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Environmental Impact Assessment Report

Non-Technical Summary

NICHOLAS O'DWYER

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1 INTRODUCTION

1.1 Introduction

Nicholas O'Dwyer Ltd., (NOD) and associated specialists (*i.e.*, Altemar Ltd., AWN Consulting Ltd., Courtney Deery Heritage Consultancy Ltd., and Stephenson Halliday Ltd.) have prepared an Environmental Impact Assessment Report (EIAR) for the proposed Airfield Drainage Project (ADP). The ADP proposes new drainage infrastructure and upgrades to existing drainage infrastructure to enhance the surface water management system at Dublin Airport.

The EIAR is submitted in support of a planning application by daa ("the Applicant") to the Fingal County planning authority under Section 34 of the Planning and Development Act 2000 (as amended). This document is a non-technical summary of the information contained in the EIAR.

1.2 Site location

Figure 1 depicts the ADP site (red line boundary), which is located within the Dublin Airport boundary (blue line boundary). The proposed development is within the airfield in the townlands of Pickardstown, Coultry, Huntstown, Forrest Great, Forrest Little, and Collinstown, and to the east of the airfield in the townlands of Cloghran, Corballis, Commons, Toberbunny, Stockhole and Clonshagh. The proposal site is entirely within the administrative area of Fingal County Council.

1.3 The Requirement for an EIAR

The proposed ADP exceeds the relevant Environmental Impact Assessment (EIA) threshold, as detailed in the Planning and Development Regulations, 2001 (as amended), Schedule 5, Part 2, Class 10 (b) (iv), "Infrastructure projects". The ADP site boundary (red line boundary), totalling 194.05 hectares, exceeds the threshold of 10 hectares for Class 10 (b) (iv), therefore an EIA is required. In accordance with the Planning and Development Regulations, 2001 (as amended), where it is determined that an EIA is required, the applicant must prepare an EIAR containing information to enable the competent authority, Fingal County Council, to undertake its duties under the EU EIA Directive.

1.4 Scoping

The scoping stage of the EIA is a process to determine the content and extent of the matters which should be covered in the EIAR. To inform this process, Nicholas O' Dwyer Ltd., on behalf of daa, prepared a Scoping Consultation Document providing an overview of the ADP project, the project scope, and for each environmental factor as listed in the EIA Directive, an overview of the baseline environment, proposed assessment methodology and potential significant effects[1]. The Scoping Consultation Document was sent to the following consultees on 10th November 2022:

- Environmental Protection Agency (EPA);
- Dept. of Housing, Planning and Local Government;
- Dept. of Agriculture, Food and the Marine;
- Dept. of Communications, Climate Action & the Environment;

[1] *Impact* refers to a change or influence to a receptor; *effect* refers to the consequence of that change.

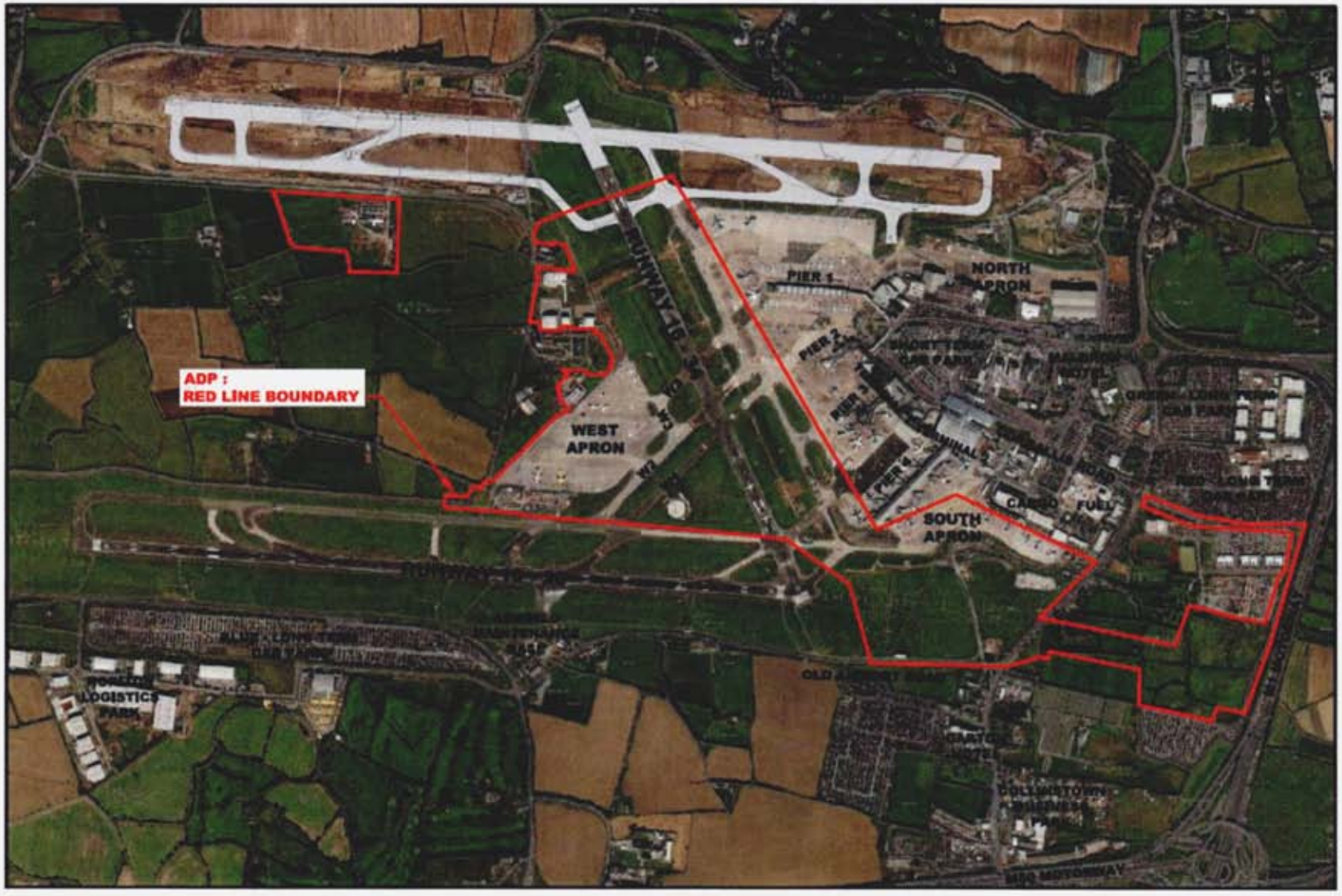

Figure 1. ADP project boundary EIA Process

- Dept. of Culture, Heritage and Gaeltacht / Development Applications Unit;
- Inland Fisheries Ireland (IFI);
- Office of Public Works (OPW);
- Irish Aviation Authority;
- An Taisce;
- Heritage Council;
- Fingal County Council (FCC);
- Dublin City Council (DCC);
- Local Authorities Waters Programme Office (LAWPRO);
- Transport Infrastructure Ireland (TII); and
- National Transport Authority (NTA).

Comments were received from TII, IFI and the Department of Housing, Local Government and Heritage. **Chapter 2** of the EIAR provides a summary of the comments received and how they were considered in preparing the EIAR.

1.5 Purpose of the EIAR

The purpose of the EIAR is to present the findings of a systematic assessment of the likely significant environmental effects of development proposals. The main aim of the EIAR is to inform the public and the competent authority of the findings of the assessment of potential effects.

The EIAR then recommends measures for avoiding, and minimising identified effects, and reassesses potential effects post mitigation to determine residual effects (*i.e.,* what level of effect remains after every effort to avoid and minimise).

1.6 EIAR Approach

Baseline surveys were carried out, involving desktop surveys, and in some cases field surveys, for environmental factors of Population and Human Health, Biodiversity, Hydrology, Land, Soils, Geology and Hydrogeology, Material Assets, Air Quality and Climate, Archaeology and Cultural Heritage, and Landscape and Visual Amenity.

An assessment of the ADP's potential impact or effect on identified features present in and near the site, as relevant, was carried out and any potential environmental benefits were also identified for each environmental factor. Defining significance can be difficult and, in general, involves assessing the degree of change to the environment, taking into consideration the sensitivity of the environmental receptor. **Chapter 2** of the EIAR describes the general approach taken, and each environmental factor chapter provides added detail with reference to specific guidance used and defining criteria as relevant. The following criteria were applied in assessing significance:

- Type of effect (adverse / beneficial);
- Extent and magnitude of effect;
- Direct or indirect effect;
- Duration of effect (short term / long term; permanent / temporary);
- Comparison with legal requirements, policies and standards;

- Sensitivity of receptor;
- Reversibility of effect; and
- Scope for mitigation / enhancement.

Following implementation of mitigation measures, each environmental factor identifies any residual effects and their significance to assist the public and the Competent Authority to understand what the effects of the project are. The recommended mitigation measures and residual effects are described in the chapters for each environmental factor (see EIAR **Chapter 8** to **Chapter 17**), and a summary of all proposed mitigation measures is provided in **Chapter 19** of the EIAR.

