16 Material Assets (Waste)

16.1 Introduction

16.1.1 This chapter presents the Principal Assessment of the likely significant effects of the Proposed Order on operational waste generation at Dublin Airport. The Principal Assessment compares the 2029 Permitted Operation (32 mppa) and the 2029 Proposed Operation (40 mppa) operational conditions in accordance with the project-wide assessment framework described in Chapter 5: Methodology.

16.1.2 As detailed in Chapter 4, the Proposed Order seeks to amend the existing planning restriction of 32 mppa to 40 mppa and does not involve new physical infrastructure. However, increased passenger numbers may affect waste management through changes in aircraft activity and associated operational characteristics. Accordingly, an assessment has been undertaken to assess the likely significant effects of the 2029 Proposed Operation on waste.

16.1.3 This chapter of the EIAR identifies, describes and assesses the likely significant effects of the Proposed Order arising from changes in operational waste generation at Dublin Airport. The assessment considers the potential effect of changes in operational waste generation at Dublin Airport arising from the Proposed Order and the effect of these changes on the capacity of waste management infrastructure in the Republic of Ireland (herein referred to as Ireland). Indirect effects associated with the management of waste on other environmental factors, including water resources, air quality and noise, are addressed in the relevant chapters of this EIAR, where appropriate.

16.1.4 The assessment is limited to operational waste. The Proposed Order does not include any new airport infrastructure, construction or demolition works, or other physical alterations to the airport estate and would therefore not generate construction or demolition waste.

16.1.5 This chapter was prepared by Lucy Hill BSc (Hons) MSc CRWM MCIWM CEnv, an Associate Director in AECOM's Carbon and ESG Team with 18 years' experience in waste management and resource efficiency including preparing waste impact assessments. Lucy has undertaken the role of waste discipline technical lead for several projects in Ireland including Galway to Oughterard Greenway, Shannon Technology & Energy Park (STEP) and N26 Ballina Bypass and various Nationally Significant Infrastructure Projects (NSIPs) in England including Luton Airport.

16.1.6 This chapter was reviewed by Philip Charles, BSc (Hons), MISEP, CEnv, an Associate Director in AECOM's Carbon and ESG Team, with 24 years' experience in sustainability and circular economy, including the review of materials and waste impact assessment. Philip has been involved in the delivery of a range of infrastructure projects including NSIPs in England, including the A303 Stonehenge project for National Highways and Luton Airport.

16.1.7 Lead Verification of this chapter was undertaken by Ian Davies, BA (Hons), MISEP, CEnv, Director for Carbon and ESG at AECOM, with over 25 years of experience in sustainability project delivery. Ian has worked on a number of infrastructure projects across the aviation, road, rail and energy sectors.

16.1.8 Waste is defined in this chapter in accordance with the European Waste Framework Directive (Directive 2008/98/EC)[1] as:

'any substance or object, which the holder discards or intends or is required to discard'.

[1] The European Parliament and The Council of the European Union, Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, 2008. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008L0098-20251016

16.2 Legislation, Policy and Guidance

16.2.1 This section sets out the legislation, policy and guidance sources that have informed the scope and methodology for assessment of the material assets (waste) factor.

Legislation and National Planning Policy

16.2.2 In addition to the Dublin Airport (Passenger Capacity) Act 2026, the following legislation and national planning policy have informed the scope and methodology for material assets (waste).

European Communities (Waste Directive) Regulations, 2011

16.2.3 European Communities (Waste Directive) Regulations, 2011[2] transpose the requirements of the European Waste Framework Directive (Directive 2008/98/EC)[3]. The European Communities (Waste Directive) Regulations require that waste prevention programmes and waste management plans are established and that they apply the waste hierarchy. The waste hierarchy prioritises waste prevention, followed by preparing for re-use, recycling, other recovery (including energy recovery) and finally disposal.

16.2.4 The assessment of waste within this chapter has taken account of the waste hierarchy in the management of waste.

16.2.5 In Ireland the primary waste legislation is the Waste Management Act 1996[4], as amended, and Section 32 of the Act places a general obligation on the holder of waste to comply with legislation and make sure all wastes are managed within the requirements of the Act. In short, the obligation to manage waste primarily legally lies with the holder of waste, which means the waste producer or the person who is in possession of the waste.

A Waste Action Plan for a Circular Economy

16.2.6 A Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2020-2025[5] sets out Ireland's approach to transitioning to a circular economy, in line with the European Commission's The European Green Deal[6] and a new Circular Economy Action Plan[7].

16.2.7 For municipal waste, the plan supports the provisions and targets of the European Communities (Waste Directive) Regulations[2] by undertaking to introduce recycling targets for waste collectors, standardise bin colours across the state (Ireland), encourage recycling through the waste recovery levy, manage consumer rights with a waste oversight body and improve waste segregation through education and awareness campaign.

