing measures described in the various regulations, e.g., the Good Agricultural Practices Regulations, but also in many instances more targeted supplementary measures.
- Waterbodies that are categorised as 'Review' either because additional information is needed to determine their status before resources and more targeted measures are initiated or the measures have been undertaken, e.g., a wastewater treatment plant upgrade, but the outcome has not yet been measured/monitored.
- Waterbodies that are 'Not at Risk' and therefore are meeting their Water Framework Directive objectives. These require maintenance of existing measures to protect the satisfactory status of the water bodies.

1.5.2 WFD Water Body Status

Surface water body status is classified by the EPA on the basis of chemical and ecological status or potential. This system is summarised in Appendix A Figure 1. Under the WFD, groundwater body status is classified on the basis of quantitative and chemical status. This system is summarised in Appendix A Figure 2.

1.5.3 Surface Water No Deterioration Assessment

Table 1-1 below presents the matrix used to assess the effect of the Proposed Order on surface water status or potential class. It ranges from a major beneficial effect (i.e., a positive change in overall WFD status) through no effect to deterioration in overall status class. The colour coding used in Table 1-1 is applied to the 'No Deterioration Assessment' spreadsheet provided in Appendix B of this report.

Table 1-1. Water Framework Directive Water Assessment Matrix

Effect	Description/ Criteria	Outcome
Major Beneficial	Impacts that taken on their own or in combination with others have the potential to lead to the improvement in the ecological status or potential of a WFD quality element for the entire waterbody	Increase in status of one or more WFD element giving rise to a predicted rise in status class for that waterbody.

Effect	Description/ Criteria	Outcome
Minor/ localised beneficial	Impacts when taken on their own or in combination with others have the potential to lead to a minor localised or temporary improvement that does not affect the overall WFD status of the waterbody or any quality elements	Localised improvement, no change in status of WFD element
No Impact	No measurable change to any quality elements.	No change
Localised / temporary adverse effect	Impacts when taken on their own or in combination with others have the potential to lead to a minor localised or temporary deterioration that does not affect the overall WFD status of the waterbody or any quality elements. Consideration will be given to habitat creation measures.	Localised deterioration, no change in status of WFD element when balanced against mitigation measures embedded in the project.
Adverse effect on class of WFD element	Impacts when taken on their own or in combination with others have the potential to lead to the deterioration in the WFD status class of one or more biological quality elements, but not in the overall status of the waterbody. Consideration will be given to habitat creation measures.	Decrease in status of WFD element when balanced against positive measures embedded in the project.
Adverse effect on overall WFD class of waterbody	Impacts when taken on their own or in combination with others have the potential to lead to the deterioration in the ecological status or potential of a WFD quality element, which then lead to a deterioration of status/potential of waterbody.	Decrease in status of overall WFD waterbody status when balanced against positive measures embedded in the project.

1.5.4 Groundwater No Deterioration Assessment

Table 1-2 below presents the matrix used to assess the effect of the Proposed Order on groundwater status class. It ranges from a beneficial effect but no change in status to deterioration in overall status class. The colour coding used in Table 1-2 is applied to the final 'No Deterioration Assessment' spreadsheet in Appendix B of this report.

Table 1-2. Groundwater Assessment Matrix

Magnitude of Impact of the Proposed Order on WFD Element	Effect on WFD Element within the assessment boundary	Effect on Status of WFD element at the Groundwater Body Scale
Impacts lead to beneficial effect	Combined impacts have the potential to have a beneficial effect on the WFD element.	Improvement but no change to status of WFD element

Magnitude of Impact of the Proposed Order on WFD Element	Effect on WFD Element within the assessment boundary	Effect on Status of WFD element at the Groundwater Body Scale
No measurable change to groundwater levels or quality.	No measurable change to WFD elements.	No change and no deterioration in status of WFD element
Impacts when taken on their own have the potential to lead to a minor localised or temporary effect	Combined impacts have the potential to lead to a minor localised or temporary adverse effect on the WFD element.	Combined impacts have the potential to lead to a minor localised or temporary effect on the WFD element. No change to status of WFD element and no significant deterioration at groundwater body scale.
Impacts when taken on their own have the potential to lead to a widespread or prolonged effect.	Combined impacts have the potential to have an adverse effect on the WFD element.	Combined impacts have the potential to have an adverse effect on the WFD element, resulting in significant deterioration but no change in status class at groundwater body scale.
Impacts when taken on their own have the potential to lead to a significant effect.	Combined impacts in combination with others have the potential to have a significant adverse effect on the WFD element.	Combined impacts in combination with others have the potential to have an adverse effect on the WFD element AND change its status at the groundwater body scale

1.5.5 Assessment against Future Status Objectives

River Basin Management Plans are used to outline water body pressures and the actions that are required to address them. The future status objective assessment considers the ecological and chemical potential of a surface water body and the mitigation measures stated in the River Basin Management plans that defined the ecological and chemical potential. Assessments are based on the Proposed Order with regard to the objectives for achieving good status as set out in the 3rd Cycle RBMP 2022-2027 i.e. Water Action Plan 2024. The assessment considers whether the Proposed Order has the potential to prevent the implementation or impact the effectiveness of the defined measures in these plans.

1.5.6 Water Action Plan 2024 Programme of Measures

The Water Action Plan (WAP) provides information on the status and planned actions for surface waterbodies in Ireland. These entries offer insights into the specific measures being considered or implemented to improve the ecological status of the surface waterbodies. The WAP identifies several key pressures impacting water quality in surface waterbodies across the country:

- Nutrient Pollution: Excessive levels of phosphorus and nitrogen from agricultural runoff are a significant concern. These nutrients can lead to eutrophication, which depletes oxygen in the water and harms aquatic life.
- Urban Pollution: Inadequately treated wastewater and stormwater runoff from urban areas contribute to the degradation of water quality. This includes pollutants such as heavy metals, oils, and other contaminants.
- Physical Modifications: Changes to the river's natural flow and structure, such as barriers and drainage works, disrupt the ecosystem and affect water quality; and

- Climate Change: Altered weather patterns and increased frequency of extreme weather events exacerbate existing pressures on water quality.

The WAP identifies several suggested actions to protect and restore water quality in surface waterbodies ensuring a sustainable and healthy aquatic environment. The actions include:

- Nutrient Management: Implementing stricter controls on agricultural practices to reduce nutrient runoff. This includes promoting the use of buffer strips, cover crops, and precision farming techniques.
- Improving Wastewater Treatment: Upgrading wastewater treatment facilities to ensure that effluents meet higher standards before being discharged into waterbodies.
- Restoring Natural Ecosystems: Removing or modifying barriers to restore natural river flow and habitat connectivity. This also involves re-naturalizing riverbanks and floodplains.
- Integrated Catchment Management: Developing and implementing catchment-specific management plans that address local pressures and involve stakeholders in decision-making processes; and
- Climate Adaptation Measures: Enhancing resilience to climate change by incorporating adaptive management strategies and investing in green infrastructure.

As part of the screening process, the WAP 2024 has been reviewed to identify any relevant pressures or planned measures that may intersect with the Proposed Order. The WAP outlines key pressures on water quality in Ireland, including nutrient pollution from agriculture, urban wastewater discharges, physical modifications to watercourses, and the effects of climate change. These pressures are particularly relevant given the rural and hydrologically setting of the Proposed Development. The screening has also considered the WAP's proposed actions, such as improved nutrient management, restoration of natural hydromorphology, and enhanced wastewater treatment, all of which aim to support the achievement of WFD objectives. The presence of these pressures and the alignment of the Proposed Order with the WAP's objectives are important considerations in determining whether the Proposed Order could contribute to cumulative impacts or conflict with existing Programme of Measures (PoM).

2. DESCRIPTION OF HYDROLOGICAL AND HYDROGEOLOGICAL ENVIRONMENT

2.1 Hydrology

Dublin Airport is located within the former Eastern River Basin District (ERBD, now the Irish River Basin District), as defined under the European Communities Directive 2000/60/EC, establishing a framework for community action in the field of water policy – this is commonly known as the Water Framework Directive (WFD).

According to the EPA Maps, Dublin Airport lies within the Liffey and Dublin Bay Catchment (Hydrometric Area 09) and WFD Sub-Catchment Mayne_SC_010. A small section of the site lies within the WFD Sub-Catchment Broadmeadows_SC_010. The Dublin Airport catchment is located within the upstream extents of four major river catchments; the Santry River, Mayne River, Ward River and Sluice River.

With regard to the local watercourse catchments, the site is mainly located within the Upper Cuckoo Stream local Sub-Catchment. The Upper Cuckoo sub-catchment is the largest sub-catchment at Dublin Airport and includes a large proportion of the operational airfield area at Dublin Airport.

The drainage infrastructure of Dublin Airport is defined by its local watercourse catchments. These developed catchments drain towards the east and are part of the Mayne SC_010 WFD sub-catchment. Therefore, the portion of greenfield airport land that is part of the Broadmeadows SC_010 subcatchment (part of the Ward River catchment) is not part of the drainage catchment of the airport and was excluded from this assessment.

Therefore, the surface water at Dublin Airport drains to three primary catchments, subdivided into a further six sub catchments as follows which are associated with the following WFD waterbodies.

Table 2-1. Watercourses within Dublin Airport Area

Catchment	Sub Catchment	WFD Waterbody
Sluice	Kealy Stream	Sluice_010
	Wad Stream	
	Forrest Little Stream	
Santry	Santry River	Santry_010
Mayne	Mayne River	Mayne_010
	Cuckoo Stream	Mayne_010

The Sluice River flows eastwards towards the Baldoyle Estuary and enters the Irish Sea at Portmarnock. Tributaries of the Sluice River include the Forrest Little Stream, Wad Stream as well as the smaller Kealy Stream. As mentioned above, all of these streams occur within the grounds of Dublin Airport.

The Cuckoo Stream flows eastwards towards the confluence with the River Mayne which ultimately discharges to Baldoyle Estuary. This feature is culverted at the R132 and farther east at the M1 Motorway before flowing as predominantly open channel to the confluence with the River Mayne at Balgriffin Road.

The Mayne River rises near Ballystruan south of Dublin Airport. It flows in an easterly direction immediately south of the long-term car park and Dardistown Cemetery and is culverted below the R132 and the M1 Motorway. This river flows through mainly agricultural and recreational land north of the R132 Northern Cross Route Extension before its confluence with its tributary, the Cuckoo Stream, and ultimately discharges to Baldoyle Estuary and the Irish Sea at Mayne Bridge between Baldoyle and Portmarnock.

The Santry River rises near Harristown to the east of the R122. The river flows in a south-easterly direction through Sillogue Park Public Golf Course before being culverted to the immediate west of the M50 interchange with the Naul Road/Ballymun Road at Ballymun. It continues in a south-easterly direction as predominantly open channel flowing through Santry Demesne, Clonshaugh, Coolock and Raheny before discharging to Dublin Bay (via North Bull Island) near Watermill Road.

The Figure 2.1 below presents the Sub-Catchments associated with Dublin Airport and Figure 2.2 presents the local watercourse catchments.