1.7 The EIAR Team

Article 5(3)(a) of the amended EIA Directive (2014/52/EU) (EIA Directive) states that *"the developer shall ensure that the environmental impact assessment report is prepared by competent experts"*. The Guidelines on the Information to be contained in Environmental Impact Assessment Reports issued by the Environmental Protection Agency (EPA) in May 2022[2] highlight the need for competent experts to be involved in the EIA process and in the preparation of the EIAR.

Environmental specialists from NOD coordinated and managed the preparation of the EIAR and led a team of competent experts in preparing specialist chapters. Each contributing expert provides a statement of authority, and an explanation of the methods of data collection and assessments that were carried out with reference to applicable discipline or industry standards and government guidance. **Table 1.1** lists the competent experts who prepared each chapter of the EIAR.

[2] Environmental Protection Agency. 2022. Guidelines on the Information to be contained in Environmental Impact Assessment Reports.

Table 1.1:EIA Chapters and Competent Experts

EIA Chapter	Company	Expert
Chapter 1 - Introduction	Nicholas O'Dwyer Ltd.	Krista Farrugia
Chapter 2 - The EIA Process		Krista Farrugia
Chapter 3 – Project Need and Alternatives		Mark Armstrong
Chapter 4 – Project Description		Ayodeji Oyelami Mark Armstrong Martin Hickey
Chapter 5 – Policy Context		Laurie McGee
Chapter 6 – Disasters and Emergencies		Mark Armstrong
Chapter 7 – Future Developments		Laurie McGee
Chapter 8 – Population & Human Health		Laurie McGee
Chapter 9 - Biodiversity	Altemar Ltd.	Bryan Deegan
Chapter 10 – Hydrology	AWN Consulting Ltd.	Marcelo Allende Teri Hayes
Chapter 11 – Land, Soils, Geology & Hydrogeology	AWN Consulting Ltd.	Marcelo Allende Teri Hayes
Chapter 12 – Noise and Vibration	AWN Consulting Ltd.	Alistair Maclaurin
Chapter 13 – Material Assets (Waste Management)	AWN Consulting Ltd.	Niamh Kelly Chonaill Bradley
Chapter 14 – Material Assets (Traffic & Utilities)	AWN Consulting Ltd.	Niamh Kelly Ronan Kearns
Chapter 15 – Air Quality & Climate	AWN Consulting Ltd.	Niamh Nolan Aisling Cashell Dr Avril Challoner
Chapter 16 – Archaeology & Cultural Heritage	Courtney Deery Heritage Consultancy Ltd.	Dr Clare Crowley
Chapter 17 – Landscape and Visual	Stephenson Halliday Ltd.	Ross Allan Daniel Leaver
Chapter 18 –Interactions & Cumulative Effects	Nicholas O'Dwyer Ltd.	Krista Farrugia
Chapter 19 – Schedule of Mitigation Measures	Nicholas O'Dwyer Ltd.	All

2 THE PROPOSED DEVELOPMENT

2.1 Background to the Scheme

2.1.1 Drainage Masterplan

The drainage system enhancements and infrastructure proposals in the ADP have been informed by the Dublin Airport Drainage Masterplan (DMP) which is a holistic long-term masterplan for drainage infrastructure at Dublin Airport. The DMP was completed in July 2022 and outlines a long-term phased and coherent approach to improvements in surface water and foul drainage infrastructure, consistent with planning and environmental requirements. The DMP considered hydraulic and surface water quality requirements having regard to EU Water Framework Directive (WFD) (transposed into Irish law in the Surface Waters Regulations 2009, as amended) as well as the Floods Directive (transposed into the Assessment and Management of Risks Regulations, 2010). The DMP is aligned with the Airport's investment strategy to safeguard for a position that the Airport may be required to grow up to 55 million passengers per annum (mppa).

2.1.2 Drainage Management Plan

The ADP proposals have been developed to accord with the targets set out in the Dublin Airport Drainage Management Plan (DMaP). The DMaP was developed by daa following consultation with FCC, IFI, the Local Authorities Waters Programme Office (LAWPRO) and EPA. The DMaP establishes a systematic, evidence-based approach to the design and operation of pollution control infrastructure with the aim of facilitating a phased achievement of *"Good"* status in receiving waters surrounding the airfield campus.

The water quality objectives for the waterbodies surrounding the airport campus are set out in the WFD and Ireland's River Basin Management Plan (RBMP). The proposed upgrades to the surface water management system at Dublin Airport are also subject to the Surface Water Quality objectives of the Dublin Airport Local Area Plan (LAP) 2020. The DMaP shall contribute to the programme of measures for the Santry/Mayne Area for Action in the Third Cycle RBMP and includes targets and measures to contribute to achieving *"Good"* status for all waterbodies surrounding the airport.

The DMaP also establishes a Technical Working Group made up of representatives from daa, FCC, IFI, LAWPRO and EPA. The main function of the Technical Working Group is to review and provide comment on the targets, measures and performance criteria set out for each waterbody for the initial phase and each subsequent phase of the DMaP, in line with the 5-yearly reviews of the RBMP.

The ADP proposals will contribute to the achievement of the following DMaP targets for the Mayne/Cuckoo sub-catchment:

- Increase clean flows to the Cuckoo Stream;
- Contribute to improvement of the ecological condition of the Cuckoo Stream downstream of all pollution control facilities;
- Minimise the occurrence of contamination overflow events;
- Monitor the effect of overflow events;
- Improve system response to emergency events (*e.g.*, fuel spillage or a leakage of de-icing chemical storage tanks).

2.2 Characteristics of the Receiving Environment

Dublin Airport is located north of Dublin city and lies within the FCC administrative area. Dublin city centre is located approximately 10 km south of the airport, while the town of Swords is located approximately 2km north. A high-capacity road network surrounds the airport with the M1 to the east, the M50 to the south and the N2 to the west. Primary strategic road access to Dublin Airport is from the M1 motorway.

The airport includes various land uses. Aspects associated with its operation include terminal buildings, aprons, taxiways, runways, hangars, and carparks. There is also a mix of other land use classes ancillary to the dominant operational uses including offices, car parking, logistics, industrial, and hospitality and leisure. An outer perimeter essentially defines Dublin Airport and delineates the airside[3]-landside[4] interface, as described in the Dublin Airport Central Masterplan 2016[5] and the Dublin Airport Local Area Plan 2020[6].

The upper Cuckoo Stream sub-catchment is the largest sub-catchment surrounding Dublin Airport and includes a large proportion of the operational airfield area. There is also a large greenfield area (approx. 170 ha), which consists of mostly agricultural lands, located in the upper reaches of the sub-catchment. Stormwater runoff from this area is drained by the existing Airfield Trunk Culvert, which discharges these flows to the open channel section of the Cuckoo Stream within the airfield (Cuckoo Supply Channel). Flows continue across the R132 to the Cuckoo Stream which conveys flows toward the Mayne River before ultimately discharging to Dublin Bay at the Baldoyle Special Area of Conservation (SAC) / Special Protection Area (SPA).

Figure 2 shows the Cuckoo sub-catchment and areas which contribute flows to the Airfield Trunk Culvert and the greenfield area.

[3] Airside is the area in the airport campus which are within the Critical Part of the Security Restricted Area (CPRSA) boundary that requires Customs and Security clearance to allow access.

[4] Landside refers to areas in the Dublin Airport campus which are outside the CPRSA boundary.

[5] Fingal County Council. 2016. Dublin Airport Central Masterplan.

[6] https://fingalppn.ie/wp-content/uploads/2021/10/dublin-airport-lap-2020-1.pdf