National Waste Management Plan for a Circular Economy 2024-2030

16.2.8 The National Waste Management Plan for a Circular Economy 2024-2030[8] sets out a framework for the prevention and management of waste in Ireland for the period 2024 to 2030. The plan's overarching objectives are to:

- Shift the focus away from waste disposal and treatment to make sure materials and products remain in productive use for longer, thereby preventing waste and supporting reuse through a policy framework discouraging resource inefficiency and rewarding circularity;

[2] Government of Ireland, S.I. No. 126/2011 - European Communities (Waste Directive) Regulations 2011 as amended, 2011. Available at: https://www.irishstatutebook.ie/eli/2011/si/126/made/en/print
[3] European Union, Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste, 2018. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018L0851
[4] Office of the Attorney General, Waste Management Act 1996, 1996. Available at: https://revisedacts.lawreform.ie/eli/1996/act/10/front/revised/en/html
[5] Government of Ireland, Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2020-2025, 2020, Available at: https://www.gov.ie/en/publication/4221c-waste-action-plan-for-a-circular-economy/
[6] European Commission, The European Green Deal. Brussels, 11.12.2019. COM(2019) 640 final, 2019. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1588580774040&uri=CELEX%3A52019DC0640
[7] European Commission, A new Circular Economy Action Plan. For a cleaner and more competitive Europe. Brussels, 11.3.2020. COM(2020) 98 final, 2020. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN
[8] Regional Waste Management Planning Offices, National Waste Management Plan for a Circular Economy 2024-2030, 2024. Available at: https://mywaste.ie/sustainability/circular-living/national-waste-management-plan-for-a-circular-economy-2024-2030/

- Make producers who manufacture and sell disposable goods for profit environmentally accountable for the products they place on the market;
- Make sure measures support sustainable economic models (for example by supporting the use of recycled over virgin materials);
- Harness the reach and influence of all sectors including the voluntary sector, R&D, producers/ manufacturers, regulatory bodies, civic society; and
- Support clear and robust institutional arrangements for the waste sector, including through a strengthened role for Local Authorities (LAs).

16.2.9 All three Regional Waste Management Planning Offices have coordinated the preparation of the plan, which is the first National Waste Management Plan for a Circular Economy. The content of this plan has been created through extensive collaboration with key stakeholders, partners, and the wider waste audience. The plan will inform the circular economy and waste management requirements during the operation of the airport.

Regional and Local Planning Policy

Fingal Development Plan 2023 – 2029

16.2.10 The Fingal Development Plan 2023 – 2029[9] sets out the spatial framework to guide future development within Fingal County.

16.2.11 Policies support the principles of the waste hierarchy and a shift towards the circular economy approach.

Dublin Airport Local Area Plan (LAP) 2020

16.2.12 The Dublin Airport LAP[10] sets out circular economy and waste management objectives supporting provision of proposals to aid the transition from a waste management economy to a green circular economy and promote a waste prevention and minimisation programme to target all aspects of waste in the LAP boundary area. Objective WM02 aims to promote a waste prevention and minimisation programme to target all aspects of waste in the LAP boundary area, focusing on all airport commercial and domestic waste producers. The LAP was extended to 2030 in March 2025[11].

Standards and Guidance

Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impacts Assessment Reports (EPA Guidelines)

16.2.13 The EPA Guidelines[12] outline seven generalised degrees of effect significance that are commonly used in EIA, however, when more specific definitions exist within a specialised factor or topic, these should be used in preference to these generalised definitions. The EPA Guidelines do not provide a methodology for waste assessment however the EPA Guidelines have been considered in the assessment.

IEMA Guide to Materials and Waste in Environmental Impact Assessment. Guidance for a proportionate approach

16.2.14 The Institute of Environmental Management and Assessment (IEMA) now the Institute of Sustainability and Environmental Professionals (ISEP) Guide to Materials and Waste in Environmental Impact Assessment, Guidance for a Proportionate Approach[13] (herein referred to as the ISEP Guide) provides guidance on the key terms, concepts and considerations for assessing the environmental impacts and effects of materials and waste, as part of the Environmental Impact Assessment (EIA) process. The

[9] Fingal County Council, Fingal Development Plan 2023 – 2029, 2023. Available at: https://www.fingal.ie/development-plan-2023-2029
[10] Fingal County Council, Dublin Airport Local Area Plan 2020, 2020. Available at: https://www.fingal.ie/dublin-airport-local-area-plan-2020.
[11] Fingal County Council, Councillors approve renewal of Dublin Airport Local Area Plan, 2025. Available at: https://www.fingal.ie/news/councillors-approve-renewal-dublin-airport-local-area-plan.
[12] EPA, Guidelines on the Information to be contained in Environmental Impact Assessment Reports, 2022. Available at: https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf
[13] Institute of Environmental Management and Assessment (IEMA) now the Institute of Sustainability and Environmental Professionals (ISEP), Guide to: Materials and Waste in Environmental Impact Assessment. Guidance for a Proportionate approach, 2020. Available at: https://www.iema.net/media/0t5fwyhj/iema-materials-and-waste-in-eia-march-2020.pdf

guidance is focused on the UK regulatory framework, although the principles are broadly applicable to European Union (EU) jurisdictions, and have been used to inform the assessment methodology for the assessment of the material assets (waste) factor.

16.3 Assessment Methodology

Overall Approach

16.3.1 This section sets out the methodology adopted for the assessment, which has been undertaken having regard to the EPA Guidelines.

- Establishment of the baseline conditions, including identification and assessment of the receiving environment and receptor sensitivity;
- Identification of the potential impacts, and assessment of the magnitude of potential effects, and their significance;
- Consideration of mitigation measures; and
- Assessment of residual effects.

16.3.2 This chapter does not follow the sectoral approach to assessment because the significant environmental effects of waste arisings are best assessed at the national level and are not related to the location of the airport where the waste arises. The local planning policy outlined above, as well as the principles of the waste hierarchy and a shift towards the circular economy approach are considered for the location of the airport e.g. Fingal County and Dublin.