Figure 2.1. Dublin Airport and Sub-Catchments

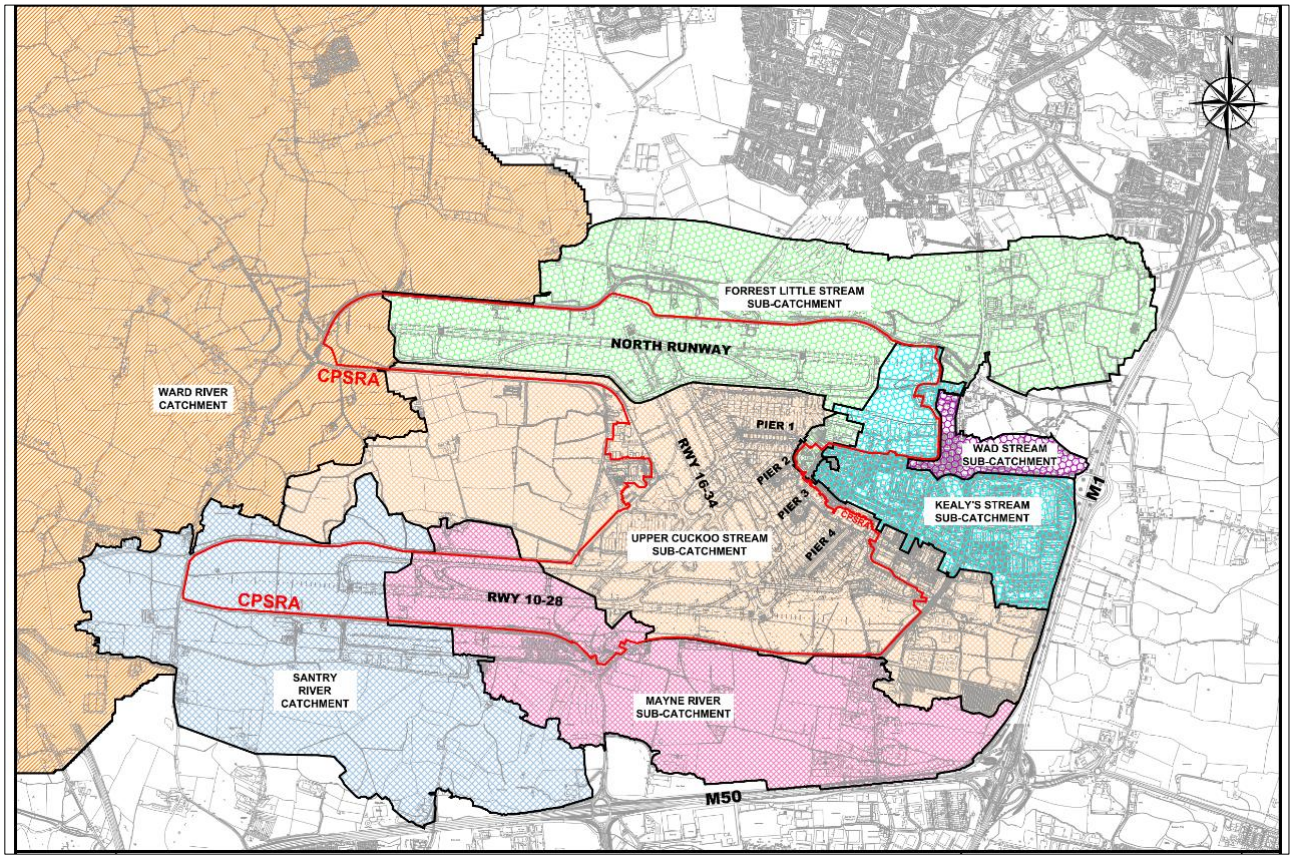
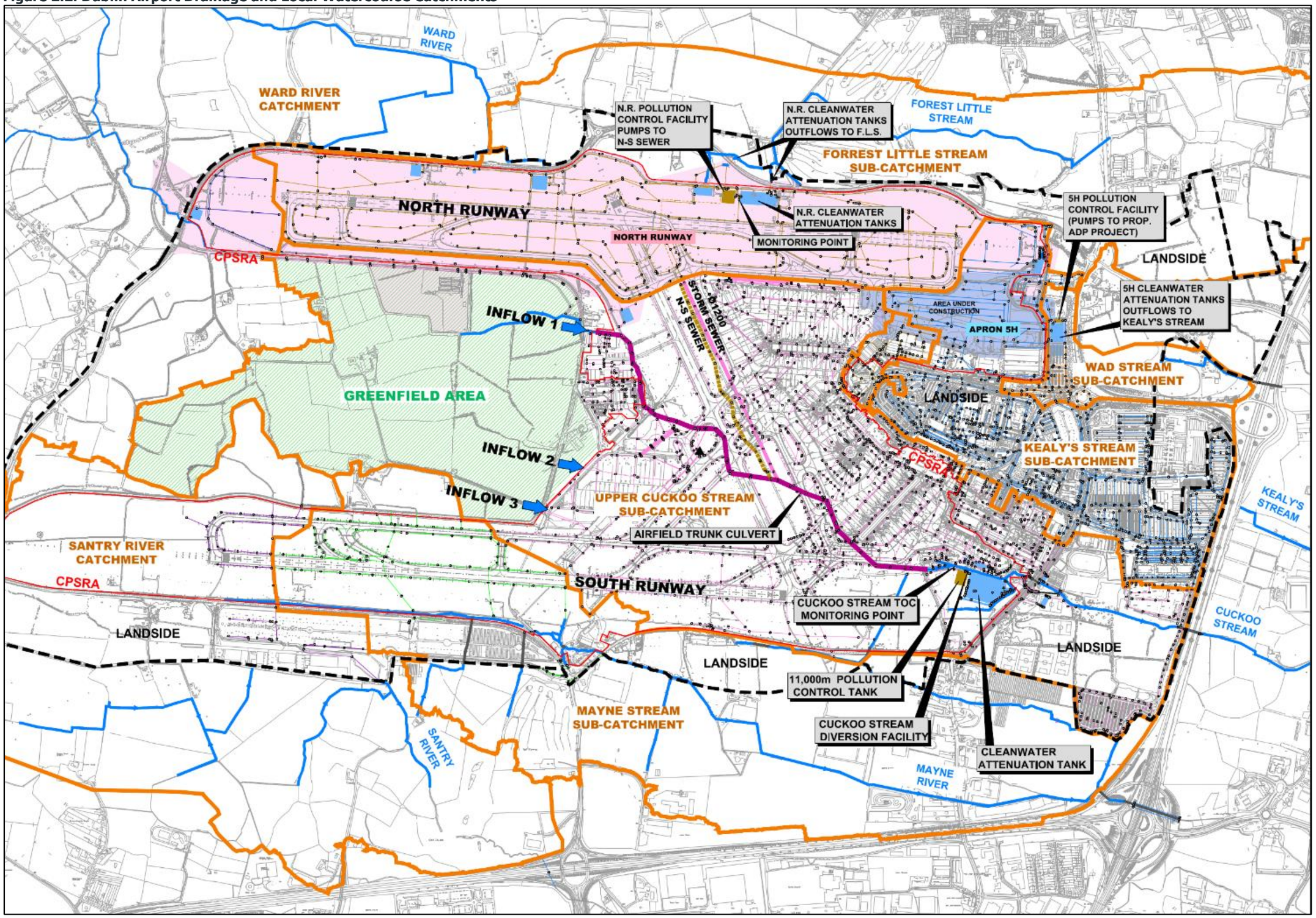


Figure 2.2. Dublin Airport Drainage and Local Watercourse Catchments



2.1.1 Surface Water Quality

2.1.1.1 EPA Database

Surface water quality is monitored periodically by the EPA at various regional locations along principal and other smaller watercourses. The EPA assess the water quality of rivers and streams across Ireland using a biological assessment method, which is regarded as a representative indicator of the status of such waters and reflects the overall trend in conditions of the watercourse. The biological indicators (also named Q Values) range from Q5-Q1. Level Q5 denotes a watercourse with good water quality and high community diversity, whereas Level Q1 denotes very low community diversity and bad water quality.

As presented below, evidence from the EPA and other sources indicate that the Mayne River (Cuckoo Stream) and other catchments on or near the airport campus are below 'good status' and subject to multiple pressures. This is consistent with small water courses in catchments dominated by intensive agriculture and urban development.

Table 2-2, Table 2-3 and Figure 2.3 below present the EPA monitoring stations along the subject river waterbodies, the data from which is used by the EPA to assesses the water quality and biological indicators of these watercourses. In addition, Table 2-3 presents the biological indicator (Q Values) associated with these stations.

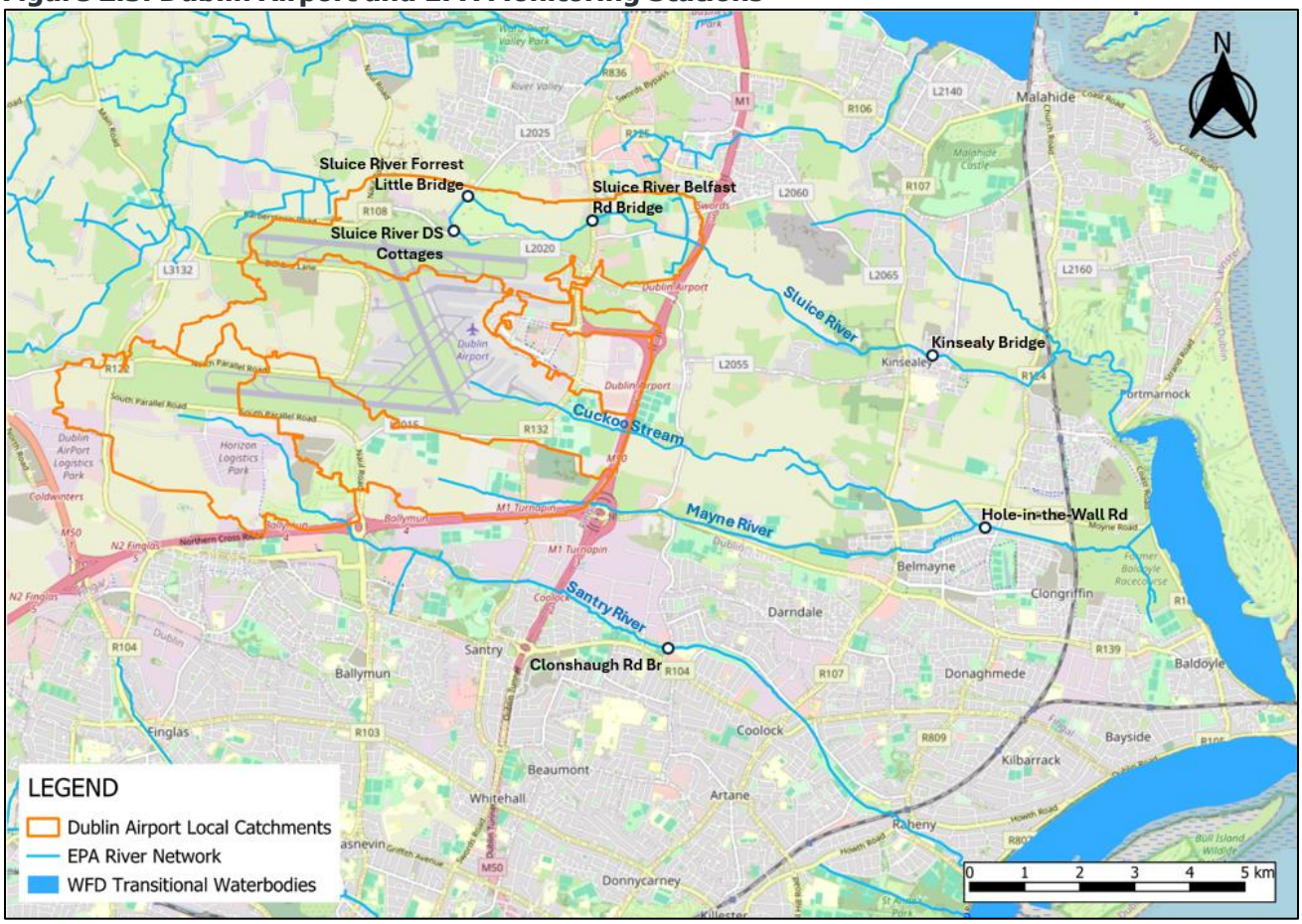
Table 2-2. EPA Water Quality Monitoring Stations

Waterbody	Station code	Station Name
Sluice_010	RS09S070200	Sluice River DS Cottages
Santry_010	RS09S010300	Clonshaugh Rd Br
Mayne_010	RS09M030500	Hole-in-the-Wall Rd Br

Table 2-3. EPA Biological Indicator Monitoring Stations

Waterbody	Station code	Station Name	Biological Indicator (Q Values)				
			2016	2019	2021	2022	2025
Sluice_010	RS09S070400	Sluice River Belfast Rd Bridge			3	3	3
	RS09S070840	Kinsealy Bridge			3-4	3-4	3-4
Santry_010	RS09S010300	Clonshaugh Rd Br	3	2-3		2-3	2-3
Mayne_010	RS09M030500	Hole-in-the-Wall Rd Br	2-3	2-3		3	3

Figure 2.3. Dublin Airport and EPA Monitoring Stations



As can be seen above, the most recent Q Values (2025) indicate that the following pollution status and conditions:

- Sluice_010: Moderately polluted and unsatisfactory condition (Q3);
- Santry_010: Moderately polluted and unsatisfactory condition (Q2-3);
- Mayne_010: Moderately polluted and unsatisfactory condition (Q3).

Water quality data from the stations presented in Table 2-2 above and collected by the EPA over the last decade has been processed. Figure 2.4 to Figure 2.6 below present historical trends for some water quality parameters of interest compared with the Average Annual "Good" Threshold value for each parameter as defined under the EU Environmental Objectives (Surface Water) Regulations (S.I. 272/2009 and amendment S.I. 77/2019). Values presented in the graphs are annual average values; therefore, results from 2026 should be read carefully as they are representative of Q1 only.

Figure 2.4. Historical Trend for average annual Ammonia as N concentrations (Source: EPA, 2026)

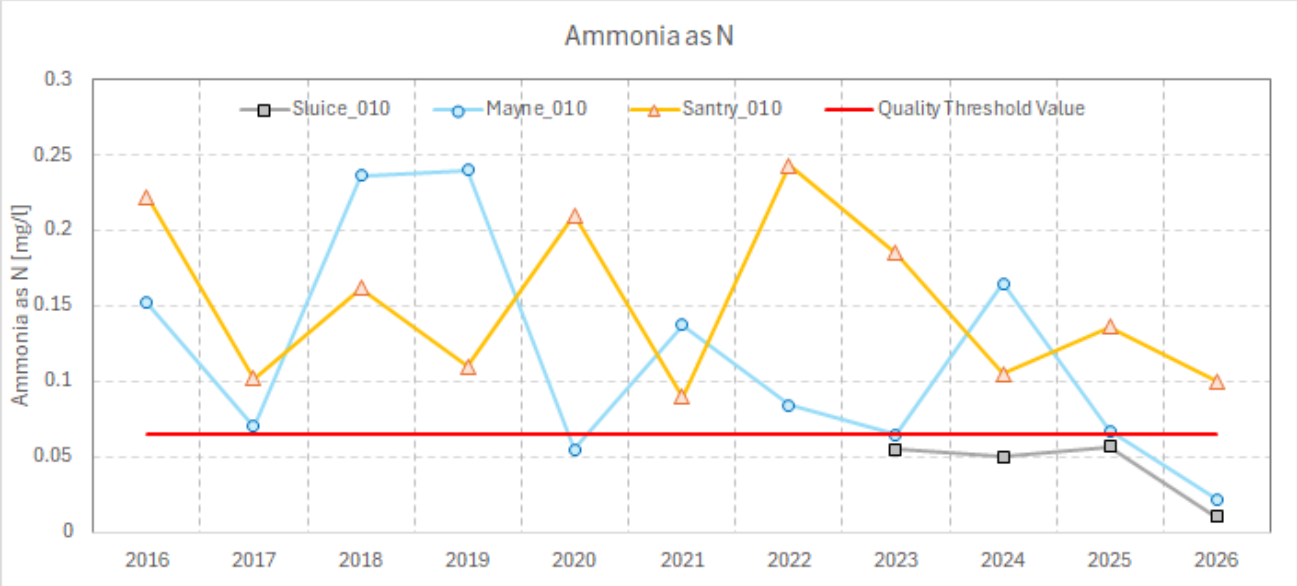


Figure 2.5. Historical Trend for average annual Biological Oxygen Demand (BOD) (Source: EPA, 2026)