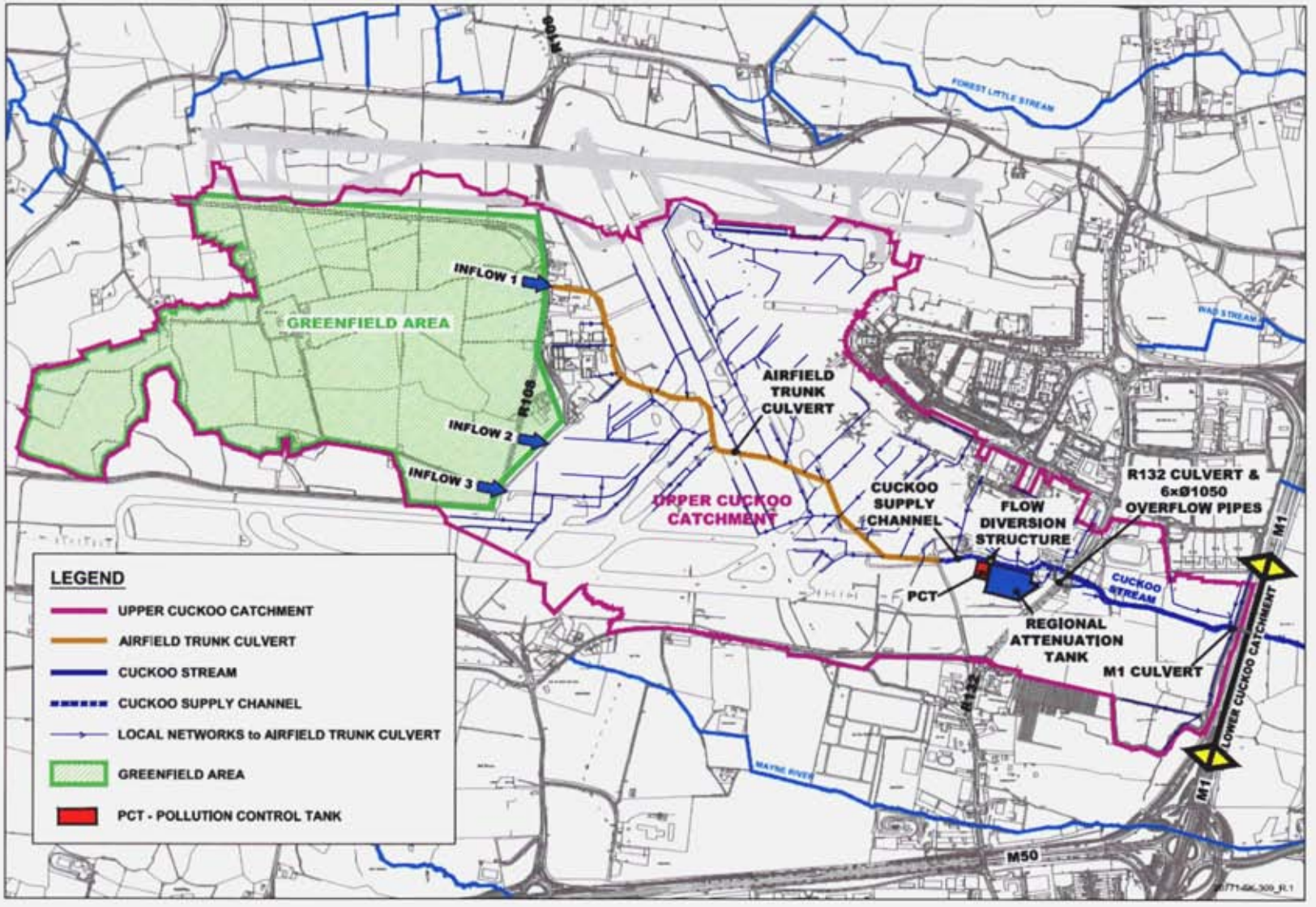

Figure 2: Upper Cuckoo catchment and indicative surface water network

2.3 Project Description

2.3.1 Introduction

The purpose of the ADP is:

- To provide a nett improvement in the degree of protection afforded to the receiving waters by the surface water management system, in accordance with the planning and environmental requirements of the relevant EU Directives, national and local plans and legislation, as well as daa's Sustainability Strategy.
- To optimise the performance of the surface water management system at Dublin Airport for improved efficiency, greater operational flexibility and resilience to a broad range of extreme weather events.
- To increase the hydraulic capacity of the surface water network and alleviate historic capacity issues.

It is proposed to achieve this through a series of drainage system enhancement measures and infrastructure proposals now described.

2.3.2 ADP Project Elements

A new Contamination Detection and Response (CD&R) System and the provision of additional pollution control facilities are designed to provide robust protection to receiving waters. The network enhancements will intercept greenfield inflows, at points upstream of the airport campus, and convey them directly to the receiving waters. These proposals will operate as part of an improved integrated airfield-wide surface water management system designed to protect water quality in the receiving waters.

It is also proposed to provide hydraulic upgrades to the existing network to facilitate the proposed flow segregation system, increase the hydraulic capacity of the network and alleviate historic capacity issues. Some local upgrades and reconfigurations of existing drainage networks at West Apron and South Apron Hub will be necessary to integrate these networks into the airfield-wide surface water management system.

The proposed ADP includes an airfield-wide Supervisory Control and Data Acquisition (SCADA) system which will provide operational control for all existing and proposed drainage infrastructure.

The proposed layout of ADP drainage infrastructure is shown in **Figure 3.**

Table 2.1 provides a summary of each element of drainage infrastructure proposed as part of the ADP. Each component is described in further detail in **Chapter 4** of the EIAR.