Study Area

16.3.3 The study areas are defined in accordance with the methodology set out in the ISEP Guide[13] and comprise the 'Dublin Airport Site study area', where wastes are generated, and the 'expansive study area', where wastes are managed. The airport study area for waste arising from the operation of the airport comprises the area defined by the Proposed Order, as defined in Chapter 4: Proposed Order.

16.3.4 The expansive study area for assessing the impacts of non-hazardous waste on waste management infrastructure capacity comprises the Ireland due to the need to consider all available waste management infrastructure capacity. Waste management capacity is inferred from national waste arising and waste management data, since baseline data for national waste management capacity (especially landfill capacity) is not frequently published.

16.3.5 The expansive study area for assessing the impacts of hazardous waste on waste management infrastructure capacity also comprises Ireland, although it is noted that a proportion of hazardous waste arising in Ireland is managed outside of Ireland (see Table 16-4). As with non-hazardous wastes, waste management capacity is inferred from national waste arising and waste management data, since baseline data for national waste management capacity is not frequently published.

Identifying Significant Environmental Effects

16.3.6 The potential impacts of the Proposed Order with regards to waste are the effects that waste arisings generated in Dublin Airport Site will have on the available capacity of waste management infrastructure in the expansive study area.

Methodology for Determining Effects

16.3.7 The main impacts when the order is in effect will be associated with the management of waste arising from passengers and staff use of the airport and operational and maintenance activities.

16.3.8 In the absence of waste-specific guidance or requirements in Ireland for determining the magnitude and significance of effects, professional judgement, informed by the ISEP Guide[13], relevant waste management data and the experience of the competent waste specialists on comparable infrastructure and operational projects, has been used to define the following approach:

- Establishing the baseline waste arisings and infrastructure capacity for the expansive study area (Ireland);

- Estimating the likely types and quantities of waste that will be generated by the Proposed Order; and
- Comparing the likely waste arisings from the airport to the baseline waste arisings and confirming whether sufficient management capacity is expected to be available.

Significance Criteria

16.3.9 The criteria used for assessing the magnitude of impacts and significance of effects have been adapted from the methodology set out within the ISEP Guide[13] to align with the availability of baseline data published in Ireland. In the absence of the specific baseline data, required to assess the sensitivity of receptors (in line with the ISEP Guide[13]), medium receptor sensitivity is assumed (the midpoint between capacity of waste management facilities nationally remaining unchanged and capacity reducing very considerably). The assessment criteria are set out within Table 16-1.

Table 16-1 Magnitude of Impact and Significance of Effect Criteria (adapted from ISEP Guide[13])

Magnitude of Impact	Effect (at medium receptor sensitivity)	Significance of Effect	Criteria
No change	Neutral	Not significant	Zero waste generation and disposal from the airport.
Negligible	Neutral or slight	Not significant	Airport waste for disposal is <1% of national waste arisings (for the relevant categories of waste).
Minor	Slight	Not significant	Airport waste for disposal is 1-5% of national waste arisings (for the relevant categories of waste).
Moderate	Moderate	Significant	Airport waste for disposal is 6-10% of national waste arisings (for the relevant categories of waste).
Major	Moderate, large or very large	Significant	Airport waste for disposal is >10% of national waste arisings (for the relevant categories of waste).

Application of the Assessment Framework

16.3.10 The assessment framework comprises:

- Principal Assessment - compares the 2029 Permitted Operation (Passenger Cap retained 32 mppa) and 2029 Proposed Operation (Passenger Cap amended to 40 mppa) operational conditions to identify the environmental effects of the Proposed Order.
- Supporting Assessment 1 – 2023 Baseline Operation (32 mppa) vs Proposed Operation (2029, 40 mppa).
- Supporting Assessment 2 – Current Operation (2025, 36.4 mppa) vs Proposed Operation (2029, 40 mppa).
- Supporting Assessment 3 – 2025 Current Operation (36.4 mppa) vs 2029 Permitted Operation (32 mppa).

16.3.11 As set out in Chapter 5: Methodology, the Principal Assessment compares the 2029 Permitted Operation with the 2029 Proposed Operation. Both operational conditions are assessed for the same future year and against the same Future Receiving Environment and other baseline assumptions. The comparison therefore identifies the change in waste effects associated with the Proposed Order relative to the 2029 Permitted Operation. This comparison provides the basis for identifying likely significant effects, determining any additional mitigation measures and reporting residual effects.

16.3.12 Supporting Assessment 1 has been undertaken to provide context on the overall operational change between the established environmental baseline (2023) and the future operation under the Proposed Order (2029).

16.3.13 Supporting Assessment 2 has been undertaken to provide context on the operational change between current airport operations (2025) and the future operation under the Proposed Order (2029).

16.3.14 Supporting Assessment 3 has been undertaken to provide context on the operational change between current airport operations (2025) and the future permitted airport operation (2029) if the Proposed Order is not made.

16.3.15 The supporting assessments assist the understanding of the operational reduction that would be required to return to the currently permitted passenger capacity. Supporting Assessment 3 has been included because comparison with current airport operations provides useful operational context for interpreting the assessment findings.