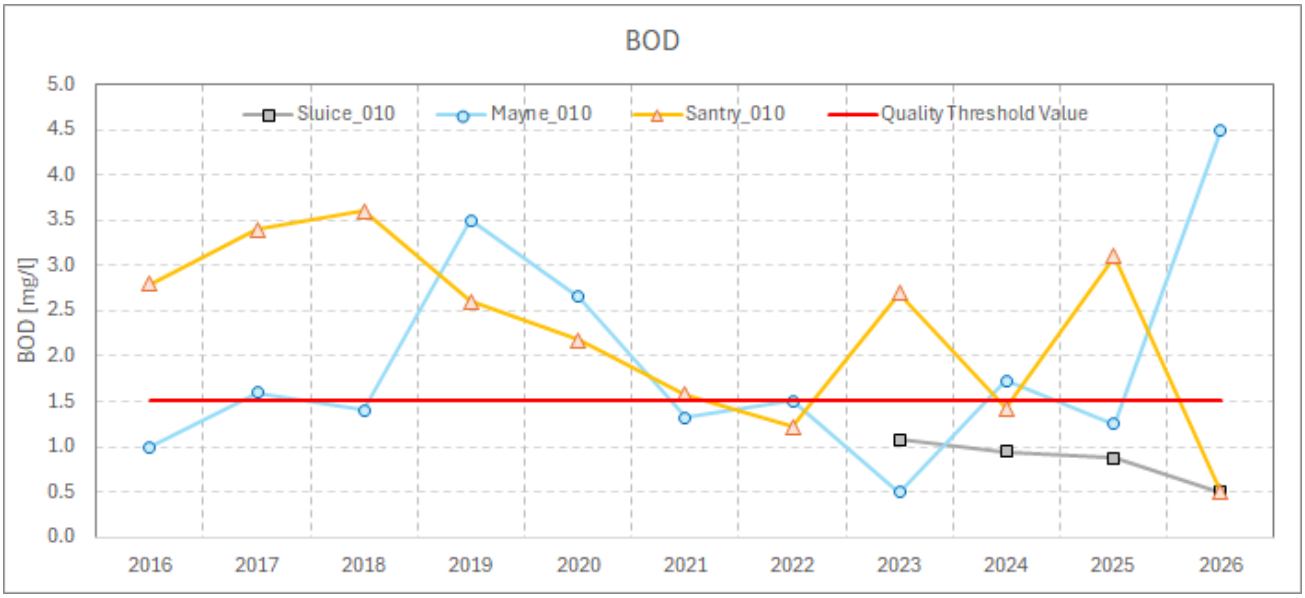
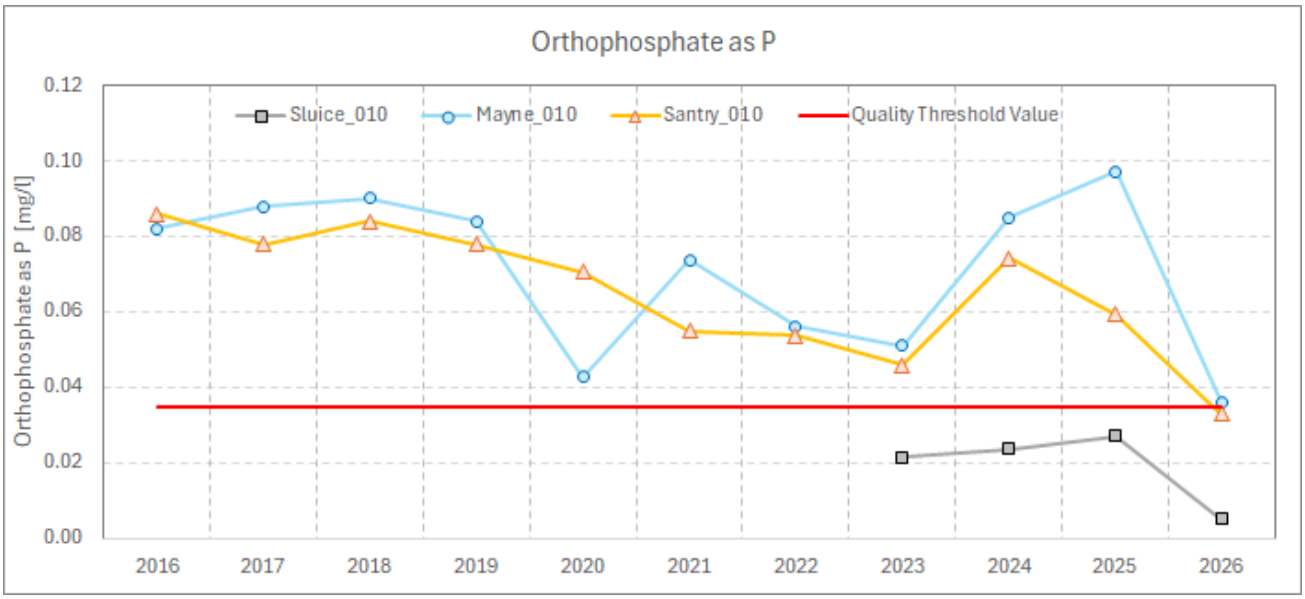


Figure 2.6. Historical Trend for average annual Orthophosphate as P (Source: EPA, 2026)



As can be seen in the graphs above, concentrations recorded during the last cycle have been, in general, following a downward trend over the SI Regulations for Mayne and Santry catchments and below the SI Regulations for the Sluice catchment.

2.1.1.2 EPA Hydromorphological Status

The European Water Framework Directive (WFD) 2000/60/EC requires the assessment of the ecological status of water bodies, which is comprised of biological, physico-chemical and hydromorphological quality elements. Hydromorphology is a term used in the WFD to describe the processes operating within, and the physical form of a waterbody. The term encompasses both hydrological and geomorphological characteristics that, in combination, help support a healthy ecology. Hydromorphological elements contribute towards WFD status classification.

The Environmental Protection Agency (EPA) in the Republic of Ireland and the Northern Ireland Environment Agency (NIEA), through the North South Shared Aquatic Resource (NS SHARE) project, agreed a field assessment technique for WFD classification called the River Hydromorphology Assessment Technique (RHAT), the newest version of which was published in 2014.

These guidelines assume that natural systems support ecology better than modified systems. Hence the RHAT method classifies river hydromorphology based on a departure from naturalness. It assigns a morphological classification directly related to that of the WFD: High, Good, Moderate, Poor and Bad, based on semi-qualitative and quantitative criteria.

From the surface waterbodies above, the EPA has qualified the hydromorphological status only for the Sluice_010 WFD Waterbody.

Table 2-4. Hydromorphological Status in Sluice_010 (Source: EPA, 2026)

Waterbody	Station code	Station Name	Hydromorphology (RHAT) Class
Sluice_010	RS09S070300	Sluice River Forrest Little Bridge	Poor
	RS09S070400	Sluice River Belfast Rd Bridge	Moderate
	RS09S070840	Kinsealy Bridge	Poor

The 'Poor' status is mainly associated with poor bank vegetation riparian landcover and floodplain connectivity conditions.

2.1.1.3 Local Water Quality - daa Water Quality Programme

In addition, routine water sampling has been conducted by daa in the subject watercourses for over 10 years. The obtained results from 2021 to present are presented below in Table 2-5 below. Location of these stations is presented in Figure 2.7.

Figure 2.8 to Figure 2.12 present historical trends of annual average values for some water quality parameters of interest compared with EU Environmental Objectives (Surface Water) Regulations (S.I. 272/2009 and amendment S.I. 77/2019).

It should be noted that de-icing fluids used on aircraft and airfield pavements rely on glycols or acetates, which introduce high levels of COD into runoff. Therefore, COD is the most representative parameter of interest for the de-icing process and does not have an established threshold value in the aforementioned regulations. In addition, the COD/BOD ratio is a key indicator of water or wastewater biodegradability (where a COD/BOD ratio greater than 4.0 is representative of poor biodegradable waters). Deicing fluids typically have COD to BOD ratios of between 1.7 and 2.

Table 2-5. Local Water Quality Results

Station	Waterbody/ Location	WFD Waterbody	Period of records	Number of records
R132	Cuckoo Stream at R132	Mayne_010	Feb 2021- Mar 2026	260
C9	Cuckoo Stream at M1	Mayne_010	Jul 2021- Mar 2026	128
C4	Cuckoo Stream at West Apron	Mayne_010	Dec 2021-Feb 2026	52
M5	Mayne River	Mayne_010	Aug 2021-Mar 2026	238
S4	Santry River	Santry_010	Aug 2021-Mar 2026	41
K1	Wad Stream	Sluice_010	Sep 2022-Feb 2026	50
K4	Kealys Stream	Sluice_010	Jul 2021-Mar 2022	29

Figure 2.7. Dublin Airport Water Quality Programme Monitoring Stations

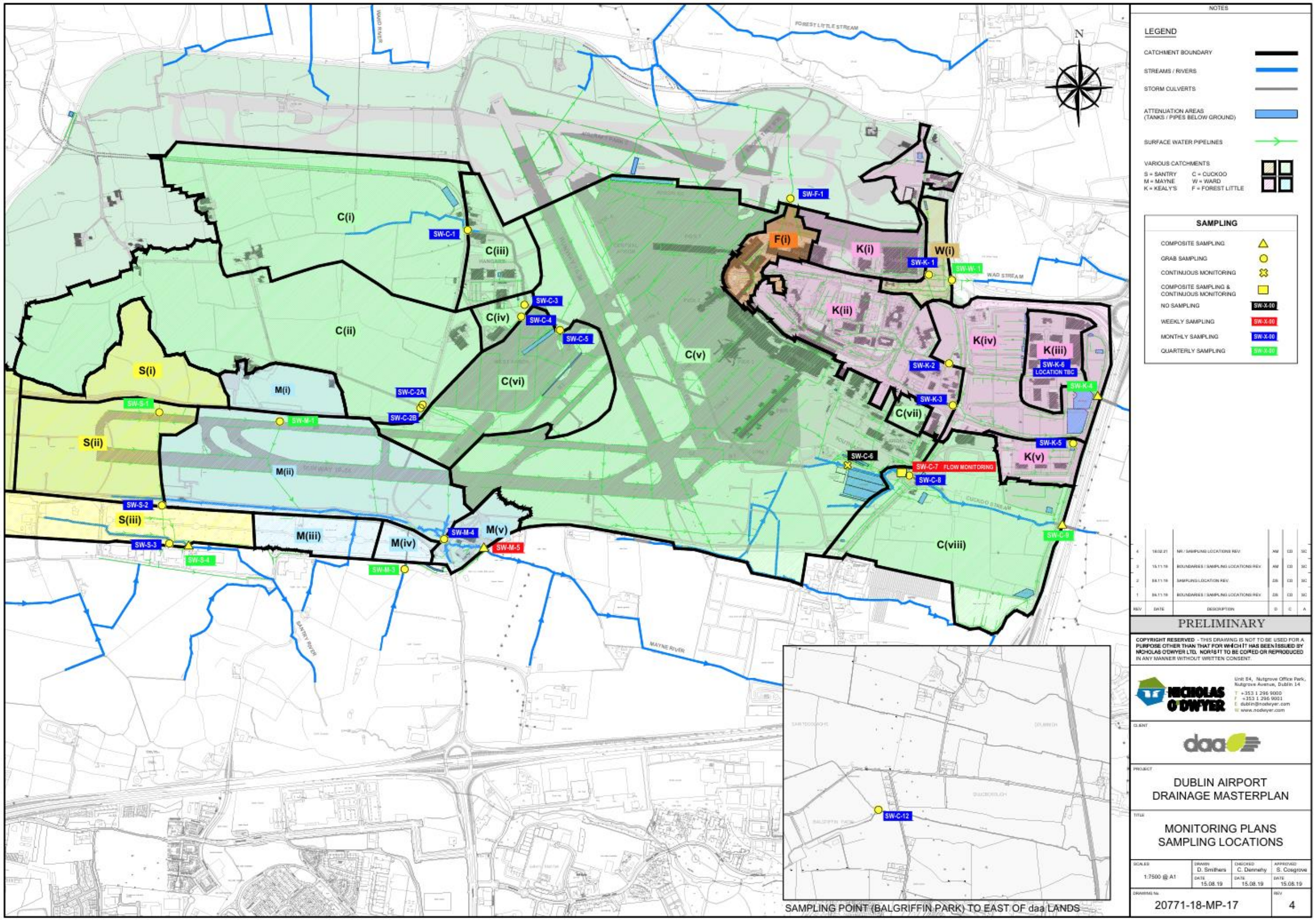


Figure 2.8. Historical Trend for Ammonia as N annual average concentrations (Source: daa, 2026)