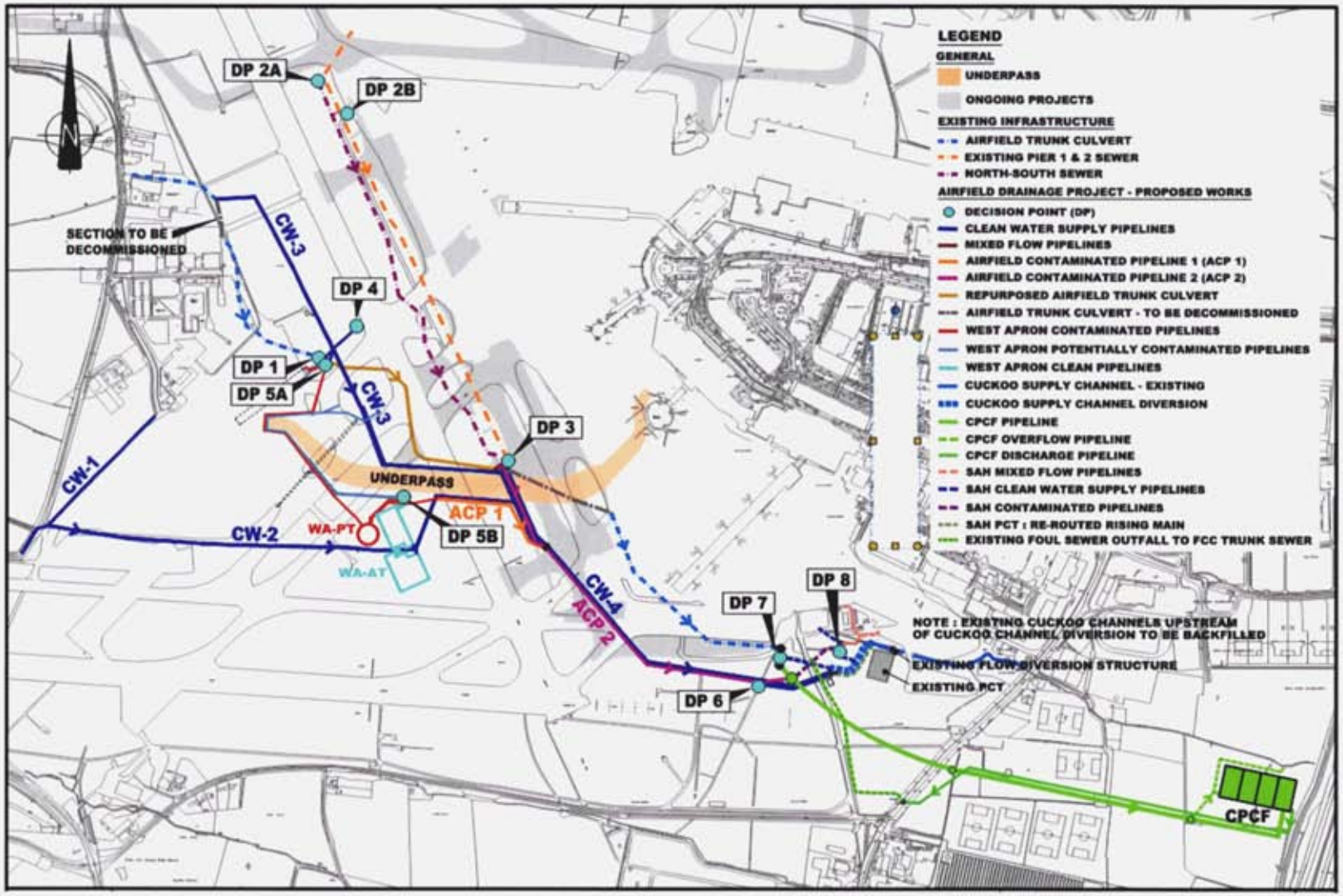

Figure 3: ADP layout

Table 2.1: Overview of proposed ADP

ADP Proposal	Description of the Proposed Development
CD&R System	A CD&R system has been designed strategically to maximise the segregation of flows from various "zones" within the airfield. This will serve to increase clean flow to receiving waters and protect receiving waters from contaminated surface water runoff. This system consists of detection devices, network "decision points" (DPs) and associated control kiosks.
Clean Water Supply Pipelines	New clean water supply pipelines (CW-1, CW-2, CW-3 and CW-4) are proposed to convey inflows from greenfield areas, and runoff from the airfield which has been identified as clean, to the receiving waters. This will provide a source of clean water to receiving waters. These pipelines will also provide additional hydraulic capacity to the airfield surface water network.
Airfield Contaminated Pipelines (ACP)	The proposed ACP1 and ACP2 are proposed to receive flows identified as contaminated by the CD&R and provide additional hydraulic capacity to the airfield surface water network.
West Apron Network upgrades	It is proposed to upgrade the West Apron surface water collection network. The upgrades include reconfiguration of the existing network, the proposed West Apron Attenuation Tank (WA-AT), implementation of local CD&R devices, network decision points and construction of the West Apron Pollution Tank (WA-PT).
South Apron (SA) Network Re-configuration	It is proposed to upgrade the existing surface water collection network in the vicinity of SA, to integrate the existing network with the proposed ADP network. The upgrades include reconfiguration of the existing network, construction of network decision points, upgrade of the existing Flow Diversion Structure (FDS) and reconfiguration of the existing Cuckoo Supply Channel.
Central Pollution Control Facility (CPCF) Trunk Contaminated Pipeline	A new trunk contaminated pipeline is proposed to convey contaminated surface water from the airfield to the CPCF, detailed below.
CPCF	A CPCF is proposed to protect receiving waters from contaminated surface water from the airfield. The CPCF includes pollution control tanks and a pumping station with a discharge to sewer. The CPCF also includes ancillary pipeline and Mechanical, Electrical, Instrumentation, Control and Automation (MEICA) works and an electrical substation.
Supervisory Control and Data Acquisition (SCADA) System	A centralised SCADA system is proposed to control the operation of the surface water network. This will require the construction of Control Kiosks, from which the SCADA system can be monitored and maintained. These kiosks will also require electrical power connections and further connections to communicate signals to the central SCADA system.
Change of Function of Existing Drainage Infrastructure	As a result of the proposed surface water network upgrades, the existing Airfield Trunk Culvert (ATC) will be reconfigured. The central section of the existing ATC (between DP1 and the connection point with ACP2) will be re-purposed as a contaminated pipeline. This section of the culvert will be re-labelled as the Re-purposed Airfield Trunk Culvert (RATC).

2.3.3 Alternatives

When designing the ADP, alternative design approaches, operational philosophies, and alternative construction methodologies were all considered, including the do-nothing option. Alternative layouts (*i.e.*, alternative pipeline corridor routes and infrastructure locations) were also considered in detail. The alternatives assessed when designing the ADP proposals are described in detail in **Chapter 3** of the EIAR.

2.3.4 Construction Phase

A Construction and Environmental Management Plan (CEMP) has been prepared and is appended to the EIAR. The CEMP sets out the method of construction for each project element and the key environmental management measures to be implemented during construction to ensure that the environment is protected and any potential effects are minimised.

The final CEMP will be developed further at the construction stage, on the appointment of the main contractor to the project. It will address the requirements of any relevant planning conditions, including any additional mitigation measures and monitoring which may required by the Competent Authority, FCC. The proposed construction methods are summarised as follows.

- The proposed construction methods for the pipelines for the ADP include (i) open cut methodologies; and (ii) tunnelling methodologies. The tunnelling works will require a smaller overall site area compared to the open cut methodology. Drive and reception shafts will be required at each end of the tunnelled section of pipeline.
- Pollution tanks will be either cast in situ reinforced concrete structures or installed in pre-cast segments. The tanks are below ground structures and once constructed, the area will backfilled with soil and re-planted. The final design of the pollution tanks will be dependent on ground conditions at the location. Ancillary to the pollution tanks are below-ground pumping stations, a substation, access roads and parking, and an overflow pipe.
- The proposed West Apron Attenuation Tank is a below ground structure storage system in a series of large diameter pipes laid in series. A bulk excavation is required to facilitate its construction. Temporary works will consist of battered back excavations or a sheet pile system. The excavated material will be re-used where possible or removed offsite to a licenced waste disposal facility.
- The decision point chambers are to be constructed as reinforced concrete below ground structures at various locations within the airport complex. The construction method for the decision point chambers is an open dig method with stepped / battered sides.
- Associated with the decision point chambers are monitoring kiosks. Dependent on their location within the airfield, for operational reasons, some are proposed as below ground structures. These will be reinforced concrete structures either cast in situ or in pre-cast chambers. Above ground kiosks will be made from prefabricated glass reinforced plastic (GRP) which will be installed on concrete plinths at ground level. The below-ground structures will be constructed using an open dig method with stepped / battered sides.
- The Cuckoo Supply Channel Diversion will be constructed through excavation and re-profiling of the soil levels in South Apron. The channel will be constructed *via* open cut techniques with surplus material stored locally for use in the backfilling of the existing channels (if determined to be suitable). The backfilling of the

existing channels will only take place once it is proven that all connections to the existing channels have been removed and transferred to the new diverted Cuckoo Supply Channel.

- The reconfiguration of the pipeline network in South Apron (construction of new pipes, relaying of existing pipes) will require raising the existing ground levels to achieve the required cover above the pipelines. Surplus material will be used if possible. Headwalls will be cast in-situ. Given the size of the structure it is not feasible to install a pre-cast structure. Headwall construction will take place in the dry (*i.e.*, before connection to the existing channel is completed or flows are turned upstream).
- All the elements of the Flow Continuation Structure (Weir and Channel) will be made of reinforced concrete and will either be cast in situ or pre-cast.
- Two areas have been identified as the main construction compounds, namely the West Compound and the East (Eastlands) Compound. Each compound typically contains offices, canteen, welfare facilities, pipe storage, plant storage and storage for miscellaneous construction materials. Car parking for site operatives will be in the vicinity of the offices / canteen / welfare facilities. Internal roads will be provided within the compound layout linked to the proposed access point. Smaller, local compounds will be located close to the works sites and materials will be brought to the local compounds from the main ones as required.

2.3.5 Operational Phase

The operation of the ADP drainage infrastructure, and interfacing (non-ADP) drainage infrastructure, will be controlled by the proposed airfield-wide SCADA system to ensure that the overall surface water management system operates as a single integrated system. The surface water management system has been designed to: (i) segregate clean and contaminated flows within the airfield; and (ii) optimise the performance of pollution control facilities (PCFs).

The system is designed to provide pre-emptive responses to protect the environment from potential contaminants arising from routine airport operations (*e.g.*, de-icing, and anti-icing). This means that the system will forecast surface water contamination, based on weather conditions (temperature triggers de-icing activities). The system will then change configuration automatically so that the contaminants do not reach the receiving waters.

A key requirement of the proposed integrated control system is to facilitate operational flexibility in the performance of SCADA system. This operational flexibility enables the system to adjust and optimise performance in response to the real-time conditions experienced at Dublin Airport (*e.g.*, weather, flow, contamination status).

Non-default interventions may be required when operational issues which require additional intervention beyond the typical response arise (*i.e.*, failure of the pollution control automated system to operate as required for any reason, when an unforeseen incident / event occurs or during extreme weather conditions). Non-default intervention is required in these cases to adjust the system operation in response to the exceptional conditions experienced. See also **Chapter 4** of the EIAR for further details.

The SCADA system has been subjected to a rigorous scenario-based assessment to ensure that it can effectively respond to the broad range of possible events. This scenario-based assessment considered the various flow conditions, weather conditions and / or operational scenarios which can arise at Dublin Airport.

3 ENVIRONMENTAL FACTORS SUMMARY

3.1 Population and Human Health

Chapter 8 of the EIAR was prepared by NOD and is concerned with the likely significant effects of the ADP on human beings living and working in and around the Airport. The chapter addresses human health and amenity in relation to other environmental factors such as noise and vibration, air quality, and traffic during construction and operational phases.

3.1.1 Baseline Environment

Dublin Airport is located within the administrative area of Fingal County Council. The nearest settlements are the town of Swords and St. Margaret's which is adjacent to the west. According to the 2016 Census, Swords (adjacent to the key gateway of Dublin Airport) had a population of 39,248 people. In the Fingal County Development Plan 2017 - 2023, Swords is identified as a 'Primary Economic Growth Town' with a predicted potential population growth of up to 100,000 people by 2056. According to the Fingal County Council Rural House Count, 2018, in the rural area surrounding the Airport campus, including St. Margaret's, there are 21 occupied houses, 10 unoccupied houses and 3 derelict houses within the Dublin Airport Local Area Plan (LAP) area.

3.1.2 Potential Effects of the Proposed Development

Construction Phase

Noise impacts during construction were assessed on identified sensitive receptors, which include residential properties on the Old Airport Road approximately 500m from the proposed works (represented by Noise Sensitive Location - NSL 3); and one residential property located on the R132 to the east of the airport and industrial/commercial properties located to the south of the Old Airport Road/Swords Road which are approximately 150m from the proposed works (represented by NSL 4). The noise impact assessment concluded that during the day and evening, effects to noise sensitive locations NSL 3 and NSL 4 were not significant to slight, and at night-time, when some works such as tunnelling are proposed, the effects at these noise sensitive locations will be slight to moderate (NSL 3) and moderate to significant (NSL 4).

In relation to impacts on sensitive receptors by vibration, where the closest sensitive receptor is greater than 100m from the works, it is concluded that no vibrations will be perceptible from the works due to the distance between the works and the receptors. The effect of vibration will therefore be neutral, imperceptible and short term.