Limitations and Assumptions

16.3.16 This assessment has been developed based on the following limitations and assumptions:

- All third-party data used to generate the baseline, for example from the EPA, is assumed to accurately reflect the current status of waste arisings and management in the adopted study areas;
- The environmental impact of waste management at established third-party waste management facilities is scoped out of the assessment since it is assumed these facilities will be operating under relevant authorisations and will therefore have been subject to site-specific assessments;
- Other environmental impacts associated with the management of waste when the Proposed Order is in effect , for example, on environmental factors, including water resources, air quality, noise or traffic resulting from the generation, handling, on site temporary storage or off-site transport of waste, are addressed in the relevant chapters where appropriate;
- The Current Receiving Environment (Section 16.4) for waste arising and waste management comprises the latest available data collated and published by the EPA on a national basis;
- There is no collated published information on the potential changes to the national waste management capacity or national waste arisings and management for the future operation of the airport. Accordingly, the current baseline is assumed to apply as the Future Receiving Environment, as set out in Section 16.5;
- Information on the waste likely to arise from operation of the airport, available at the time of writing, has been used to inform the assessment; and
- Information on waste arising from airline operations and hazardous waste for the airport's current operation was not available to inform the assessment and is therefore a limitation of the operational waste assessment. Based on hazardous waste arisings from another airport for which hazardous waste data is publicly available[14] with 18 mppa (21 tonnes per year, 0.001 kg per passenger) it is assumed that if extrapolated up to 40 mppa hazardous waste would be less than 50 tonnes per year.

16.4 Current Receiving Environment

Municipal Waste Arisings and Management in Ireland

16.4.1 Baseline information on waste arisings and waste management in Ireland has been derived from the most recent data collated and published by the EPA. The Current Receiving Environment is therefore based on 2024 data and considers the waste streams relevant to the operation of Dublin Airport, including municipal waste.

[14] Luton Rising, Table 19.54: Estimated operation waste of London Luton Airport Expansion Development Consent Order Volume 5: Environmental Statement Chapter 19: Waste and Resources, 2023. Available at: https://nsip-documents.planninginspectorate.gov.uk/published-documents/TR020001-000674-5.01%20Environmental%20Statement%20Chapter%2019%20Waste%20and%20Resources.pdf

16.4.2 Municipal waste is made up of household waste and commercial waste (similar to household waste). This includes residual, recyclable, organic, bulky and Waste Electrical and Electronic Equipment (WEEE) waste[15]. The EPA data shows that 3,110,098 tonnes of municipal waste was generated in 2024.

16.4.3 Table 16-2 and Table 16-3 (quantity and percentage respectively) sets out how the municipal waste generated was managed and treated in Ireland in 2024, as reported by EPA[15]. In 2024, approximately 1.3 million tonnes (41%) of municipal waste was sent for incineration with energy recovery, approximately 0.83 million tonnes (27%) were recycled, and 0.49 million tonnes (16%) were composted. Disposal to landfill accounted for approximately 15% (0.47 million tonnes)[15]. Ireland achieved a 43% recycling rate in 2024 against a target of 55% by 2025.

Table 16-2 Municipal Waste Generated, Managed and Treated in Ireland in 2024 (tonnes)[15]

Treatment Type	Quantity (tonnes)
	2024
Recycled	828,427
Composted	493,537
Incineration with Energy Recovery	1,278,279
Landfill	473,121
Unmanaged	33,375
Preparing for reuse	0
Other recovery	3,359
Total	**3,110,098**

Table 16-3 Municipal Waste Generated, Managed and Treated in Ireland in 2024 (%)[15]

Treatment type	Quantity (%)
	2024
Recycled	27
Composted	16
Incineration with Energy Recovery	41
Landfill	15
Unmanaged	1.1
Other recovery	0.1

16.4.4 In 2024, of the 3.11 million tonnes of municipal waste generated, approximately 0.41 million tonnes (13%) was bulky waste, and 2.7 million tonnes (13%) was household or similar waste[15].

16.4.5 In 2024, almost 1.2 million tonnes (37%) of municipal waste was exported, of which approximately 54% was recycled, 30% was incinerated (with energy recovery), and 14% was composted[15].

Hazardous Waste Arisings and Management in Ireland

16.4.6 The EPA reported that 396,651 tonnes of hazardous waste were generated in Ireland in 2024[16] and managed via the management routes shown in Table 16-4. There is no hazardous waste landfill capacity in Ireland[17], so all hazardous waste that needs to be landfilled is exported for management (Hazardous waste (excluding soils) - exported for treatment in the table below). Hazardous municipal waste comprised 7% (25,853 tonnes) of Ireland's hazardous waste generated in 2024[16].

[15] Environmental Protection Agency, Municipal Waste Statistics for Ireland. EPA waste data release July 2026. Latest reference year 2024. Available at: https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/municipal/
[16] Environmental Protection Agency, Hazardous waste statistics for Ireland. EPA waste data release 02 March 2026. Latest reference year 2024. Available at: https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/hazardous/
[17] Environmental Protection Agency, Waste infrastructure in Ireland. EPA waste data release 26 March 2026. Latest reference year 2025. Available at: https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/infrastructure/

Table 16-4 Hazardous Waste Generation and Management in 2024[16]

Waste type and management route	Quantity (tonnes) 2024
Hazardous waste - treated at Irish hazardous waste treatment facilities	131,112
Contaminated soil - treated in Ireland	40,696
Treated on-site of generation (excluding soil)	15,929
Hazardous waste (excluding soils) - exported for treatment	208,914
Contaminated soil - exported for treatment	0
Total	**396,651**

Dublin Airport Waste Arisings and Management

16.4.7 daa monitors and reports operational waste arising from its activities at Dublin Airport, as shown in Table 16-5. The Dublin Airport Waste Minimisation Plan[18] sets a target to reduce operational, non-hazardous municipal solid waste from 0.164 kg per passenger in 2019 to 0.116 kg per passenger in 2030. This target has informed the assessment of operational waste arisings presented in Table 16-5.