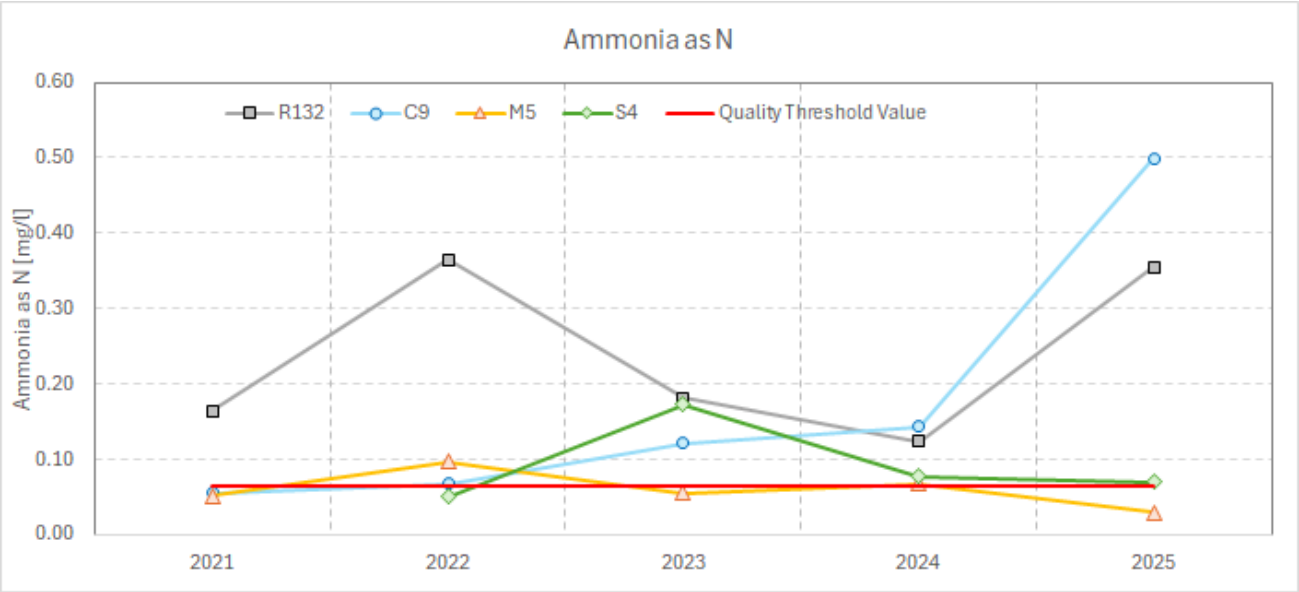


Figure 2.9. Historical Trend for Biological Oxygen Demand (BOD) annual average concentrations (Source: daa, 2026)

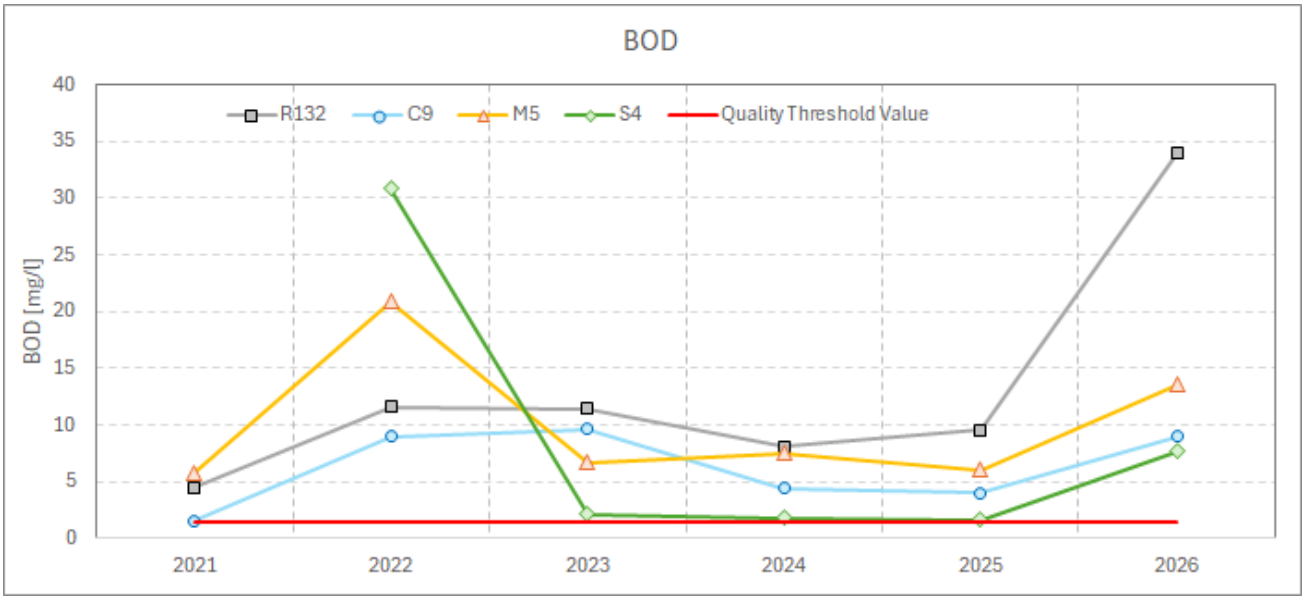


Figure 2.10. Historical Trend for Chemical Oxygen Demand (COD) annual average concentrations (Source: daa, 2026)

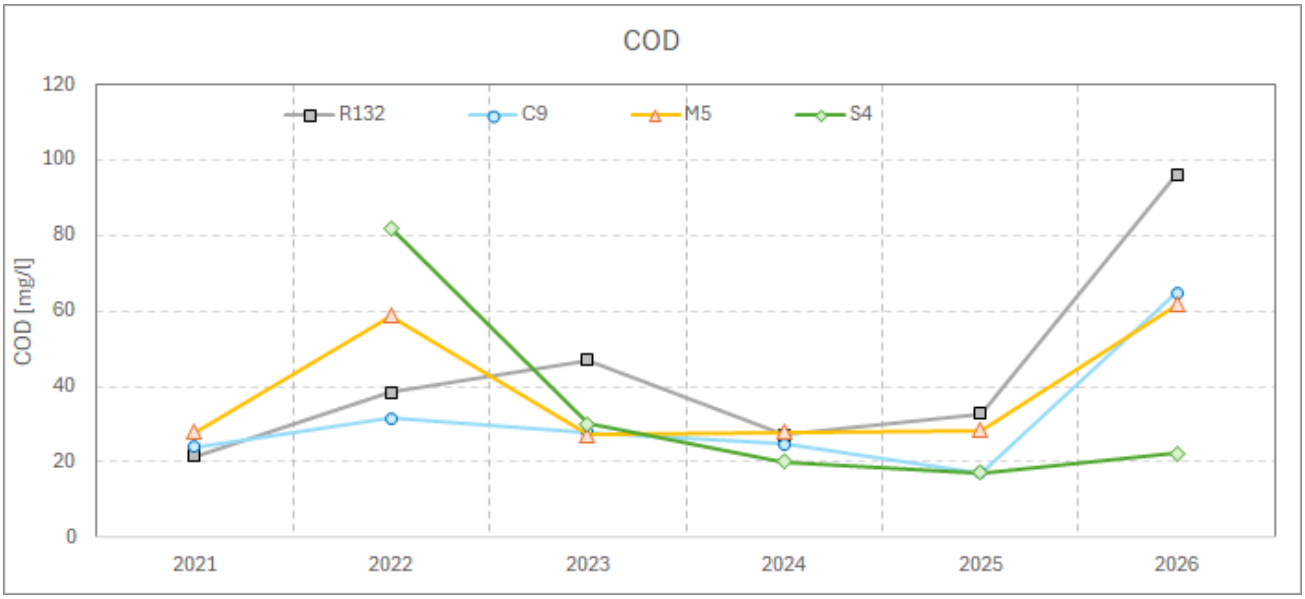


Figure 2.11. Historical Trend for COD/BOD ratio annual average (Source: daa, 2026)

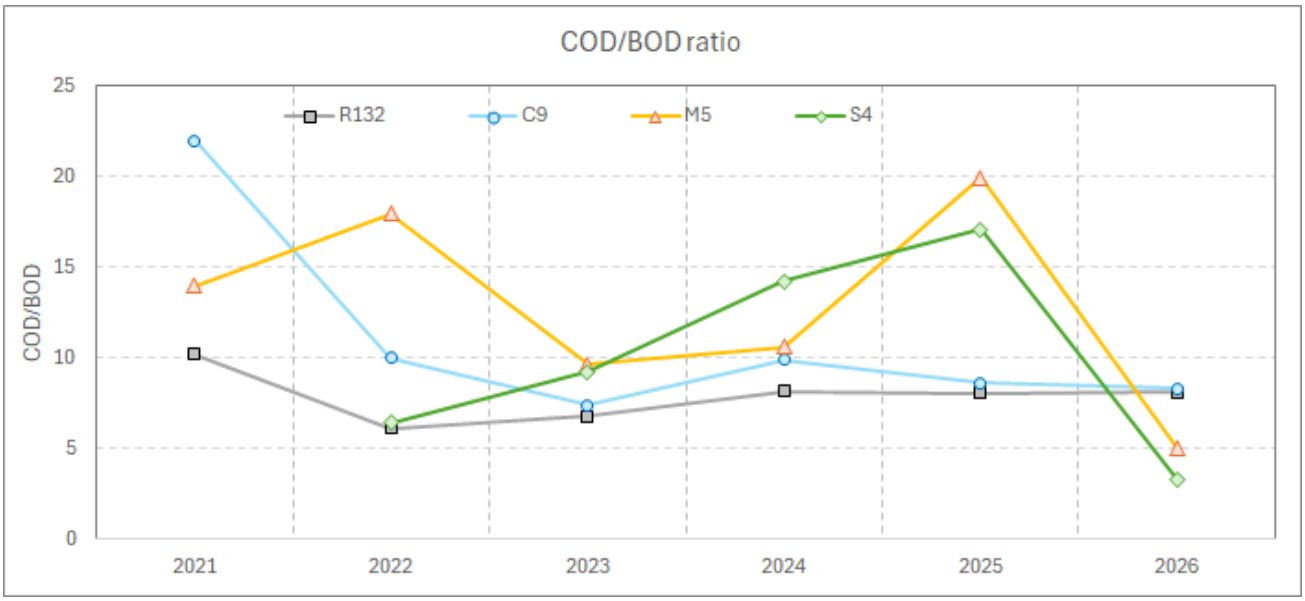
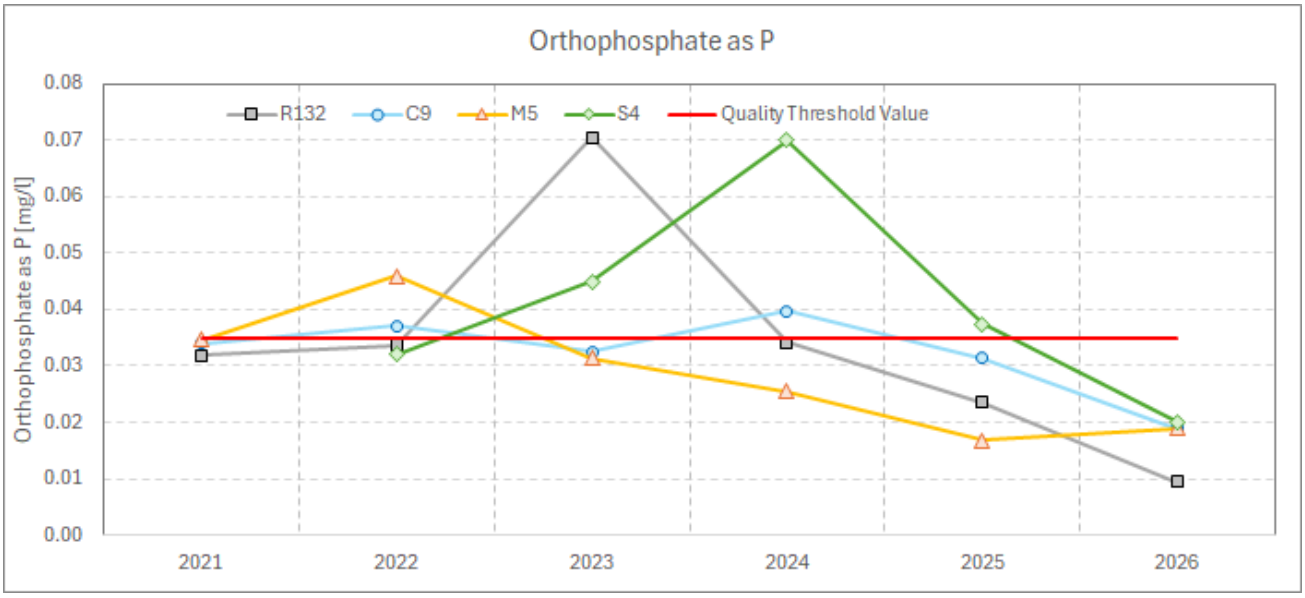


Figure 2.12. Historical Trend for Orthophosphate as P annual average concentrations (Source: daa, 2026)



As can be seen above, there is a direct relationship between the COD and BOD trends, with elevated COD/BOD ratio. All aircraft are de-iced at the aircraft stands in the upper Cuckoo catchment, with the result that aircraft de-icer applied at the airport, which is mobilised following rainfall events, is conveyed to the drainage system. All pavement de-icing which takes place within the upper Cuckoo Stream catchment also flows to the Airfield Trunk Culvert. It should be noted that pavement de-icers are the primary source of COD in the Mayne and Santry catchments and that pavement de-icing is independent of aircraft operations.

2.2 Hydrogeology

Mapping from the Geological Survey of Ireland (GSI, 2026) indicates that the bedrock underlying the site and the surrounding area is dominated by rocks from the Carboniferous Age. The superficial deposits presented above underlain by limestones and mudstones of the Tober Colleen Formation, the Lucan Formation and the Malahide Formation. The Tober Colleen Formation (rock unit code: CDTOBE) underlies most of the airport lands and is described as a dark-grey, calcareous, commonly bioturbated mudstones and subordinate thin micritic limestones. The Lucan Formation (rock unit code: CDLUCN) underlies the south-eastern portion of the airport lands (to the east of R132) and is described as a dark grey to black, fine-grained, occasionally cherty, micritic limestones. The Malahide Formation (rock unit code CDMALH) underlies the western zone of the airport and is a limestone composed of calcareous shales, siltstones and sandstones, and occasional thin limestones at its base.