The Air Quality & Climate chapter of the EIAR (**Chapter 15**) identifies potential impacts on air quality during construction of the proposed development. Potential effects are predicted to arise from construction dust emissions from earthworks, construction and trackout with the potential for nuisance to nearby receptors. It is concluded that, in the absence of mitigation, effects from dust are predicted to be not-significant, imperceptible, direct, neutral, and short-term.

There is also the potential for traffic emissions to impact air quality in the short-term over the construction phase, particularly due to the increase in heavy duty vehicles accessing the site. The construction stage traffic has been reviewed and while traffic will increase for a short period during the excavation works, a detailed air assessment of construction stage traffic emissions has been scoped out from any further assessment as the expected traffic generation is below thresholds. Thus, no potential significant effects were identified to air quality arising from traffic emissions.

Chapter 14 of the EIAR examines the effects of the proposed development on Material Assets (Traffic & Utilities). During construction there will be additional traffic movements to and from the site from construction personnel, security staff, professional staff (*i.e.*, design team, utility companies), excavation plant, dumper trucks and deliveries/removal of materials (waste/spoil). The frequency of vehicles accessing the site will vary throughout the construction phase.

Operational Phase

No potential effects on human health and amenity arising from operation of the proposed ADP were identified.

3.1.3 Mitigation and Residual Effects (Post-Mitigation)

The CEMP includes measures to address health and safety issues during construction including measures to reduce noise and dust emissions. Mitigation measures to reduce noise include siting noisy equipment as far away from sensitive receptors as possible, providing screening and attempting to schedule activities in a manner that reflects the location of the site and the nature of neighbouring properties. Every effort will be made to schedule the noisiest works during the less sensitive daytime hours.

Following implementation of mitigation measures, the residual effects from noise at night-time are reduced to not significant to slight at NSL 3, and not significant to moderate at NSL 4. Ongoing monitoring and audit, and communication with nearby noise sensitive properties is recommended. Noise monitoring during the construction stage will be conducted in accordance with the International Standard ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise and BS5228.

Following implementation of the mitigation measures outlined in the Construction Traffic Management Plan (CTMP), the residual effects on the local road network along sections of the R108, R132 and L2015 and thus local road users are considered negative, moderate, and short term for the construction phase.

3.2 Biodiversity

Chapter 9 of the EIAR was prepared by Altemar Ltd. It assesses the biodiversity value of the proposed project area and the potential effects of the project on the ecology of the surrounding area and within the potential zone of influence (ZOI) during construction and operation of the proposed ADP. It should be noted that Altemar has worked with the design team from the concept stage to limit the potential effect of the proposed project on biodiversity.

3.2.1 Baseline Environment

A pre-survey biodiversity data search was carried out in February 2022 and updated in December 2022. This included examining records and data from the NPWS, National Biological Data Centre (NBDC), EPA and baseline information held by daa, in addition to aerial, 6-inch maps and satellite imagery. Habitat surveys of the site were undertaken for terrestrial fieldwork, and surveys for birds, bats, and other mammals were also conducted. The presence of any invasive alien species was also recorded and mapped as appropriate. All surveys were carried out in the appropriate seasons based on Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) guidance.

3.2.2 Potential Effects of the Proposed Development

Construction Phase

During construction, in the absence of mitigation measures, there could be potential direct negative effects on the aquatic biodiversity of the Cuckoo Stream, during instream works and works proximate to the watercourse, that could lead to pollution and silt entering the watercourse. In addition, there would be direct negative effects on habitats within the construction areas which will result in a loss of species of low biodiversity importance. The area is not deemed to be an important foraging area for terrestrial mammals or birds.

Standard construction and operational phase control measures, in addition to monitoring are proposed to minimise potential effects and to improve the biodiversity potential of the proposed project site.

The assessment concludes that no significant environmental effects are likely in relation to the construction of the proposed ADP and the proposed project would be expected to have a slight adverse short-term impact resulting in a temporary slight adverse effect.

Operational Phase

Once constructed, the site would establish a stable ecological environment. However, appropriate measures should be taken to prevent contaminated surface water run-off into adjacent habitats and the River Mayne *via* the Cuckoo Stream.

During operation, the long-term effect of the proposed project is neutral to slight positive and not significant. Discharges from the drainage network will be monitored for COD and nutrient loading.

3.2.3 Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

Based on the successful implementation of the construction phase controls and the works to be carried out in accordance with this EIAR and the accompanying NIS, it is likely that there will be no significant ecological impact arising from construction works proposed for the proposed project. Designated conservation sites will not be impacted by the proposed development during construction.

Robust construction phase control measures are outlined to ensure that the proposed project does not impact on species or habitats of conservation importance, conservation areas or watercourses during construction. It is essential that these measures are complied with to protect the Cuckoo Stream and River Mayne downstream, and to avoid effects during the construction phase.

No significant residual effects are likely to arise from construction of the proposed ADP.

Operational Phase

Based on the successful implementation of the operational phase controls and the works to be carried out in accordance with this EIAR and the accompanying NIS, it is likely that there will be no significant ecological effect on terrestrial and aquatic habitats, and on designated conservation sites arising from operation of the proposed project.

Standard operational phase control measures have been outlined to ensure that the proposed project does not impact on species or habitats of conservation importance, conservation areas or watercourses. It is essential that these measures are complied with, to ensure that the proposed works do not result in downstream, significant environmental

effects. These measures are to protect the Cuckoo Stream and River Mayne and ensure that they are not significantly impacted during operational phases of the proposed project. The proposed ADP is designed to improve water quality within the Cuckoo Stream in the long term.

No potential significant environmental effects are considered likely in relation to the operation of the proposed ADP.

3.3 Hydrology

Chapter 10 of the EIAR was prepared by AWN Consulting Ltd. This chapter of the Environmental Impact Assessment Report (EIAR) assesses the impact of the ADP on the hydrological environment during the construction phase and operational phases.

3.3.1 Baseline Environment

The proposed ADP site lies within the Liffey and Dublin Bay Catchment (Hydrometric Area 09) and WFD Sub-Catchment Mayne_SC_010 and 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 ADP study area is located within the upstream extents of three major river catchments; the Santry River, Mayne River and Sluice River.

The most recent status of the open watercourses within the study area indicates that the Upper Cuckoo sub-catchment Q Value is Q2 (*i.e.*, 'Seriously Polluted'); the Mayne sub-catchment is Q2-3 (*i.e.*, 'Moderately Polluted'); the Santry sub-catchment is Q3 (*i.e.*, 'Moderately Polluted'); the Kealy Stream sub-catchment is Q2 (i.e., 'Seriously Polluted'); the Wad sub-catchment is Q3 (*i.e.*, 'Moderately Polluted') and the Forrest Little sub-catchment is Q2-3 (*i.e.*, 'Moderately Polluted'). This is based on the current surface water monitoring programme carried out by daa.

The most recent published status (www.epa.ie - River Waterbody WFD Status 2016-2021) for the Sluice River, Mayne River, Cuckoo Stream and Santry River waterbody is 'Poor'. Their risk score is qualified by the WFD as 'At risk' of not achieving good status except for the Sluice River, which risk score is 'Under Review'.

In terms of flood risk assessment, the drainage infrastructure proposed in the ADP will provide greater network and hydraulic capacity while also providing greater operational flexibility and resilience, leading to an improved surface water management system, thus reducing flood risk within the airport complex and downstream.

The existing surface water collection network includes local collection pipe network comprising a series of slot drains and below-ground pipelines which collect runoff from hardstand areas and convey them to the Airfield Trunk Culvert, which is the main surface water pipeline serving the airfield.

3.3.2 Potential Effects of the Proposed Development

Construction Phase

In absence of mitigation measures, the activities associated with potential impacts on surface water quality during construction of the proposed ADP are increased sediment loading in run-off, and accidental spills and leaks.

In the absence of mitigation measures, the effect of the ADP during the construction phase on the hydrological environment will likely be negative, moderate and short-term.

Operational Phase

It is projected that the ADP will provide protection against the risk of fuel spillages and will significantly reduce the risk of contaminated flows entering the Cuckoo Stream, thereby improving its ecological condition.

Segregated contaminated flows will be discharged to the Irish Water sewer. The rate at which segregated flows may be discharged is limited by the Trade Effluent Discharge Licence (TEDL).

The enhance surface water management system will improve conveyance of surface water flows through the airfield and will reduce the level of flooding occurring within the operational areas of the airport. The existing flooding / conveyance issues will be addressed through the introduction of additional hydraulic capacity *via* upgrades to the existing pipeline network, the interception of overland flows and provision of additional underground storage.

It should be noted that the enhanced system will reduce the amount of flow that will be diverted during contamination events. This will increase the likelihood that ecological flows will be maintained in the receiving waterbody.

The proposed ADP was designed to minimise the introduction of new/redeveloped impermeable areas. Across the whole scheme there is approximately 5,031m^2 of new hardstand proposed. This will have a minor effect on local recharge to ground. However, the impact on the overall hydrological regime will be insignificant.