16.4.8 For the latest available data (2025), operational waste arisings were 5,601 tonnes based on 36.4 mppa, equivalent to 0.154 kg per passenger. The 2025 waste arisings have been extrapolated to 32 mppa using this waste per passenger rate, resulting in estimated operational waste arisings of 4,928 tonnes. This provides an equivalent waste arising for the 32 mppa passenger level used in the assessment.

Table 16-5 Dublin Airport Operational Waste Arising

Baseline year	Passenger numbers (mppa)	Waste per passenger (kg)	Total operational waste (tonnes)
Baseline			
2025	36.4	0.154	5,601
2025 operational waste extrapolated back to 32 mppa	32	0.154	4,928

16.4.9 Data on quantities of hazardous waste generated by the airport are not available, but would include batteries, oils, paints, fluorescent light bulbs, aerosols and waste electrical equipment from maintenance of the existing airport. Current hazardous waste quantities were not available to inform the assessment, however, based on hazardous waste arisings from another airport[14] with 18 million passengers per annum (21 tonnes per year) it is assumed that if this is extrapolated up to 32 mppa, hazardous waste would be 37 tonnes per year, and for 40 mppa, hazardous waste would be 50 tonnes per year.

Current Design and Management Measures

16.4.10 daa has developed a Dublin Airport Waste Minimisation Plan[18], submitted to Fingal County Council (FCC) as required by the Dublin Airport Local Area Plan[10] policies WM01 and WM02. These cover waste management and the circular economy and are to:

"*support, where appropriate, the provision of proposals to aid the transition from a waste management economy to a green circular economy*" and "*promote a waste prevention and minimisation programme to target all aspects of waste in the LAP boundary area, focusing on all airport, commercial and domestic waste producers*" respectively.

16.4.11 The Dublin Airport Waste Minimisation Plan[18] sets several goals and targets that daa aspires to achieve by 2030, including:

[18] daa and Airbiz Zero Waste, Circular Material Flows: daa Waste Minimisation Plan. Version 2, 2021.

- Reduce operational, non-hazardous municipal solid waste: 30% reduction in passenger waste-intensity in 2030 from 0.164 kg in 2019 to 0.116 kg per passenger; and
- Increase operational waste recycling: 60% of operational non-hazardous, municipal solid waste under daa's control to be recycled in 2030.

16.5 Future Receiving Environment

Municipal and Hazardous Waste in Ireland

16.5.1 There is no published forecast of changes in national waste arisings or waste management infrastructure capacity that can be applied to the future operation of Dublin Airport. The Future Receiving Environment has therefore been established using the most recently available published data, as described below.

16.5.2 Municipal waste generation in Ireland increased from approximately 2.7 million tonnes in 2016 to 3.14 million tonnes15 in 2024, with an overall upward trend during this period. While municipal waste arisings may continue to increase in the future, no allowance has been made for such growth in establishing the Future Receiving Environment. Instead, the most recently published municipal waste arisings for 2024 have been carried forward unchanged in the assessment. This is a reasonable approach because it avoids increasing the national waste baseline against which the additional waste associated with the Proposed Order is assessed, thereby ensuring that the relative contribution of the Proposed Order is not understated.

16.5.3 Hazardous waste arisings were higher in 2020 and 2021 than in the period from 2022 to 2024, potentially reflecting changes in waste generation associated with the Covid-19 pandemic[15]. Hazardous waste arisings between 2022 and 2024 show a more consistent pattern. The most recently published hazardous waste arisings for 2024 have therefore been carried forward unchanged to represent the Future Receiving Environment.

Dublin Airport Waste Arisings

16.5.4 Dublin Airport waste arisings for 2029 are estimated using the latest available airport waste data for 2025. These data are used only to derive a representative waste-generation rate of 0.154 kg per passenger. This rate is then applied independently to the 2029 Permitted Operation at 32 mppa and the 2029 Proposed Operation at 40 mppa. The 2025 passenger throughput of 36.4 mppa and the associated total waste arising are therefore not carried forward into either 2029 operational condition.

16.5.5 For the purpose of determining waste arisings in 2029, a scenario where the target to reduce operational, non-hazardous municipal solid waste to 0.116 kg per passenger in 2030 is achieved by 2029 has also been included. Table 16-6 below provides a summary of the total operational waste arisings for Dublin Airport in 2029 under the 2029 Permitted Operations (without the Proposed Order) for both 0.154 kg per passenger and 0.116 kg per passenger. This is compared to the total amount of municipal waste expected to the generated in 2029 in Ireland (based on baseline of 3,110,098 tonnes in 2024 as discussed in 16.5.2 above).

Table 16-6 Dublin Airport Municipal Operational Waste Arising in 2029

Forecast scenario	Passenger numbers (mppa)	Waste per passenger (kg)	Total operational waste (tonnes)	Percentage of total municipal waste generated in Ireland (2024 baseline of 3,110,098 tonnes) (%)
Current (2025) kg per passenger	32	0.154	4,928	0.16
Target kg per passenger is achieved	32	0.116	3,712	0.12

16.5.6 As outlined in the Current Receiving Environment section, waste arisings, data is not available on quantities of hazardous waste generated at Dublin Airport. Hazardous waste arisings have therefore been estimated using the waste per passenger rate derived from the comparator airport identified in

Section 16.4.9. This rate has been extrapolated for passenger levels in 2029 under the 2029 Permitted Operations (32 mppa) resulting in estimated hazardous waste arisings of 37 tonnes. These estimates are presented in Table 16-7. The operational waste in tonnes is also presented as a percentage of total hazardous waste generated in Ireland (2024 baseline of 396,651 tonnes).