There is no evidence of karstification in the immediate vicinity of the Site according to the GSI Karst and well database.

Dublin Airport site overlies 2 no. groundwater bodies (GWB): Dublin (EU code: IE_EA_G_008) and Swords (EU code: IE_EA_G_011) which are described as 'Poorly productive bedrock' by the EPA. The Swords GWB underlies the north-western portion of the lands. There are also the Industrial Facility GWBs delineated within both the Swords GWB and the Dublin GWB which has been delineated in relation to specific licensed facilities and does not involve the airport area (except for a small part of the Corballis Road South).

Aquifer vulnerability is a term used to represent the intrinsic geological and hydrological characteristics that determine the ease with which groundwater may be contaminated generally by human activities. Due to the nature of the flow of groundwater through bedrock in Ireland, which is almost completely through

fissures/ fractures, the main feature that protects groundwater from contamination, and therefore the most important feature in the protection of groundwater, is the subsoil (which can consist solely of/ or of mixtures of peat, sand, gravel, glacial till, clays or silts). The GSI (2026) guidance classifies the bedrock aquifer vulnerability in the region as 'Low' and 'Moderate' which denotes >5m thickness of low permeability clay. Site investigations in the area generally encountered the bedrock at depths greater than 10mbgl which is representative of a 'Low' vulnerability.

The GSI/ Teagasc (2025) mapping database of the quaternary sediments in the area of the subject site indicates that the principal subsoil type comprises Glacial Tills. This indicates that the aquifer is moderately protected by low permeable overburden.

It should be noted that Per-fluoroalkyl and Poly-fluoroalkyl Substances (PFAS) has been established as present on the lands of the airport. daa has published the results of a comprehensive two-year risk assessment of PFAS on the grounds of Dublin Airport which concluded that the main use of PFAS compounds from an airport perspective was the historical use of firefighting foam that contained PFAS (not used anymore). However, historic use of PFAS containing foams before 2013 means legacy PFAS contamination exists in the ground, particularly in old fire training grounds.

The analysis conducted by daa confirms that varying levels of PFAS were found across the lands with higher concentrations being found closer to areas where PFAS-firefighting foam was used historically. daa has developed an external risk profile for both ground and surface water, and a suite of appropriate management and remediation options to address PFAS, where found.

It should also be noted that the Proposed Order does not affect any potential mobilisation of PFAS.

3. WATERBODIES IDENTIFICATION AND STATUS

The Water Framework Directive (WFD) 2000/60/EC was adopted in 2000 as a single piece of legislation covering rivers, lakes, groundwater, transitional (estuarine) and coastal waters. In addition to protecting said waters, its objectives include the attainment of 'Good Status' in water bodies that are of lesser status at present and retaining 'Good Status' or better where such status exists at present. 'Good Status' was to be achieved in all waters by 2015 or at least by 2027, as well as maintaining 'high status' where the status already exists. The EPA co-ordinates the activities of the River Basin Districts, local authorities and state agencies in implementing the directive, and operates a groundwater quality monitoring programme undertaking surveys and studies across the Republic of Ireland.

The study area for this assessment is associated with the WFD waterbodies with direct hydrological/hydrogeological connection with daa facilities. This WFD Screening has identified four (4) no. WFD surface waterbodies and two (2) no. WFD groundwater bodies of relevance due to the close proximity and connection of these waterbodies during the operation of the Proposed Order to the Dublin Airport site. These surface waterbodies are directly connected to Dublin Airport through its drainage infrastructure, whilst these groundwater bodies underlie Dublin Airport.

Table 3-1 below presents the WFD Status and Risk Score associated with these waterbodies.

According to the EPA information, the 'Poor' status of the Sluice, Mayne and Santry waterbodies is due to its biological (invertebrate) status or condition, in addition to the 'Poor' hydromorphological conditions in the Sluice. Their oxygenation and nutrient conditions are classified as being 'Good' or 'High', as can be seen in Table 3-1 to Table 3-4 below. Their WFD Risk Score ('At Risk' for Mayne and Santry) are likely related to the historical exceedance of the environmental quality standards established in the EU regulations for some parameters, despite the observed downward trends presented above.

It should be noted that other surface waterbodies indirectly connected to the airport lands but are located further away (associated with Mayne Estuary and Irish Sea), and therefore, outside of the study area mentioned above, were excluded from the assessment due to their distance from the subject site and significant dilution factor through its pathway.

According to the WFD Cycle 3 Liffey and Dublin Bay Catchment Report (EPA, 2024) and the sub-catchment assessment of the Mayne_SC_010 subcatchment carried out by the EPA in 2022, there are a number of pressures within this sub-catchment that impact on the hydrological environment associated mainly with urban run-off and anthropogenic pressures (refer to www.catchments.ie).

Table 3-1. Current WFD Status and Risk Score of the relevant waterbodies (Source: EPA, 2026)

Source	WFD Classification	Waterbody Name/ Code	WFD Status (2019-2024)				Status Confidence	WFD Risk Score (3rd Cycle)
			Biological	Chemical	Hydro-morphological	Overall Ecological		
Surface Water	River Waterbody	Sluice_010 (IE_EA_09S071100)	Poor	Good	Poor	**Poor**	Medium	Review
		Mayne_010 (IE_EA_09M030500)	Poor	Good	N/A	**Poor**	Medium	At Risk
		Santry_010 (IE_EA_09S010300)	Poor	Good	N/A	**Poor**	High	At Risk

Source	WFD Classification	Waterbody Name/ Code	WFD Status (2019-2024)			WFD Risk Score (3rd Cycle)
			Quantitative	Chemical	Overall	
Groundwater	Groundwater Body	Dublin (IE_EA_G_008)	Good	Good	**Good**	Review
		Swords (IE_EA_G_011)	Good	Good	**Good**	At Risk

Table 3-2. Drawdown of WFD Status and Risk Score for Sluice_010 (Source: EPA, 2026)

Waterbody: SLUICE_010

Name:	**SLUICE_010**	Code:	**IE_EA_09S071100**
Subcatchments:	09_17 Mayne_SC_010	Catchments:	09 Liffey and Dublin Bay
Latitude:	**53.429719**	Longitude:	**-6.195631**
Cycle 1 RBD:	**Eastern**	Local Authority:	**Fingal County Council**
Waterbody Category:	**River**	WFD Risk:	**Review**
Protected Area:	**No**	High Status Objective:	**No**
Heavily Modified:	**Unknown**	Artificial:	**Unknown**
Area (Km^2):	**N/A**	Length (Km):	**15.17**
Transboundary:	**No**	Canal:	**No**

Status	Assessment Technique	Status Confidence	Value
▼ Ecological Status or Potential	Monitoring	medium confidence	Poor
▼ Biological Status or Potential			Poor
Invertebrate Status or Potential			Poor
▼ Supporting Chemistry Conditions			Pass
▼ General Conditions			Pass
▼ Oxygenation Conditions			Pass
Dissolved Oxygen (% Sat)			Pass
Other determinand for oxygenation conditions			High
▼ Acidification Conditions			Pass
pH			Pass
▼ Nutrient Conditions			Pass
▼ Nitrogen Conditions			High
Nitrate			High
Ammonium			High
▼ Phosphorous Conditions			High
Orthophosphate			High

Table 3-3. Drawdown of WFD Status and Risk Score for Mayne_010 (Source: EPA, 2026)

Waterbody: MAYNE_010

Name:	**MAYNE_010**	Code:	**IE_EA_09M030500**
Subcatchments:	09_17 Mayne_SC_010	Catchments:	09 Liffey and Dublin Bay
Latitude:	**53.414241**	Longitude:	**-6.1925755**
Cycle 1 RBD:	**Eastern**	Local Authority:	**Fingal County Council**
Waterbody Category:	**River**	WFD Risk:	**At risk**
Protected Area:	**No**	High Status Objective:	**No**
Heavily Modified:	**Unknown**	Artificial:	**Unknown**
Area (Km²):	**N/A**	Length (Km):	**16.52**
Transboundary:	**No**	Canal:	**No**

SW 2019-2024

Status	Assessment Technique	Status Confidence	Value
▼ Ecological Status or Potential	Monitoring	medium confidence	Poor
▼ Biological Status or Potential			Poor
Invertebrate Status or Potential			Poor
▼ Supporting Chemistry Conditions			Good
▼ General Conditions			Good
▼ Oxygenation Conditions			Pass
Dissolved Oxygen (% Sat)			Pass
Other determinand for oxygenation conditions			High
▼ Acidification Conditions			Pass
pH			Pass
▼ Nutrient Conditions			Good
▼ Nitrogen Conditions			Good
Nitrate			Good
Ammonium			High
▼ Phosphorous Conditions			Good
Orthophosphate			Good

Table 3-4. Drawdown of WFD Status and Risk Score for Santry_010 (Source: EPA, 2026)

Waterbody: SANTRY_010

Name:	**SANTRY_010**	Code:	**IE_EA_09S010300**
Subcatchments:	09_17 Mayne_SC_010	Catchments:	09 Liffey and Dublin Bay
Latitude:	**53.4063876**	Longitude:	**-6.2550904**
Cycle 1 RBD:	**Eastern**	Local Authority:	**Fingal County Council**
Waterbody Category:	**River**	WFD Risk:	**At risk**
Protected Area:	**No**	High Status Objective:	**No**
Heavily Modified:	**Unknown**	Artificial:	**Unknown**
Area (Km^2):	**N/A**	Length (Km):	**7.60**
Transboundary:	**No**	Canal:	**No**

SW 2019-2024

Status	Assessment Technique	Status Confidence	Value
▾ Ecological Status or Potential	Monitoring	high confidence	Poor
▾ Biological Status or Potential			Poor
Invertebrate Status or Potential			Poor
▾ Supporting Chemistry Conditions			Good
▾ General Conditions			Good
▾ Oxygenation Conditions			Pass
Dissolved Oxygen (% Sat)			Pass
Other determinand for oxygenation conditions			High
▾ Acidification Conditions			Pass
pH			Pass
▾ Nutrient Conditions			Good
▾ Nitrogen Conditions			Good
Nitrate			Good
Ammonium			Good
▾ Phosphorous Conditions			Good
Orthophosphate			Good

4. PROPOSED ORDER OPERATIONAL SCENARIO

4.1 General

As mentioned in Section 1.1 above, the Proposed Order relates to the following conditions:

- The amendment of the permitted 32mppa Conditions will involve a change in the operational conditions of the Airport to be in a position to process more passengers.
- No physical works are either included as part of the Proposed Order or are required in order to facilitate the Proposed Order.
- In this context, and taking into account available stands, gates, baggage handling and surface accessibility, the Airport Capacity Report (2026) demonstrates that the estimated capacity of the existing facilities, infrastructure, operational processes and current demand profile of Dublin Airport is 40.5mppa.

Therefore, what is being assessed in this report is:

- The growth in passenger numbers to 40mppa by 2029 (2029 Proposed Operation);
- From the 2025 bases of (i) 2025 Permitted Operation [32mppa]; and (ii) 2025 Current Operation [36mppa].

The 40mppa assessment scenario assumes that the embedded operational measures described in the Drainage Report associated with the proposal are implemented.

4.2 Effects of Proposed Order Scenario on Water Quality

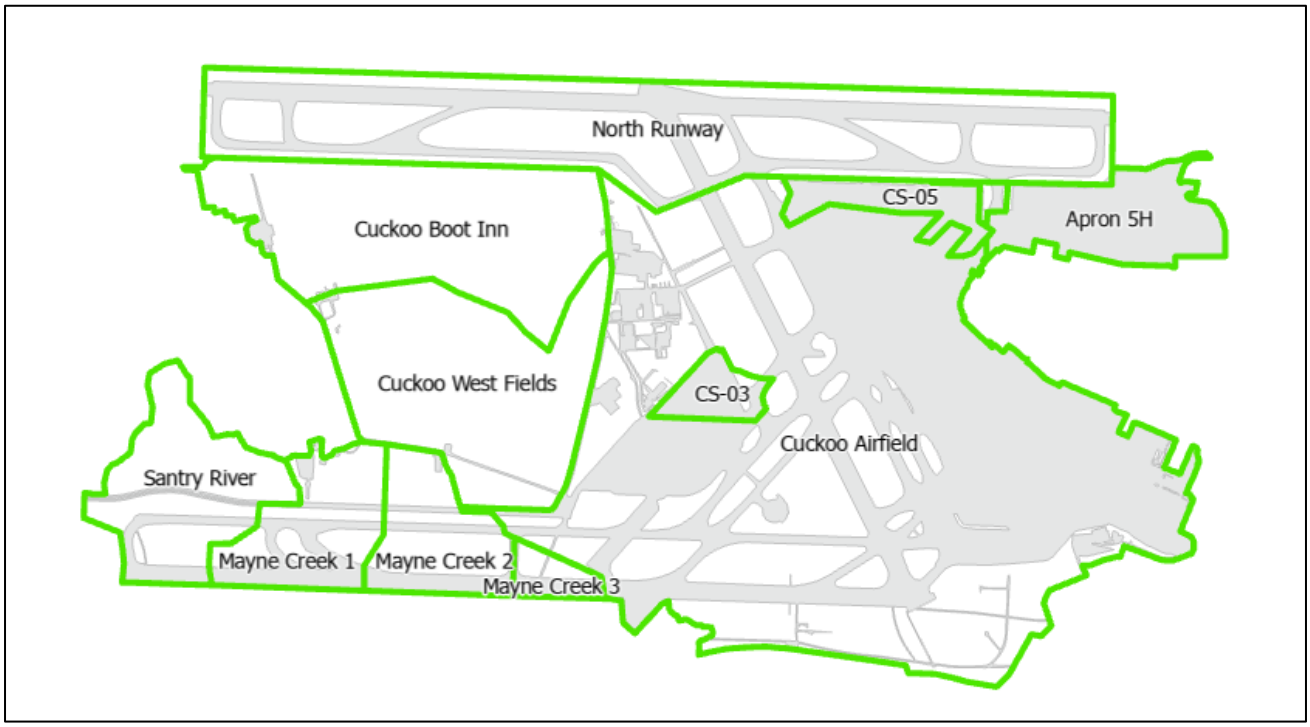
4.2.1 Modelling Background

An assessment of de-icer pollution impacts from the airport passenger growth as part of the Proposed Order was prepared by Gresham Smith (2026). This assessment comprises a conservative numerical model which simulated the mass load of deicer chemical generated COD lost to receiving waters under the base cases and the 40mppa assessment scenario.