Therefore, and considering the expected improvement in the existing hydrological conditions and in the absence of mitigation measures, the potential impacts during the operational phase are summarised as shown in **Table 3.1**.

Table 3.1: Summary of potential effects during operational phase

Effect	Quality	Significance	Duration
Alteration of surface water flows	Positive	Significant	Long term
Improvement of water quality and ecological conditions in Cuckoo Stream	Positive	Significant	Long-term
Change to hydrological regime	Neutral	Imperceptible	Long-term

3.3.3 Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

In order to reduce the likelihood of effects on the hydrological environment, the following mitigation measures will be adopted as part of the construction works on site:

- Implementation of a Construction & Environmental Management Plan (CEMP).
- Surface water management during construction.
- Fuel and chemical handling.
- Soil removal and compaction.

With the application of mitigation measures, the predicted effect on the hydrological environment during the construction phase of the ADP is neutral, imperceptible and short-term.

Operational Phase

The potential for effect on water quality as a result of the ADP is expected to be positive during operation as its purpose (as mentioned) is:

- To provide a nett improvement in the degree of protection afforded to the receiving waters by the surface water management system, in accordance with the planning and environmental requirements of the relevant EU Directives, national and local plans and legislation, as well as daa's Sustainability Strategy.
- To optimise the performance of the surface water management system at Dublin Airport for improved efficiency, greater operational flexibility and resilience to a broad range of extreme weather events.
- To increase the hydraulic capacity of the surface water network and alleviate historic capacity issues.

Additionally, the Central Pollution Control Facility (CPCF) is proposed to provide nett improvements on the protection afforded to the receiving waters (as mentioned above) and to address the intensification of demand on the existing airport infrastructure. However, a combination of rainfall events or individual events (greater than the design capacity) could result in the storage volume of the CPCF being fully utilised. There would therefore be the potential for a spill of contaminated flows to the Cuckoo Stream in an extreme event or combination of events. A number of mitigation measures have been incorporated to the design and operation of the ADP, including an overflow mechanism for contaminated flows from the CPCF and an emergency response system to avoid and mitigate against the risks of overflows.

With the application of the mitigation measures specified above, the predicted impact on the hydrological environment during the operational phase of the ADP is as follows:

Table 3.2: Summary of residual effects during operational phase

Effect	Quality	Significance	Duration
Alteration of surface water flows	Positive	Significant	Long term
Improvement of water quality conditions in Cuckoo Stream	Positive	Significant	Long-term
Change to hydrological regime	Neutral	Imperceptible	Long-term

3.4 Land, Soils, Geology and Hydrogeology

AWN Consulting Ltd developed the land, soils, geology and hydrogeology chapter (**Chapter 11**) of the EIAR.

3.4.1 Baseline Environment

The proposed ADP site slopes east towards the Airport M1 Motorway, from c. 70 to 50 mAOD. It is expected that the regional groundwater flows to the east towards Dublin Bay.

Historical site investigations describe the bedrock across the ADP site as Medium strong/grained Limestone interbedded with laminated Mudstone. Bedrock is associated to limestones and mudstones of the Tober Colleen Formation, the Lucan Formation and the Malahide Formation.

The bedrock is the main aquifer feeding the surrounding area which is classed as Poor (Pl) and Locally Important (LI) aquifers. The ADP 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'. The most recent published status (www.epa.ie – Groundwater body WFD Status 2016-2021) for the Dublin and Swords GWB is 'Good', and their risk score is qualified by the WFD as under 'Review' for the Dublin GWB and 'Not at risk' for the Swords GWB based on their chemical composition.

The Source-Pathway-Receptor to the aquifer and to the Natura 2000 sites in Baldoyle Bay is considered to be negligible due to the overburden thickness, low permeability nature of till, lack of fracture connectivity within the limestone and the distance from the ABP site to these sites (c. 5.5 km).

There was no evidence of contamination during historical site investigation works.

3.4.2 Potential Effects of the Proposed Development

Construction Phase

During the construction phase, in absence of mitigation measures, the construction phase would present the following potential impacts.

Table 3.3: Summary of potential effects during construction phase

Impact	Quality	Significance	Duration
Changes on the soil and geological profile (due to excavation and infilling)	Negative	Moderate	Short-term
Potential groundwater contamination (due to accidental spills and leaks)	Negative	Moderate	Short-term

Operational Phase

The development is designed to minimise the introduction of new/redeveloped impermeable area. Across the whole scheme there is approximately 5,031m^2 of new hardstand proposed. This will have a minor effect on local recharge to ground; and the impact on the overall hydrogeological regime will be insignificant.

Therefore, in the absence of mitigation measures, the potential impacts during the operational phase are assessed in **Table 3.4**.

Table 3.4: Summary of potential effects during operational phase

Effect	Quality	Significance	Duration
Reduction in groundwater recharge	Neutral	Imperceptible	Long-term
Change to hydrogeological regime	Neutral	Imperceptible	Long-term

3.5 Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

In order to reduce impacts on the soils, geological and hydrogeological environment, a number of mitigation measures will be adopted as part of the construction works on site.

- Implementation of a Construction & Environmental Management Plan (CEMP).
- Fuel and chemical handling.
- Soil removal and compaction.

The residual impact on the hydrological environment during the construction phase of the ADP is presented in **Table 3.5**.

Table 3.5: Summary of residual effects during construction phase

Effect	Quality	Significance	Duration
Changes on the soil and geological profile (due to excavation and infilling)	Neutral	Not significant	Short-term
Potential groundwater contamination (due to accidental spills and leaks)	Neutral	Imperceptible	Short-term

Operational Phase

Following the implementation of the project design, the residual effect on the soil, geological and hydrogeological environment during the operational phase are presented in **Table 3.6**.

Table 3.6: Summary of potential effects during operational phase

Effect	Quality	Significance	Duration
Reduction in groundwater recharge	Neutral	Imperceptible	Long-term
Change to hydrogeological regime	Neutral	Imperceptible	Long-term

3.6 Noise & Vibration

An assessment has been made of the noise and vibration effects relating to the proposed Dublin Airport Airfield Drainage Project by AWN Consulting Ltd and is presented in **Chapter 12**. The assessment focused on the following elements:

- a survey of the existing noise and vibration environment in the vicinity of the proposed scheme;
- specification of appropriate noise and vibration criteria with reference to national and international guidance;
- prediction and assessment of the likely noise and vibration effects during the construction and operational phase of the scheme, and;
- specification of noise mitigation measures to achieve the criteria set for the scheme.

3.6.1 Baseline Environment

The baseline noise environment has been established through an attended environmental noise survey conducted at sensitive receptor locations surrounding the site to quantify the existing noise environment. The survey was conducted in general accordance with ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise.

There is no published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local Authorities typically control construction activities by imposing limits on the hours of operation and consider noise limits at their discretion.

Reference has been made to BS 5228 2009+A1 2014 Code of practice for noise and vibration control on construction and open sites. Part 1 to set appropriate construction noise thresholds for the development site.

A construction programme has been provided as part of the Construction Environment Management Plan. The programme provides details on items of construction plant, locations of work and hours of work, these details have been used to predict typical construction noise levels using guidance set out in BS 5228-1:2009+A1:2014.

3.6.2 Potential Effects of the Proposed Development

Construction Phase

Chapter 12 of the EIAR predicts noise levels at four sensitive receptors (dwellings) during each of the five phases of the project's construction. Effects were identified to be adverse and temporary.

Vibration measurements were conducted during various staged activities and at various distances. Given that the closest NSL is greater than 100m from the works, review of the previously measured vibration levels indicates that no vibrations will be perceptible from the works due to the distance between the works and the receptors. The effect will be not significant, imperceptible and short term.

In terms of construction traffic, the CEMP provides an overview of predicted construction traffic flows across the duration of the project with a worst-case period of approximately 900 movements per day which include 300 HGVs, 60 LGVs and 540 cars or vans. The majority of the HGV movements will be during the excavation phase on the eastern side of the proposed construction site with 274 daily HGV movements calculated for this activity alone. HGV movements for this location will travel along the existing heavily trafficked M1 and R132 roads. Existing traffic flow on the R132 is approximately 24,000 daily movements, with even greater traffic flows on the M1. Given that it takes an approximate 25% increase in traffic flows to increase noise levels by 1 dB it can be concluded that the increase in traffic on the R132 and the M1 will not result in any increase in noise levels at surrounding receptors.

At the western side of the site the traffic will be routed along the R108. Data for existing traffic flows on the R108 indicate that peak hour traffic numbers in the AM and the PM are approximately 500 vehicles for both periods. The overall traffic impact during construction works can be considered negative, short-term and not significant.

Operational Phase

The operational stage is not expected to produce noise or vibration perceptible at any receptor. Plant will either be located underground or will be silent in operation and no additional traffic is expected as a result of the proposed development. Consequently, effects during the operational stage are described as neutral, imperceptible and long term.