Table 16-7 Hazardous Operational Waste Arising

Passenger numbers (mppa)	Operational waste (tonnes)	Percentage of total hazardous waste generated in Ireland (2024 baseline of 396,651 tonnes) (%)
32	37	0.009

16.6 Assessment of Likely Significant Effects

16.6.1 The Principal Assessment compares the 2029 Permitted Operation (Passenger Cap retained 32mppa) and 2029 Proposed Operation (Passenger Cap amended to 40 mppa) operational conditions to identify the environmental effects of the Proposed Order.

Operational Municipal Waste

16.6.2 Table 16-8 presents operational waste arisings for 2029 Permitted Operations (32 mppa) and 2029 Proposed Operations (40 mppa). Under 2029 Permitted Operations the total operational waste arisings range from 3,712 tonnes (based on the 0.116 kg target waste per passenger) to 4,928 tonnes (based on the current 0.154 kg waste per passenger) per annum, equating between 0.12 and 0.16% of total municipal waste generated in Ireland (2024 national baseline, the most recently published data), indicating a negligible magnitude of impact, a neutral or slight effect, which is not significant.

16.6.3 Under the 2029 Proposed Operations (40 mppa) operational waste ranges from 4,640 tonnes (based on the 0.116 kg target waste per passenger) to 6,155 tonnes (based on the current 0.154 kg waste per passenger) per annum, equating between 0.15 and 0.20% of total municipal waste generated in Ireland (2024 national baseline, the most recently published data), indicating a negligible magnitude of impact, a neutral or slight effect, which is not significant.

Table 16-8 Dublin Airport Municipal Operational Waste Arising

Forecast scenario	2029 passenger numbers (mppa)	Waste per passenger (kg)	2029 total operational waste (tonnes)	Percentage of total municipal waste generated in Ireland (2024 baseline of 3,110,098 tonnes) (%)
Assuming current (2025) kg per passenger	32	0.154	4,928	0.16
Assuming target kg per passenger is achieved	32	0.116	3,712	0.12
Assuming current (2025) kg per passenger	40	0.154	6,155	0.20
Assuming target kg per passenger is achieved	40	0.116	4,640	0.15

16.6.4 The increase from 32 mppa to 40 mppa would result in an increase in municipal operational waste equivalent to 0.03% (based on the 0.116 kg target per passenger) and 0.04% (based on the current 0.154 kg per passenger) of total municipal waste generated in Ireland (2024 national baseline, the most recently published data). Both 32 mppa and 40 mppa scenarios (based on the 0.116 kg target per passenger and based on the current 0.154 kg per passenger) indicate a negligible magnitude of impact, a neutral or slight effect, which is not significant.

Operational Hazardous Waste

16.6.5 Table 16-9 presents hazardous waste arisings for 2029 Permitted Operations (32 mppa) and 2029 Proposed Operations (40 mppa). Under 2029 Permitted Operations the total hazardous waste arisings at 32 mppa are estimated as 37 tonnes per year and this is 0.009% total hazardous waste generated in Ireland (2024 national baseline, the most recently published data), indicating a negligible magnitude of impact, a neutral or slight effect, which is not significant.

16.6.6 Under 2029 Proposed Operations, hazardous waste arisings at 40 mppa are estimated as 50 tonnes per year and this is 0.013% total hazardous waste generated in Ireland (2024 baseline, the most recently published data), indicating a negligible magnitude of impact, a neutral or slight effect, which is not significant.

Table 16-9 Hazardous Operational Waste Arising

Passenger numbers (mppa)	Operational waste (tonnes)	Percentage of total hazardous waste generated in Ireland (2024 baseline of 396,651 tonnes) (%)
32	37	0.009
40	50	0.013

16.6.7 The increase from 32 mppa to 40 mppa would result in an increase in hazardous operational waste equivalent to 0.004% of total hazardous waste generated in Ireland (2024 national baseline, the most recently published data). Both 32 mppa and 40 mppa scenarios indicate a negligible magnitude of impact, a neutral or slight effect, which is not significant.

16.7 Cumulative Effects

16.7.1 Chapter 20: In-Combination and Cumulative Effects identifies the potential for interactions between impacts on environmental factors resulting from the Proposed Order and the potential for interactions between impacts from the Proposed Order and other developments (described in Chapter 20), including those undertaken by daa and those by third parties.

16.7.2 No interactions with the material assets (waste) factor were identified in Chapter 20: In-Combination and Cumulative Effects and no interactions with the potential to lead to significant environmental effects on the material assets (waste) factor were identified with other schemes undertaken by daa and those by third parties.

16.7.3 No significant effects relating to waste have been identified for the Proposed Order. Waste arisings will be managed in accordance with the waste hierarchy and through established waste management infrastructure with sufficient available capacity. As the Proposed Order would not give rise to significant waste effects in isolation, it is not considered capable of making a material contribution to a significant cumulative effect when considered in combination with other developments. Accordingly, a detailed cumulative assessment of waste has not been undertaken.

16.8 Indirect, Secondary and Transboundary Effects

16.8.1 Indirect and secondary effects are described in the EPA Guidelines as “effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway”.