The model was based on estimates of flow and COD mass load in contaminated stormwater released to receiving waters. The pollution model includes simulation of 30 seasons of historical weather data, application of aircraft and pavement de-icers at Dublin Airport, capture of de-icers in stormwater runoff, diversion of contaminated stormwater runoff to pollution control facilities across the airport, and discharge of contaminated stormwater to the foul sewer.

The model has estimated the COD released to all four adjacent receiving waters: Cuckoo Stream, Forest Little River, Mayne River, and Santry River. Their modelled catchments are presented in Figure 4.1 below.

Figure 4.1. Catchment Areas considered in the Model



4.2.2 Results of the Model

The modelling scenarios are based on the following conditions:

- 32 mppa (2025 Permitted Operation). Uses 32 mppa winter flight forecast for simulations and 2025 drainage and deicer operation conditions.
- 36 mppa (2025 Current Operation). Same as 32 mppa, but with 36 mppa flight forecast
- 40 mppa (2029 Proposed Operation). 40 mppa flight forecast with Apron 5H development completed and the associated pollution control system in operation, and embedded operational measures implemented.

The results are then subject to comparison of de-icers released to stream (not captured) over 30 seasons of simulated weather conditions.

Figure 4.2. Model Results – COD Mass Load to Cuckoo Catchment

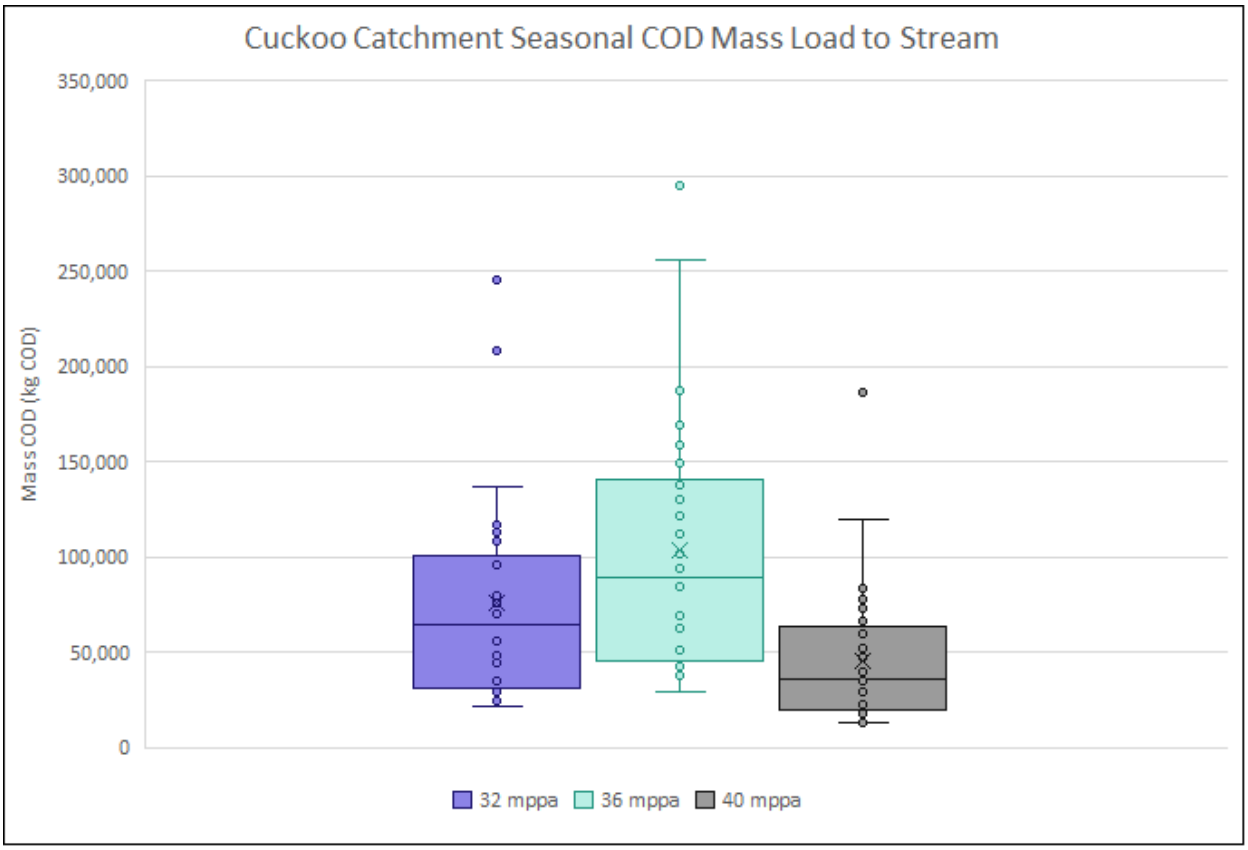


Figure 4.3. Model Results – COD Mass Load to Little Forest Catchment

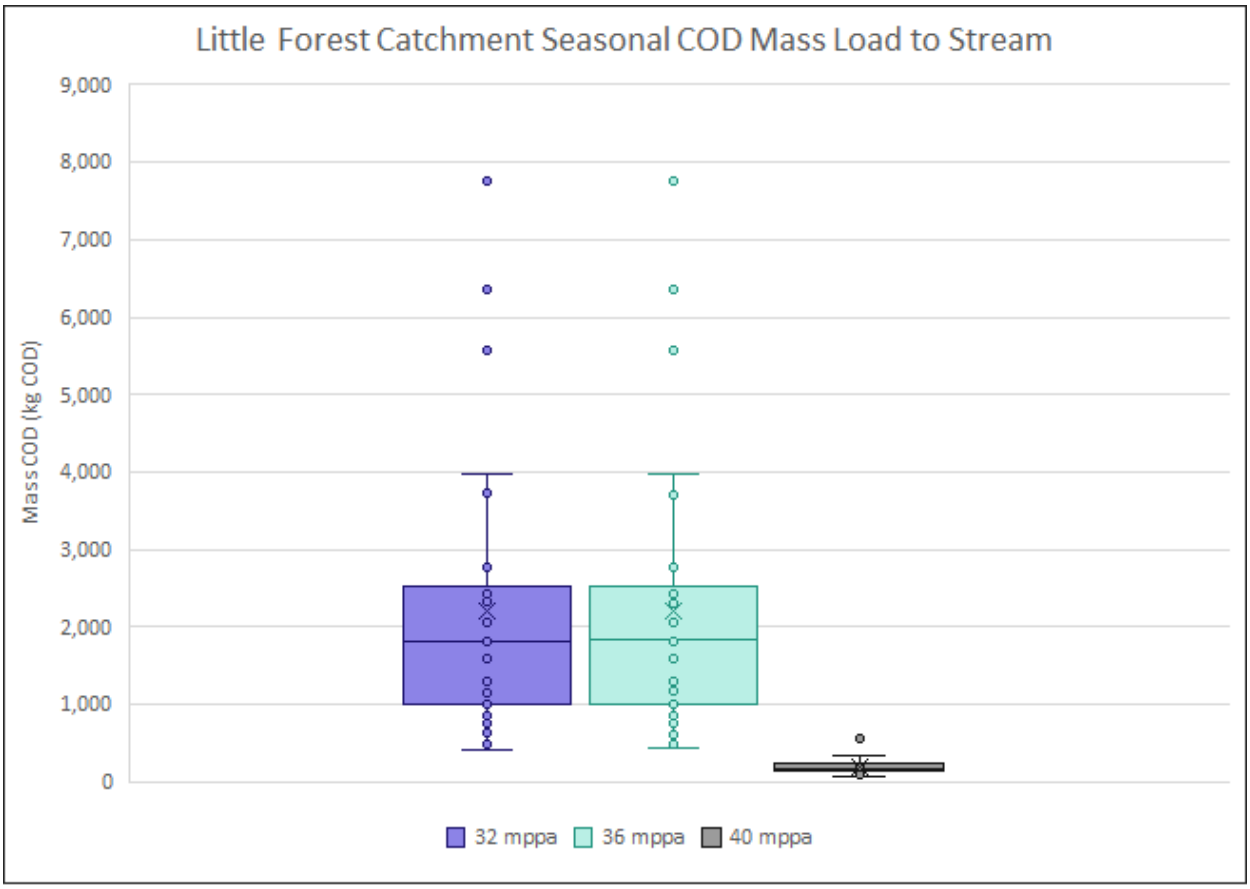


Figure 4.4. Model Results – COD Mass Load to Mayne Catchment

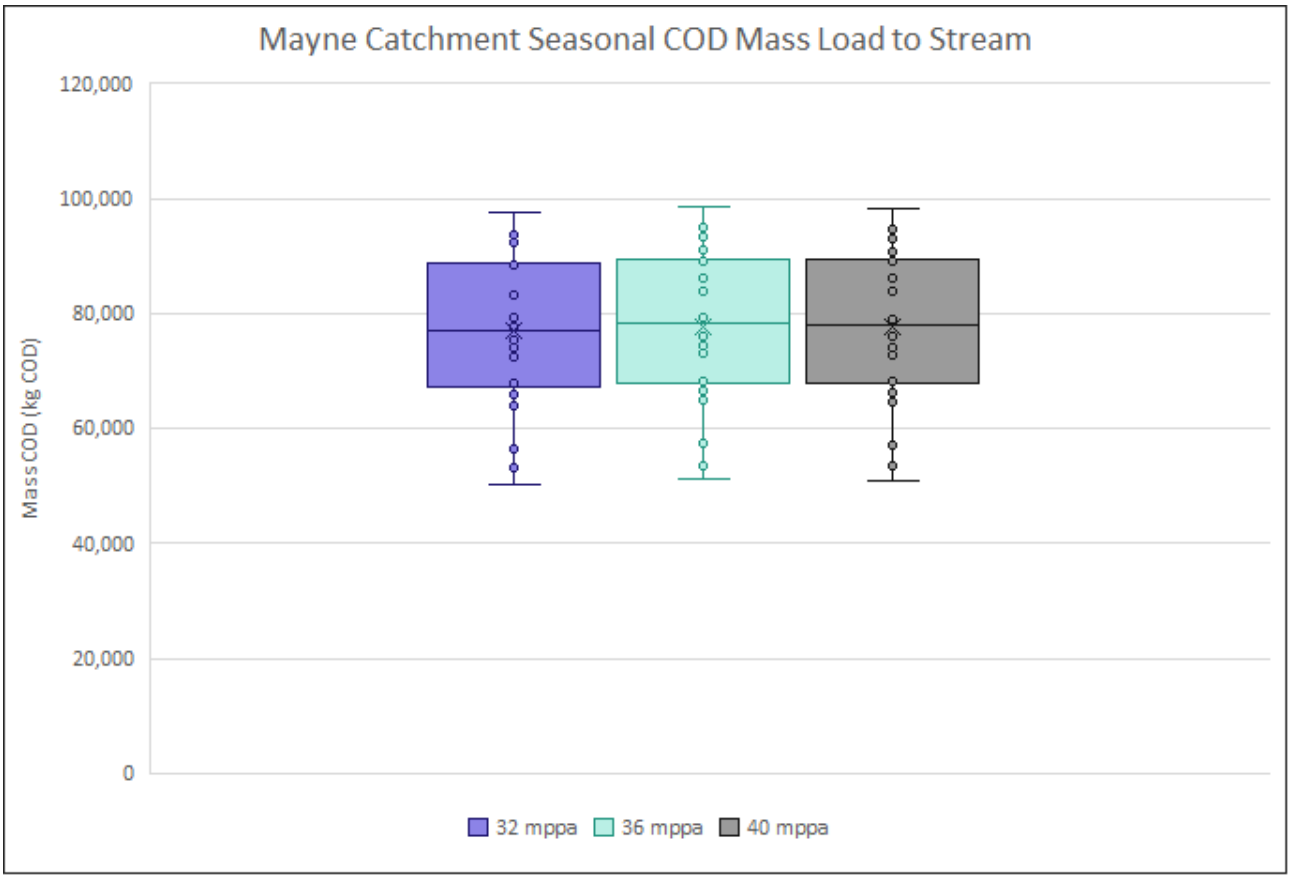


Figure 4.5. Model Results – COD Mass Load to Santry Catchment

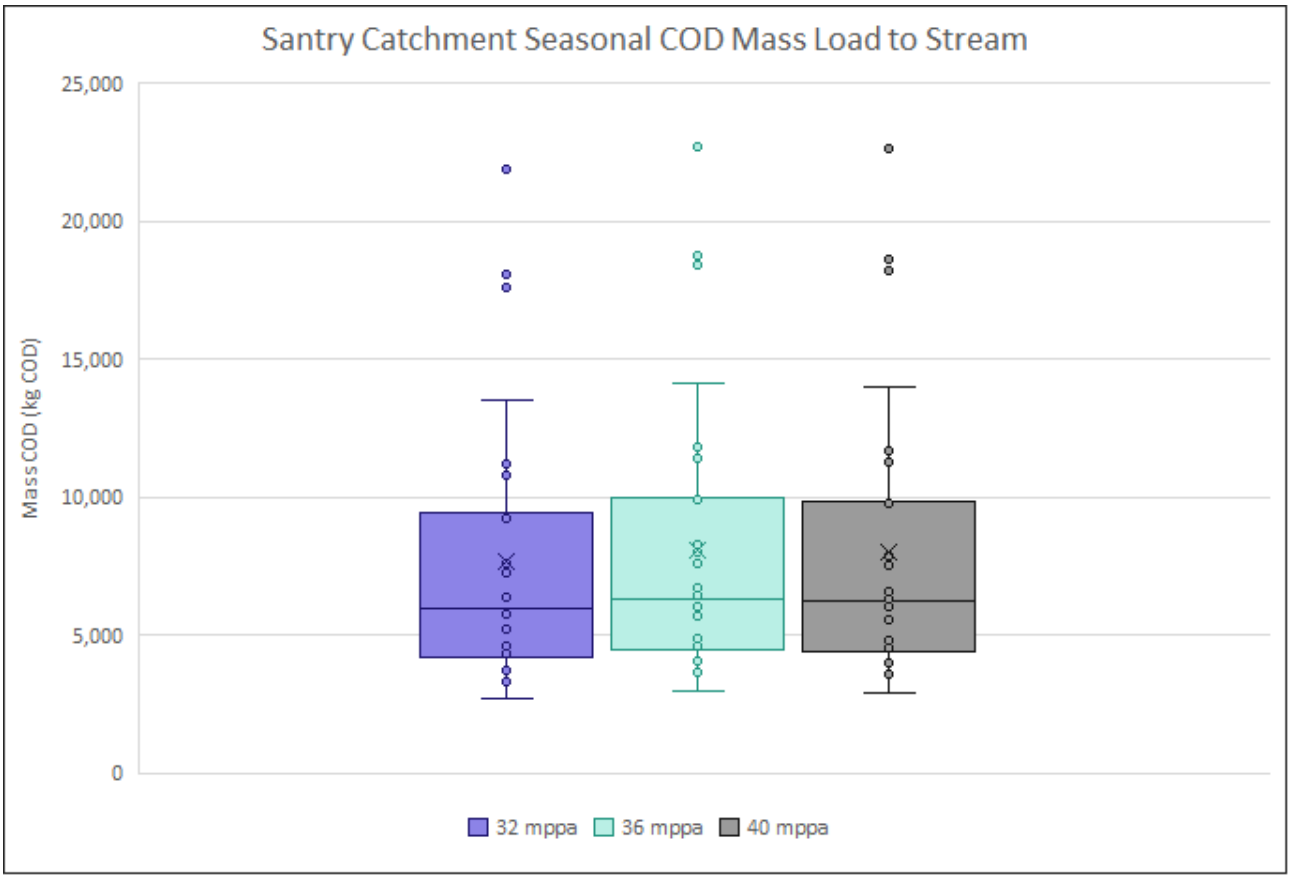


Table 4-1. Summary of Modelling Results

WFD Waterbody	Watercourse	Mean COD Mass Loading Value [kg COD]		
		32 mmpa	36 mmpa	40 mmpa
Mayne_010	Cuckoo Stream	64,573	89,570	36,331
Sluice_010	Forest Little	1,815	1,832	170
Mayne_010	Mayne River	77,097	78,344	78,034
Santry_010	Santry River	5,967	6,339	6,223

As can be seen from the graphs and Table 4-1 above, a significant reduction in the COD mass load of 59% and 90% is foreseen in the Cuckoo Stream and Forest Little watercourses, respectively, under a 40 mppa scenario, due to imbedded operational measures being implemented at the Cuckoo Pollution Control Facility, and the completion and operation of the Apron 5H pollution control tank.

Most of the COD in the Mayne (Mayne River) and Santry catchments is attributed to pavement de-icer application, as there are no aircraft stands present in these catchments. Pavement de-icer application is independent of aviation count and therefore not subject to change under the Proposed Order conditions.

4.2.3 Conclusions of the Modelling Assessment

The main conclusions of the modelling assessment are as follows:

- None of the four receiving waters experienced a statistically significant increase in COD released to the environment from the 32 or 36 mppa level to the 40 mppa.

- COD released at the 40 mppa development level significantly decreased for the Cuckoo and Forest Little catchments due to improvements in drainage system operation.
- COD released in the Mayne and Santry catchments remained unchanged due to pavement de-icers being the primary source of COD in the catchments, which are independent from aviation count.

5. NO DETERIORATION ASSESSMENT

5.1 Hydrological Environment

5.1.1 Assessment in Mayne_010 Waterbody

5.1.1.1 Cuckoo Stream

A significant reduction in the COD mass load of 44% and 59% is estimated under a 40 mppa scenario (2029 Proposed Operation) is foreseen in the Cuckoo Stream, with respect to the 32 mmpa (2025 Permitted Operation) and 36 mmpa (2025 Current Operation) due to implementation of embedded operational measures.

This reduction will improve the water quality conditions along the watercourse and will certainly accelerate the downward trend already observed at R132 and C9 daa monitoring station points over the 2021-2025 period. It is expected that, due to the expected significant reduction in the COD (chemical oxygen demand) mass load downstream, this improvement in quality will translate into better oxygenation, and therefore biological conditions and enhance the biological status downstream (current Q3 biological status in Mayne River).

As such, the Proposed Order is deemed not to cause any significant deterioration in or negative change in water quality status.

No significant changes in the hydrological and hydromorphological regime (including transport of sediments) are expected in the Cuckoo Stream and the Mayne_010 river waterbody due to the Proposed Order.

5.1.1.2 Mayne River

As mentioned above, COD released in the Mayne River catchment remained unchanged due to pavement de-icers being the primary source of COD in the catchments, which are independent from aviation count.

As such, the Proposed Order will not cause any significant deterioration or negative change in water quality status.

5.1.1.3 Conclusions

The WFD status of the Mayne River has been estimated based on the records obtained at the EPA station 'Hole-in-the-Wall Rd Br', located downstream the confluence of the Mayne River and Cuckoo Stream. The BOD conditions have shown a downward trend over the period 2019-2025 with annual values oscillating slightly above/below the quality standard threshold values. It is expected that, with the embedded operational measures in place, due to the expected reduction in discharged COD concentrations, this downward trend would be more pronounced (due the direct relationship between BOD and COD conditions) and therefore the WFD Risk Score may potentially improve to a 'Not at Risk' condition.

The Proposed Order will not cause any significant deterioration or change in water quality status of the Mayne_010 WFD Waterbody. Since the 2029 Proposed Operation involves a reduction in COD conditions and therefore an improvement in the water quality for this waterbody, it is expected that the Proposed Order will not prevent attainment, or potential to achieve the WFD objectives or to meet the requirements and/or objectives in the third cycle river basin management plan (2022-2027) i.e. Water Action Plan 2024 - A River Basin Management Plan for Ireland.

5.1.2 Assessment in Sluice_010 Waterbody

Significant reduction in the COD mass load of 90% is estimated under a 40 mppa (2029 Proposed Operation) scenario is foreseen in the Forrest Little Stream, with respect to both 32 mmpa (2025 Permitted Operation) and 36 mmpa (2025 Current Operation) due to additional pollution control measures being implemented at the Apron 5H development.