3.6.3 Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

A suite of mitigation measures have been proposed the construction stage in line with the guidance contained within BS5228: 2009 + A1 2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites - Part 1 Noise. Various mitigation measures will be considered and applied during the construction of the proposed development to minimise the noise and vibration effects where practicable.

Following mitigation, implementation it is predicted that a negative, temporary and not significant effect will occur during both the day and the evening periods at all assessed / identified receptor locations. Works have the potential to be undertaken during the night period, although this will be avoided where practicable. Where works do take place at night there is predicted to be a not significant effect at noise sensitive locations (NSL) 1 to 3, however, a potentially moderate and not significant effect is predicted at NSL 4.

Operational Phase

There are no effects predicted during the operational stage of the project. Plant will either be located underground or will be silent in operation and no additional traffic is expected as a result of the proposed development, hence the effect will be neutral, imperceptible and long term.

3.7 Material Assets (Waste Management)

AWN Consulting Ltd. carried out an assessment of the potential effects associated with waste management during the construction and operational phases of the proposed development, see **Chapter 13** of the EIAR. The receiving environment is largely defined by Fingal County Council (FCC) as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

The assessment of the effects of the Proposed Development, arising from the consumption of resources and the generation of waste materials, was carried out taking into account the methodology specified in relevant guidance documents, along with an extensive document review to assist in identifying current and future requirements for waste management, including national and regional waste policy, waste strategies, management plans, legislative requirements and relevant reports. A summary of the documents reviewed, and the relevant legislation is provided in the Resource & Waste Management Plan (RWMP) provided as **Appendix 13.1** to the EIAR.

3.7.1 Baseline Environment

There is currently no waste generated at the proposed development site.

3.7.2 Potential Effects of the Proposed Development

The proposed development will generate a range of non-hazardous and hazardous waste materials during the site construction and operational phases. If waste material is not managed, stored and disposed of correctly, it is likely to lead to adverse effects *via* unnecessary landfill use, litter and pollution issues at the proposed development site on a local and regional level.

Construction Phase

During the excavation and construction phase, the mismanagement of waste, including the inadequate storage of waste, inadequate handling of hazardous waste, the use of inappropriate or insufficient segregation techniques, and the use of non-permitted waste contractors, would likely lead to adverse effects such as waste unnecessarily being diverted to landfill, litter pollution which may lead to vermin, runoff pollution from waste, fly tipping and illegal dumping of waste. In the absence of mitigation, the effect on the local and regional environment is likely to be long-term, significant and adverse.

Operational Phase

It is anticipated that very small amount of waste will be generated from staff during inspections and maintenance works during the operational phase of the proposed development, therefore there are no potential effects from the operational phase in respect of waste management.

3.7.3 Residual Effects (post-mitigation)

Construction Phase

During the construction phase, typical construction waste materials will be generated which will be source segregated on-site into appropriate skips/containers, within designated waste storage areas and removed from site by suitably permitted waste contractors as required, to authorised waste facilities, by appropriately licensed waste contractors. while the accurate keeping of waste records will be undertaken. All waste leaving the site will be recorded and copies of relevant documentation maintained.

Where possible, materials will be reused on-site to minimise raw material consumption. Source segregation of waste materials will improve the re-use opportunities of recyclable materials off-site. This will all be overseen by the main contractor who will appoint a construction phase Resource Manager to ensure effective management of waste during the excavation and construction works. All construction staff will be provided with training regarding the waste management procedures on site.

A carefully planned approach to waste management and adherence to the site-specific Resource and Waste Management Plan (**Appendix 13.1** of the EIAR) during the construction phase will ensure that the effect on the environment will be short-term, neutral and imperceptible.

Operational Phase

There will be no mitigation measures required for the operational phase of this development as no operational waste will be generated.

There will be no residual effects during the operational phase as no operational waste will be generated.

3.8 Material Assets (Traffic & Utilities)

AWN Consulting Ltd prepared the chapter on Material Assets (Traffic and Utilities), **Chapter 14** of the EIAR. This chapter assesses ownership and access, built services and infrastructure, which have not already been addressed elsewhere in this EIA Report. The associated built services and infrastructure in the vicinity of the site are summarised in the following sections; further detail is provided within the planning application documentation.

3.8.1 Baseline Environment

The site is located within, and in the vicinity of, the Dublin Airport campus. Dublin Airport is an international airport serving the island of Ireland. The airport is located 7 km north of Dublin, in Collinstown, and 3 km south of the town of Swords.

The proposed development subject of this planning application consists of an Airfield Drainage Project (ADP) with associated development and ancillary works at Dublin Airport, Co Dublin.

3.8.2 Potential Effects of the Proposed Development

Construction Phase

During the construction phase there are potential short-term nuisances such as dust, noise, as well as the potential for pollution of groundwater or the existing drainage ditches associated with the construction phase. The potential effect associated with land use and property for the construction phase will be localised, negative, not significant, and short-term.

The power requirements for the construction phase will be relatively minor and therefore the power demand for the construction phase will have a short-term, imperceptible effect.

During construction, water will be required for tunnelling of pipelines, wheelwashing, dust suppression, welfare facilities and canteen facilities. Water from the public mains would be considered for use following liaison with Irish Water. In the West Compound, there is an existing well that has been used for the previous construction works in this area. The demand during the construction phase is not expected to be significant enough to have any potential effect on the existing water supply network. The potential effect on potable water infrastructure for the construction phase is neutral, imperceptible, and short-term.

Welfare facilities will be provided for the construction workers on site during the construction works and wastewater will be of domestic origin only. The potential effect on foul drainage during the construction phase is negative, imperceptible, and short-term.

The water demand during the construction phase will not be significant enough to affect existing pressures. The potential effect on potable water supplies and infrastructure during the construction phase is negative, imperceptible, and short-term.

There are no potential effects associated with telecommunications for the proposed development during the construction phase.

Operational Phase

During the operational phase the proposed development is not anticipated to generate significant air (including odour), noise or water emissions during normal operating conditions; these have been discussed further in the respective EIAR chapters, **Chapter 10** (Hydrology), **Chapter 12** (Noise & Vibration) and **Chapter 15** (Air Quality & Climate).

Due to the zoning of these lands as 'DA - Dublin Airport', the overall potential effect associated with land use and property for the operational phase will be a localised neutral, not significant, and long-term.

Power supply for the proposed development will be provided from daa's existing internal supply. As such, there is a long-term, neutral, not significant effect on electrical supply during the operational phase of the proposed development.

The proposed ADP developments will not increase the demand on the existing drainage infrastructure. The proposed regional control measures are designed to provide nett improvements to the existing surface water management system, as well as providing safeguarded capacity for storage of contaminated runoff at future development horizons. The potential effect associated with surface water for the operational phase is neutral, imperceptible and long-term.

During the operational phase, the proposed Central Pollution Control Facility (CPCF) pumping station will pump flows from the CPCF to the public foul sewer at a controlled discharge rate. The potential effect on foul drainage for the operational phase is neutral, imperceptible, and long-term.

During the operational phase effects on traffic will be neutral, not significant, and long term.

3.8.3 Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

Ongoing consultation with FCC, Bord Gáis, Irish Water, EirGrid, ESB Networks and other relevant service providers within the locality and compliance with any requirements or guidelines they may have will ensure a smooth construction schedule without disruption to the local residential and business community. The works contractor will be obliged to put best practice measures in place to ensure that there are no interruptions to these utilities, unless this has been agreed in advance.

The mitigation measures set out in this EIAR and in the Construction Environmental Management Plan (CEMP) prepared by Nicholas O'Dwyer will be implemented and adhered to by the construction Contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager and Ecological Clerk of Works where relevant. All personnel working on the site will be trained in the implementation of the procedures.

The implementation of mitigation measures within each chapter will ensure that the predicted effects on the material assets will be neutral, imperceptible, and short-term for the construction phase.

Operational Phase

The implementation of the mitigation measures within each EIAR chapter will ensure that the residual effects on material assets during the operational phase will be neutral, imperceptible and long-term.

3.9 Air Quality & Climate

The Air Quality and Climate chapter of the EIAR (**Chapter 15**) was compiled by AWN Consulting Ltd.

3.9.1 Baseline Environment

Air Quality

In terms of the existing air quality environment, data available from similar environments indicates that levels of particulate matter less than 10

microns and particulate matter less than 2.5 microns (PM_{10}/$PM_{2.5}$) are, generally, well within the National and European Union (EU) ambient air quality standards.

Climate

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with the European Union's Regulation 2018/842. The EPA state that Ireland had total ESR GHG emissions of 46.19 Mt CO_2eq in 2021. This is 2.71 Mt CO_2eq higher than Ireland's annual target for emissions in 2021. The EPA predict that Ireland can comply with the GHG targets for 2021 – 2030 provided full implementation of the measures outlined within the Climate Action Plan and the use of the flexibilities available.