16.8.2 Transboundary effects are those affecting another state or jurisdiction. Waste is exported outside of Ireland, therefore, there is potential for direct impacts on waste management capacity in other states or jurisdictions. However, the national baseline used in the assessment is national waste arisings, which include both waste managed within Ireland and exported.

16.8.3 The potential for indirect and secondary environmental effects has been considered in environmental factors, including water resources, traffic, air quality or noise are addressed in the relevant chapters, where appropriate.

16.9 Mitigation and Monitoring

16.9.1 Since no significant effects are anticipated no mitigation or monitoring is required. The Dublin Airport Waste Minimisation Plan[18] sets a number of goals and targets that daa aspires to achieve by 2030 and daa monitors and will continue to monitor achievement against these goals and targets.

16.10 Residual Effects

16.10.1 No residual effects have been identified. Since no significant effects are anticipated no mitigation or monitoring is required therefore the residual effects are the same as assessed.

16.11 Supporting Assessments

16.11.1 The Supporting Assessments provide additional context for the Principal Assessment by considering changes in waste arisings between the 2023 Baseline Operation, 2025 Current Operation and the future operational conditions assessed in 2029. The three Supporting Assessments comprise:

- Supporting Assessment 1: 2023 Baseline Operation (32 mppa) compared with the 2029 Proposed Operation (40 mppa);
- Supporting Assessment 2: 2025 Current Operation (36.4 mppa) compared with the 2029 Proposed Operation (40 mppa); and
- Supporting Assessment 3: 2025 Current Operation (36.4 mppa) compared with the 2029 Permitted Operation (32 mppa).

16.11.2 The Dublin Airport waste arisings are extrapolated up and down from the latest available data (2025) presented in Table 16-10. To calculate the current 0.154 kg per passenger, the total waste arisings in 2025 is divided by 36.4 mppa. The Supporting Assessments considers both the current waste per passenger (kg) (0.154 kg in 2025) and the target to reduce operational, non-hazardous municipal solid waste to 0.116 kg per passenger in 2030. For the purpose of assessment, a scenario where the 2030 target is met by 2029 is also included. The operational waste in tonnes is also presented as a percentage of total municipal waste generated in Ireland (2023 baseline of 3,134,840 tonnes).

Table 16-10 Dublin Airport Municipal Operational Waste Arising for Supporting Assessments

Forecast assumption	Passenger numbers (mppa)	Waste per passenger (kg)	Operational waste (tonnes)	Percentage of total municipal waste generated in Ireland (2023 baseline of 3,134,840 tonnes) (%)
Assuming current (2025) kg per passenger	32	0.154	4,928	0.16
Assuming target kg per passenger is achieved	32	0.116	3,712	0.12
Assuming current (2025) kg per passenger	36.4	0.154	5,606	0.18
Assuming target kg per passenger is achieved	36.4	Not applicable assessment based on current operation only.		
Assuming current (2025) kg per passenger	40	0.154	6,155	0.20
Assuming target kg per passenger is achieved	40	0.116	4,640	0.15

16.11.3 As outlined in the Current Receiving Environment section, hazardous waste arisings at 32 mppa are estimated to be 37 tonnes per year. This estimate has been extrapolated based on passenger numbers

to the other operational scenarios considered in the Supporting Assessments, resulting in estimated hazardous waste arisings of 42 tonnes per year at 36.4 mppa and approximately 50 tonnes per year at 40 mppa, as presented in Table 16-11. The operational waste in tonnes is also presented as a percentage of total hazardous waste generated in Ireland (2024 baseline of 396,651 tonnes).

Table 16-11 Hazardous Operational Waste Arising for Supporting Assessments

Passenger numbers (mppa)	Operational waste (tonnes)	Percentage of total hazardous waste generated in Ireland (2024 baseline of 396,651 tonnes) (%)
32	37	0.009
36.4	42	0.01
40	50	0.013

Supporting Assessment 1 – 2023 Baseline Operation vs 2029 Proposed Operation

16.11.4 Supporting Assessment 1 considers the change from the 2023 Baseline Operation (32 mppa) to the 2029 Proposed Operation (40 mppa). Although the passenger numbers considered are comparable to those in the Principal Assessment, this Supporting Assessment provides additional context by considering the change from the established 2023 environmental baseline (2025 operational waste extrapolated back to 32 mppa) rather than the 2029 Permitted Operation.

16.11.5 Table 16-10 shows that, at 32 mppa, municipal operational waste is estimated to be 4,928 tonnes per annum, extrapolated from the current rate (2025) of 0.154 kg per passenger. This is equivalent to approximately 0.16% of total municipal waste arisings generated in Ireland (2023 baseline, the most recently published data).

16.11.6 Table 16-10 shows that, at 40 mppa, municipal operational waste is estimated to range from 4,640 tonnes (based on the 0.116 kg target per passenger) to 6,155 tonnes (based on the current 0.154 kg per passenger) per annum, equivalent to approximately 0.15% (based on the 0.116 kg target per passenger) to 0.20% (based on the current 0.154 kg per passenger) of municipal waste arisings generated in Ireland.

16.11.7 The increase from 32 mppa to 40 mppa would result in an increase in municipal operational waste equivalent to approximately 0.04% (based on the current 0.154 kg per passenger) of municipal waste arisings generated in Ireland.