This reduction will improve the water quality conditions along the watercourse. It is expected that this improvement in quality will translate into better oxygenation and biological conditions and enhance the biological status downstream (current Q3 and Q3-4 biological rating).

As such, the Proposed Order will not cause any significant deterioration or change in water quality status of the waterbody or prevent attainment, or potential to achieve the WFD objectives or to meet the requirements and/or objectives in the third cycle river basin management plan (2022-2027) i.e. Water Action Plan 2024 - A River Basin Management Plan for Ireland.

5.1.3 Assessment in Santry_010 Waterbody

COD released in the Santry River catchment remained unchanged due to pavement de-icers being the primary source of COD in the catchments, which are independent from aviation count. As such, the Proposed Order will not cause any significant deterioration or negative change in water quality status. Hence, it is expected that the Proposed Order will not prevent attainment, or potential to achieve the WFD objectives or to meet the requirements and/or objectives in the third cycle river basin management plan (2022-2027) i.e. Water Action Plan 2024 - A River Basin Management Plan for Ireland.

5.2 Hydrogeological Environment

The Proposed Order will have a no effect on local recharge to ground as it will not involve the introduction of new/redeveloped impermeable area.

As such, the Proposed Order will not cause any deterioration or change in groundwater quality/quantity status.

5.3 Assessment in Terms of Future Good Status

The WFD Objectives of achieving 'Good' Status by 2027 are not currently achieved for the relevant river waterbodies (Mayne_010, Sluice_010, and Santry_010). Currently, the EPA classifies the WFD Ecological Status for these waterbodies as 'Poor' during the period 2016-2021 based on current monitoring with a current WFD River Waterbody risk score of 1a, 'At risk of not achieving good status' by 2027 (with the exception of Sluice_010, whose risk score is under review). Therefore, the objective is currently not being achieved. These 'Poor' statuses are mainly based on their biological conditions.

Given that the 2029 Proposed Operation scenario (inclusive of embedded operational measures) involves a reduction in COD conditions and therefore an improvement in the water quality for these waterbodies, it is expected that the Proposed Order will not prevent attainment, or potential to achieve the WFD objectives or to meet the requirements and/or objectives in the third cycle river basin management plan (2022-2027) i.e. Water Action Plan 2024 - A River Basin Management Plan for Ireland. The quality conditions will remain unchanged in Santry_010 due to pavement de-icers being the primary source of COD in this catchment, which are independent from aviation count.

Based on the above information it is not considered that any aspects of the Proposed Order will prevent the WFD objectives from being achieved or to meet the requirements and/or objectives in the Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).

5.4 Potential Impact on Water Action Plan Programme of Measures

Based on the findings of this WFD Assessment it is concluded that the Proposed Order will not adversely affect or impede the implementation of the Water Action Plan 2024 Programme of Measures.

As mentioned in Section 3 above, there are a identifies pressures within the Mayne_SC_010 subcatchment associated mainly with urban run-off and anthropogenic pressures. Due to the implementation of embedded operational measures, it is expected an improvement in water quality conditions as explained in Section 5.3 above. The 2029 Proposed Operation scenario involves a reduction in COD conditions and therefore an improvement in the water quality for these waterbodies.

Accordingly, the Proposed Order is consistent with the objectives and measures of the Water Action Plan 2024. It will not conflict with the implementation of the WAP Programme of Measures, and will not prevent attainment, or compromise achievement of the WFD objectives to meet the requirements and/or objectives in the third cycle river basin management plan (2022-2027).

6. CONCLUSIONS

Appendix A contains the background information and the WFD classification elements for surface water body status. Appendix B contains the final 'No Deterioration Assessment' spreadsheet. The colour coded system referred to in Table 1-1 above are used to give a visual impression of the surface water assessment.

The WFD assessment indicates that, based on the current understanding of the Proposed Order, there is no potential for adverse or long-term effects on the involved surface waterbodies (Mayne_010, Sluice_010, and Santry_010). Therefore, it has been assessed that the Proposed Order (2029 Proposed Operation) will not cause any significant deterioration or change in water body status or prevent attainment, or potential to achieve, future good status or to meet the requirements and/or objectives in the third RBMP 2022-2027.

The WFD assessment indicates that there is no potential for adverse or minor temporary or localised effects on the Dublin/Swords groundwater bodies. Therefore, it has been assessed that it is unlikely that the Proposed Order will cause any significant deterioration or change on its water body status or prevent attainment, or potential to achieve the WFD objectives or to meet the requirements and/or objectives in the third RBMP 2022-2027.

The Proposed Order is also consistent with the objectives and Programme of Measures contained in the Water Action Plan 2024. Accordingly, the Proposed Development will not affect compliance with the EU Water Framework Directive, the European Communities (Environmental Objectives) (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009, as amended), or the European Communities (Environmental Objectives) (Groundwater) Regulations 2010 (S.I. No. 9 of 2010, as amended) WFD Article 4 Objectives.

The assessment concludes that the Proposed Development adheres to the Article 4 objectives of the WFD.

The Proposed Development will not:

- Cause deterioration in the status of the involved waterbodies mentioned above;
- Prevent attainment, or potential to achieve good surface water or groundwater status;
- Permanently prevent or compromise the achievement of WFD objectives; or
- Conflict with the implementation of the Water Action Plan 2024 Programme of Measures.