3.9.2 Potential Effects of the Proposed Development

Construction Phase

Air Quality

An assessment of the potential dust impacts as a result of the construction phase of the proposed development was carried out based on the UK Institute of Air Quality Management (IAQM) guidance. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property, human health effects and dust related ecological effects. The sensitivity of the area was combined with the dust emission magnitude for the site under three distinct categories: earthworks, construction and trackout (movement of vehicles) in order to determine the mitigation measures necessary to avoid significant dust effects. It was determined that the surrounding area was of low sensitivity in relation to potential dust soiling, of low sensitivity in relation to dust related human health effects and of low sensitivity in relation to dust related ecological effects. There is at most a low risk of dust related impacts associated with the proposed development. In the absence of mitigation there is the potential for short-term, direct, neutral and imperceptible effects to air quality.

Climate

Based on the scale and temporary nature of the construction works, the potential effect on climate change and CO_2 emissions from the construction of the proposed development is deemed to imperceptible, direct, neutral, and temporary in relation to Ireland's obligations under the EU 2030 target.

Operational Phase

As the proposed pipeline will be underground once completed, effects to air quality or climate during the operational phase are predicted to be imperceptible, direct, neutral, and long-term.

3.9.3 Mitigation and Residual Effects (Post-Mitigation)

Construction Phase

Air Quality

Detailed dust mitigation measures are outlined within **Section 15.7** in **Chapter 15** which are incorporated into the Construction Environmental Management Plan for the site to ensure that no significant nuisance as a result of construction dust emissions occurs at nearby sensitive receptors. Once these mitigation measures are implemented the effects to air quality during the construction of the proposed development are considered, temporary, direct, adverse and imperceptible in nature, posing no nuisance at nearby sensitive receptors (such as local residences).

Climate

As referenced above the potential effect on climate change and CO_2 emissions from the construction of the proposed development is deemed to be minor adverse, temporary and not significant in relation to Ireland's obligations under the EU 2030 target, therefore no mitigation is proposed.

Operational Phase

As the proposed pipeline will be underground once completed, effects to air quality or climate during the operational phase are predicted to be imperceptible, direct, neutral, and long-term.

3.10 Archaeology & Cultural Heritage

The Archaeology and Cultural Heritage chapter of the EIAR, **Chapter 16**, was compiled by Courtney Deery Ltd.

No designated archaeological or architectural heritage sites will be impacted by the proposed development. No sites or features of architectural or cultural heritage interest were identified within the proposed development boundary.

3.10.1 Baseline Environment

The archaeological potential of this landscape is well established. Most of the lands within the proposed development boundary have been previously disturbed and developed, the most recent of which – the North Runway area – revealed multiple archaeological sites through archaeological investigations. Two possible fulachtaí fia sites were identified by the geophysical survey for the North Runway Project, but not subjected to further investigation at the time. They are located within the proposed ADP works boundary in Pickardstown townland, at the site of the proposed West Compound.

In addition, the geophysical survey that was undertaken at the southern end of the Eastlands area in 2019 revealed a number of possible archaeological sites / features that lie within the proposed development boundary, including five possible ring-ditches, two of which may be encircled by larger enclosures, a possible trackway, and several possible pits. There is a potential that additional features may be identified elsewhere in the Eastlands area within the proposed development boundary.

3.10.2 Potential Effects of the Proposed Development

There would be a direct negative impact of high magnitude on these features, should they prove to be archaeological in nature. As the sensitivity of the receptors is unknown, the significance of effect is undetermined.

The majority of the proposed works in relation to the Cuckoo Stream will take place west of the R132 road in Dublin Airport at the South Apron, where the stream channel has been previously disturbed and comprises a man-made, wide, shallow, open channel. The only other disturbance involves an overflow pipeline to the stream at the eastern end of the permanent works planning corridor in the Eastlands area. No other works are proposed along the stream course in the Eastlands area.

3.10.3 Mitigation and Residual Effects (Post-Mitigation)

Archaeological monitoring of the proposed works will take place at the Cuckoo Stream in the Eastlands area.

Geophysical survey will be carried out as a mitigation measure within the Eastlands area, where not already undertaken, well in advance of construction. This will seek to identify any other archaeological sites or features that may be present subsurface. Further archaeological

investigation will be required on the basis of these results. This will include archaeological testing of the potential archaeological sites / features already identified in Toberbunny and Pickardstown townlands, and any additional features identified by geophysical survey. Any confirmed archaeological features will be resolved through archaeological excavation, preservation *in situ*, preservation by design, or archaeological monitoring, in consultation with the National Monuments Service (Department of Housing, Local Government and Housing).

3.11 Landscape & Visual Amenity

A Landscape and Visual Appraisal of the proposed development (**Chapter 17** of the EIAR) has been undertaken by Stephenson Halliday Chartered Landscape Architects.

The LVA has been undertaken in accordance with good practice guidance and has involved preliminary desk-based research and baseline studies, fieldwork, assessment and reporting. Preliminary desk-based baseline studies indicated that the receiving environment is of relatively low sensitivity. A preliminary assessment of the potential effects of the proposed development indicated that effects would occur mainly during the construction phase and would occur across a limited geographical area. The scope of the LVA and proposed mitigation has therefore focussed on the construction phase and identifies operational effects.

3.11.1 Baseline Environment

The proposed development comprises of an upgraded drainage network to the existing runway at Dublin Airport, including underground drainage delivery and water storage system from the existing runway, beneath the R132 and into a Central Pollution Control Facility (CPCF) facility. The majority of the proposed development will be within the existing airfield with a small area of greenfield land in the ownership of Dublin Airport being used for the CPCF. The majority of the proposed development will be buried underground.

3.11.2 Potential Effects of the Proposed Development

The proposed development would give rise to Moderate/Minor and not significant adverse effects on character during the construction phase which would reduce to Slight/Negligible and not significant on completion. The majority of components would be buried and the introduction and gradual maturation of mitigation planting would provide a degree of screening to the substation and other structures in the east of the proposed development during operation.

The only notable effects on views would occur from the R132 on the western boundary during the construction phase. Effects on views as experienced by visual receptors would be Minor/Neutral and not significant after the implementation and establishment of mitigation planting.

There would be no significant effects experienced by any landscape or visual receptor and no notable effects from the wider area.

3.12 Disasters & Emergencies

Chapter 6 of the EIAR has been prepared by Nicholas O'Dwyer Ltd. and presents a risk assessment of major accidents and/or disasters relevant to the Airfield Drainage Project (ADP) proposal, analysing the surface water management system to determine its resilience and operational flexibility to respond to the continually changing conditions within the airfield, as required in the EIA Directive, and described in the EPA's EIAR 2022 Guidelines.

The findings of the assessment indicate that the combination of primary mitigation measures included in the design of the ADP surface water

management system, will typically be sufficient to prevent disaster / worst-case scenarios.

The likelihood of disaster / worst-case scenarios would be lower under the proposed arrangement than under the current arrangement, due to the proposed infrastructure upgrades, system optimisations and additional contingency measures / safeguards.

The severity of any effect would also be reduced under the proposed system, due to the primary mitigation measures which will be implemented.

The majority of worst-case scenarios were deemed to have a Low resultant risk level given the primary mitigation measures included in the ADP design. While "low" risk events do not require further mitigation at this stage, nonetheless, they will be further assessed at detailed design stage to identify any opportunities for further risk reduction. For those events with a "moderate" resultant risk level, while all reasonably practicable measures have been incorporated at this stage of design, further mitigation measures are recommended for implementation at detailed design stage and during the operation of the system to reduce the risk level to a rating of "low".

daa will regularly assess the risk of major accidents and/or disasters throughout the operation phase and will periodically review emergency response protocols to identify areas, if any, where the risk mitigation can potentially be further strengthened.

3.13 Interactions & Cumulative Effects

This Chapter highlights where there is potential for cumulative effects of the proposed ADP with other developments. It also considers the potential for interactions and inter-relationships between the factors of the environment that have been examined individually throughout this EIAR which could result in an effect being either positive or negative, as well as having varying levels of significance.

The potential for other schemes to result in cumulative effects with the ADP is dependent upon the location, type and scale of development and associated activities, and the type and duration of any likely environmental effects of the other developments. This includes any known permitted or planned projects by third parties.

No significant cumulative effects were identified.

3.14 Summary of Mitigation & NEXT Steps

3.14.1 Mitigation Measures

Chapter 19 of the EIAR presents a summary of mitigation measures identified in each environmental factor assessment chapter. The mitigation measures are the environmental commitments for construction and implementation of the project. The final CEMP must take account of all the mitigation measures and any conditions of a planning consent if granted.

3.14.2 Next Steps

This EIAR and documentation associated with the planning application will be available for viewing on Fingal County Council's website under the relevant planning reference number once assigned by the planning authority on lodgement of the planning application. The EIAR may be inspected free of charge and copies of same purchased by members of the public during normal opening hours at the following address:

Planning Department

Fingal County Council

County Hall

Main Street, Town Parks

Swords, Co. Dublin, K67 X8Y2

The EIAR can also be accessed *via* the Department of Housing, Local Government and Heritage's EIA Portal, which will provide a link to the planning application on the planning authority's website. The EIA Portal can be accessed at http://bit.ly/3ZMsiQx.

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