16.11.8 The increase from 32 mppa to 40 mppa would result in a decrease in municipal operational waste equivalent to approximately 0.01% (based on the 0.116 kg target per passenger) of municipal waste arisings generated in Ireland

16.11.9 Table 16-11 outlines hazardous waste is estimated to increase from 37 tonnes per year at 32 mppa to approximately 50 tonnes per year at 40 mppa, equivalent to approximately 0.009% and 0.013% of national hazardous waste arisings generated in Ireland respectively (2024 national baseline, the most recently published data).

16.11.10 The increase from 32 mppa to 40 mppa would result in an increase in hazardous operational waste equivalent to approximately 0.004% of total hazardous waste generated in Ireland

Supporting Assessment 2 – 2025 Current Operation vs 2029 Proposed Operation

16.11.11 Supporting Assessment 2 considers the change from the 2025 Current Operation (36.4 mppa) to the 2029 Proposed Operation (40 mppa).

16.11.12 Table 16-10 shows that municipal operational waste generated by the 2025 Current Operation (36.4 mppa) was 5,606 tonnes per annum. This is equivalent to approximately 0.18% of total municipal waste arisings in Ireland in 2023, the most recent year for which published data are available.

16.11.13 Table 16-10 shows that, at 40 mppa, municipal operational waste is estimated to range from 4,640 tonnes (based on the 0.116 kg target per passenger) to 6,155 tonnes (based on the current 0.154 kg per passenger) per annum, equivalent to approximately 0.15% (based on the 0.116 kg target per passenger) to 0.20% (based on the current 0.154 kg per passenger) of municipal waste arisings generated in Ireland.

16.11.14 The increase from 36.4 mppa to 40 mppa would therefore represent an increase in municipal operational waste equivalent to approximately 0.02% of municipal waste arisings generated in Ireland (based on the current 0.154 kg per passenger) and a decrease in operational waste equivalent to approximately 0.03% (based on the 0.116 kg target per passenger) of municipal waste arisings generated in Ireland.

16.11.15 Table 16-11 outlines hazardous waste is estimated to increase from 42 tonnes per year at 36.4 mppa to approximately 50 tonnes per year at 40 mppa, equivalent to approximately 0.01% and 0.013% of national hazardous waste arisings generated in Ireland respectively. The increase would therefore be equivalent to approximately 0.003% of national hazardous waste arisings (2024 baseline, the most recently published data).

Supporting Assessment 3 – 2025 Current Operation vs 2029 Permitted Operation

16.11.16 Supporting Assessment 3 considers the change from the 2025 Current Operation (36.4 mppa) to the 2029 Permitted Operation (32 mppa), thereby providing context on the reduction in waste arisings associated with returning passenger numbers to the currently permitted passenger capacity.

16.11.17 Table 16-10 shows that municipal operational waste generated by the 2025 Current Operation (36.4 mppa) was 5,606 tonnes per annum. This is equivalent to approximately 0.18% of total municipal waste arisings in Ireland in 2023, the most recent year for which published data are available.

16.11.18 Table 16-10 shows that, at 32 mppa, municipal operational waste is estimated to range from 3,712 tonnes (based on the 0.116 kg target per passenger) to 4,928 tonnes (based on the current 0.154 kg per passenger) per annum, equivalent to approximately 0.12% (based on the 0.116 kg target per passenger) to 0.16% (based on the current 0.154 kg per passenger) of municipal waste arisings generated in Ireland

16.11.19 The decrease from 36.4 mppa to 32 mppa would therefore represent a decrease in municipal operational waste equivalent to approximately 0.02% (based on the current 0.154 kg per passenger) to 0.04% (based on the 0.116 kg target per passenger) of municipal waste arisings generated in Ireland.

16.11.20 Table 16-11 shows hazardous waste is estimated to decrease from 42 tonnes per year at 36.4 mppa to 37 tonnes per year at 32 mppa, equivalent to approximately 0.01% and 0.009% of national hazardous waste arisings respectively. The decrease would therefore be equivalent to approximately 0.001% of national hazardous waste arisings (2024 baseline, the most recently published data).

Supporting Assessments Conclusion

16.11.21 Overall, the Supporting Assessments demonstrate that the changes in municipal and hazardous waste arisings associated with the different operational comparisons would represent a very small proportion of national waste arisings.

16.12 Conclusion

16.12.1 This chapter has assessed the likely significant effects of the Proposed Order arising from changes in operational municipal and hazardous waste generation at Dublin Airport. The assessment has considered the effect of these changes on waste management infrastructure, having regard to national waste arisings and management in Ireland.

16.12.2 The Principal Assessment compares the 2029 Permitted Operation (32 mppa) with the 2029 Proposed Operation (40 mppa). While the Proposed Order would result in an increase in operational waste arisings, the additional municipal and hazardous waste generated would represent a very small proportion of national waste arisings. The magnitude of impact would therefore be negligible, resulting in a Neutral or Slight effect, which is Not Significant.

16.12.3 The Supporting Assessments provide additional context by considering the changes in waste arisings between the 2023 Baseline Operation, 2025 Current Operation and the future operational conditions in 2029. These assessments similarly demonstrate that the changes in municipal and hazardous waste arisings would represent a very small proportion of national waste arisings and would result in Neutral or Slight effects, which are Not Significant. They therefore support the findings of the Principal Assessment and do not identify any additional likely significant effects.

16.12.4 No additional mitigation is required beyond the existing waste management measures and commitments set out in the Dublin Airport Waste Minimisation Plan. No significant cumulative effects have been identified and there would be no significant residual effects.

16.12.5 Overall, the assessment concludes that the Proposed Order would not give rise to any likely significant effects in relation to material assets (waste).