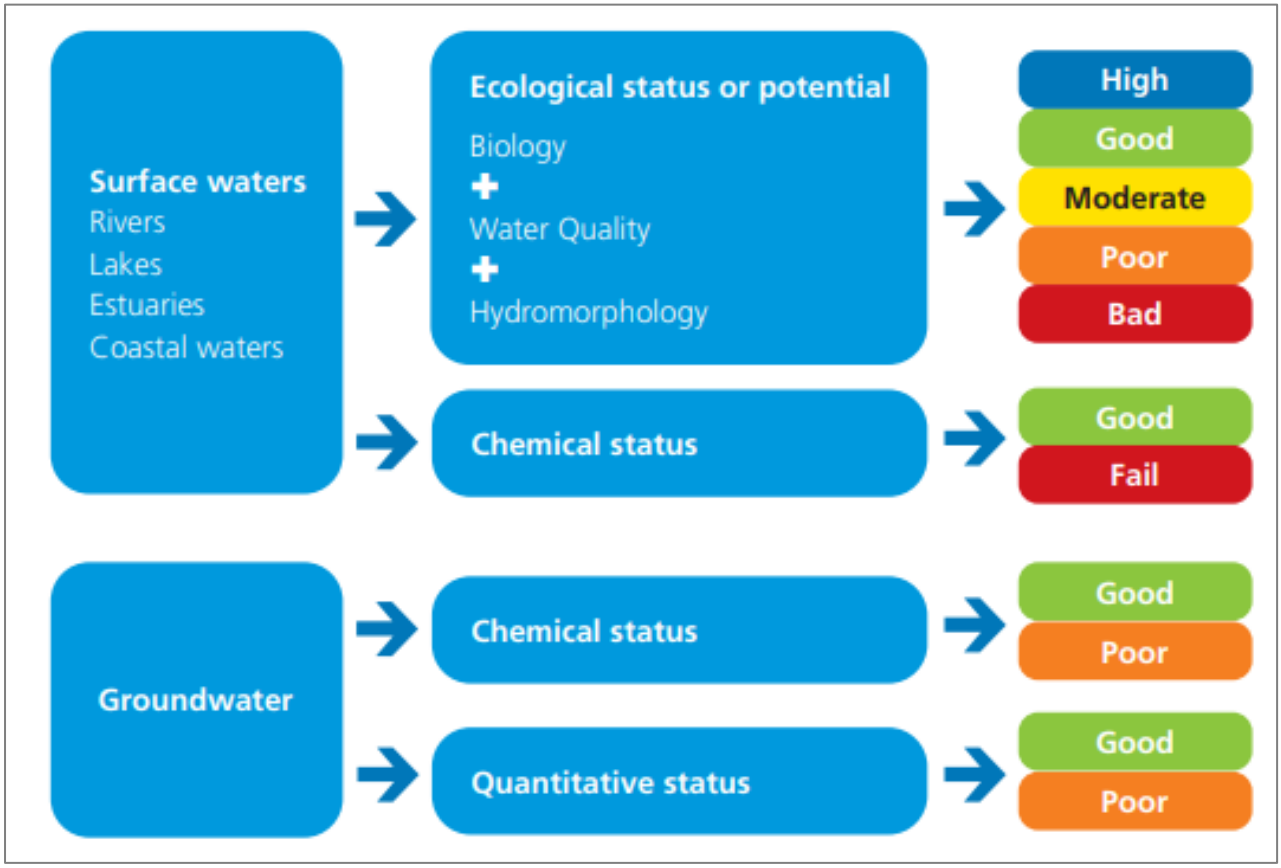
APPENDIX A. WFD ASSESSMENT MATRIX

WATER FRAMEWORK DIRECTIVE ASSESSMENT MATRIX

1.1 Background to Surface Water Body Status & Groundwater Body Status

Under the WFD, surface water body status is classified on the basis of chemical and ecological status or potential. Ecological status is assigned to surface water bodies that are natural and considered by the EPA not to have been significantly modified for anthropogenic purposes (i.e., culverting). Ecological potential is assigned to artificial and man-made water bodies (such as canals), or natural water bodies that have undergone significant modification. The term 'ecological potential' is used as it may be impossible to achieve good ecological status because of modification for a specific use, such as navigation or flood protection. The ecological potential represents the degree to which the quality of the water body approaches the maximum it could achieve. The worst-case classification is assigned as the overall surface water body status, in a 'one-out all-out' system (i.e., by taking the worst case of all the combined risk outcomes). This system is summarised below in Figure 1.

Figure 1. WFD Classification Elements for surface water body status (Source: EPA, 2026)



1.1.2 Chemical Status

Chemical status is defined by compliance with environmental standards for chemicals that are priority substances and/or priority hazardous substances, in accordance with the Environmental Quality Standards Directive (2008/105/EC). This is assigned on a scale of good or fail. Surface water bodies are only monitored for priority substances where there are known discharges of these pollutants; otherwise, surface water bodies are reported as being at good chemical status.

1.1.3 Ecological Status

Ecological status or potential is defined by the overall health or condition of the watercourse. This is assigned on a scale of High, Good, Moderate, Poor or Bad, and on the basis of four classification elements or 'tests', as follows:

- **Biological:** This test is designed to assess the status indicated by a biological quality element such as the abundance of fish, invertebrates or algae and by the presence of invasive species. The biological quality elements can influence an overall water body status from Bad through to High.
- **Physico-chemical:** This test is designed to assess compliance with environmental standards for supporting physicochemical conditions, such as dissolved oxygen, phosphorus and ammonia. The physicochemical elements can only influence an overall water body status from Moderate through to High.
- **Specific pollutants:** This test is designed to assess compliance with environmental standards for concentrations of specific pollutants, such as zinc, cypermethrin or arsenic. As with the physico-chemical test, the specific pollutant assessment can only influence an overall water body status from Moderate through to High.
- **Hydromorphology:** For natural waterbodies, this test is undertaken when the biological and physicochemical tests indicate that a water body may be of High status. It specifically assesses elements such as water flow, sediment composition and movement, continuity, and structure of the habitat against reference or 'largely undisturbed' conditions. If the hydromorphological elements do not support High status, then the status of the water body is limited to Good overall status. For artificial or highly modified waterbodies, hydromorphological elements are assessed initially to determine which of the biological and physico-chemical elements should be used in the classification of ecological potential. In all cases, assessment of baseline hydromorphological conditions are an important factor in determining possible reasons for classifying biological and physicochemical elements of a water body as less than Good, and hence in determining what mitigation measures may be required to address these failing water bodies.

1.2 Background to Groundwater Body Status

Under the WFD, groundwater body status is classified on the basis of quantitative and chemical status. Status is assessed primarily using data collected from the EPA monitoring network; therefore, the scale of assessment means that groundwater status is mainly influenced by larger scale effects such as significant abstraction or widespread/ diffuse pollution. The worst-case classification is assigned as the overall groundwater body status, in a 'one-out all-out' system. This system is summarised in Figure 2 below.

1.2.1 Quantitative Status

Quantitative status is defined by the quantity of groundwater available as baseflow to watercourses and water-dependent ecosystems, and as 'resource' available for use as drinking water and other consumptive purposes. This is assigned on a scale of Good or Poor, and on the basis of four classification elements or 'tests' as follows:

- **Saline or other intrusions:** This test is designed to identify groundwater bodies where the intrusion of poor quality water, such as saline water or water of different chemical composition, as a result of groundwater abstraction is leading to sustained upward trends in pollutant concentrations or significant impact on one or more groundwater abstractions.
- **Surface water:** This test is designed to identify groundwater bodies where groundwater abstraction is leading to a significant diminution of the ecological status of associated surface water bodies.
- **Groundwater Dependent Terrestrial Ecosystems (GWDTEs):** This test is designed to identify groundwater bodies where groundwater abstraction is leading to "significant damage" to associated GWDTEs (with respect to water quantity).

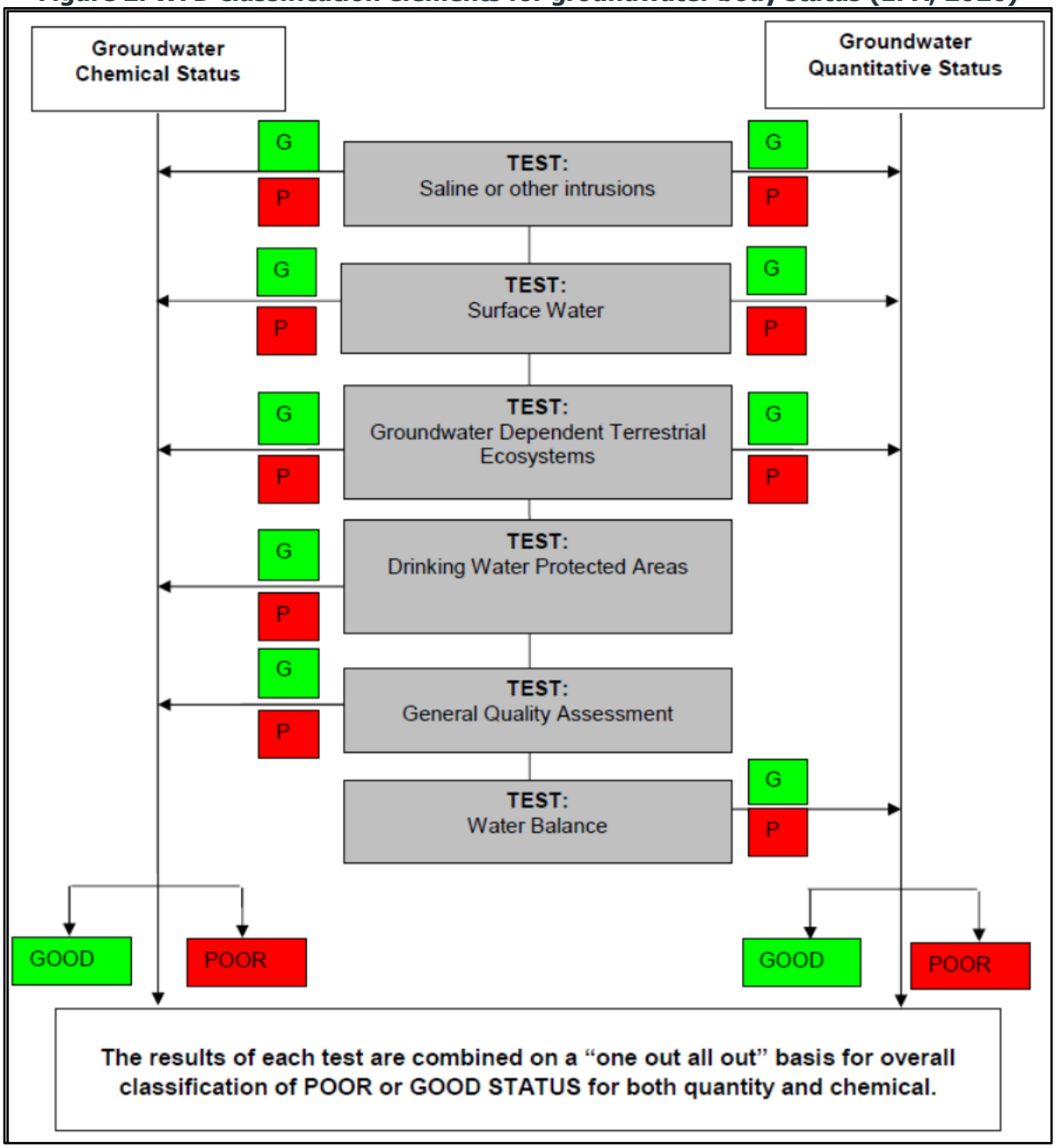
- **Water balance:** This test is designed to identify groundwater bodies where groundwater abstraction exceeds the "available groundwater resource", defined as the rate of overall recharge to the groundwater body itself, as well as the rate of flow required to meet the ecological needs of associated surface water bodies and GWDTEs.

1.2.2 Chemical Status

Chemical status is defined by the concentrations of a range of key pollutants, by the quality of groundwater feeding into watercourses and water-dependent ecosystems and by the quality of groundwater available for drinking water purposes. This is assigned on a scale of Good or Poor, and on the basis of five classification elements or 'tests' as follows:

- **Saline or other intrusions:** This test is designed to identify groundwater bodies where the intrusion of poor-quality water, such as saline water or water of different chemical composition, as a result of groundwater abstraction is leading to sustained upward trends in pollutant concentrations or significant impact on one or more groundwater abstractions.
- **Surface water:** This test is designed to identify groundwater bodies where groundwater abstraction is leading to a significant diminution of the chemical status of associated surface water bodies.
- **GWDTEs:** This test is designed to identify groundwater bodies where groundwater abstraction is leading to "significant damage" to associated GWDTE's (with respect to water quality).
- **Drinking Water Protected Areas (DrWPAs):** This test is designed to identify groundwater bodies failing to meet the DrWPA objectives defined in Article 7 of the WFD or at risk of failing in the future.
- **General quality assessment:** This test is designed to identify groundwater bodies where widespread deterioration in quality has or will compromise the strategic use of groundwater.

Figure 2. WFD classification elements for groundwater body status (EPA, 2026)



APPENDIX B. NON-DETERIORIATION ASSESSMENT

Table 1 - Risk screening of potential to cause deterioration of current WFD status					
	Surface Water	Scheme Elements	**Proposed Order**		Overall Impact
	Sluice_010 (IE_EA_09S071100) **Mayne_010 (IE_EA_09M030500)** **Santry_010 (IE_EA_09S010300)**	Identified Quantitative Impacts	Changes in run-off and COD loading	Changes in Hardstanding Area	
WFD Status	Macrophytes and phytobenthos - combined	Predicted change to status elements (green = none, amber = possibly, red = likely)	No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Macroinvertebrates		No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Fish		No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
Physio-Chemical Status	Total Ammonia	Predicted change to status elements (green = none, amber = possibly, red = likely)	No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Total Nitrogen		No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Oxygenation conditions BOD and COD		**Sluice_010**: Minor/ localised beneficial	No measurable change anticipated.	Localised improvement due to the embedded operational measures, no change in status of WFD element
			Mayne_010: Major Beneficial		Increase in status of one or more WFD element giving rise to a predicted rise in status class for that waterbody. This is due to the embedded operational measures.
			Santry_010: No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Ortho-Phosphate		No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
Hydromorphological Elements	Quantity and dynamics of river flow	Predicted change to status elements (green = none, amber = possibly, red = likely)	No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Connection to Groundwater		No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	River continuity		No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	River depth and width variation bed		No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Structure and substrate of river bed		No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Structure of riparian zone		No measurable change anticipated.	No measurable change anticipated.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status