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## Environmental Impact Assessment Report Development at Waterford Airport

### Volume 2 – Chapter 2 – Description of the Development

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Prepared for: Waterford City & County Council in Partnership with Waterford Regional Airport PLC



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## 2. DESCRIPTION OF THE DEVELOPMENT

### 2.1 Introduction

This chapter describes the existing and proposed development at Waterford Airport. Waterford Airport is operational since 1981 when it operated flights between Waterford and Dublin. The first international scheduled service was between Waterford and Gatwick in 1985. Currently Waterford Airport does not operate scheduled commercial flights, however, the airport continues to facilitate the Irish Coastguard helicopter search and rescue operations. In addition, it handles corporate aircraft for a range of local and international businesses located in the South East, providing that direct access which is so vital to underpin the ability of the region to compete on the national and international stage. The airport provides aviation facilities for various local and visiting organisations including the Irish Air Corp conducting maritime patrols and training, the Garda airborne support unit and various visiting flight training organisations. The airport facilitates helicopter pleasure flights and has regular interactions with ballooning enthusiasts.

### 2.2 Existing Environment

Waterford Airport is located in Killowen, Co. Waterford, ca. 5.5km to the north east of Tramore and ca. 7.4km north west of Dunmore East in Co. Waterford. Figure 2.1 illustrates the location of Waterford Airport and Figure 2.2 illustrates the main elements of the proposed development.

The Corine land cover classification for the site is illustrated in Figure 2.3. The site is classified as 1.2.4 'Airports'. Adjacent lands in the vicinity of the site are classed as 2.3.1 'Pastures' and an area of 3.1.2 'Coniferous Forest' to the north of the airport.

Settlement in the area is made up of dispersed one-off dwellings located along the local road network. Tramore is the most proximate town to the airport, ca. 3km to the south west. Within 1 km of the airport there are 62 no. residential receptors and 13 receptors which are classed as both residential and commercial receptors<sup>1</sup>. 35 no. commercial receptors including various enterprises are located within the airport area and airport business park.

The development site is fenced off for security and is bound by natural field hedgerows and ditches. Existing fields are well drained by natural field drainage in the undeveloped areas. The existing runway falls across two natural drainage catchments, with the northern end (c350m) of the existing runway within the Ballygunnmore catchment and the remaining element of the existing runway in the Kilmacleague West catchment.

Works are proposed on lands outside of the airport compound to the north and south of the runway in order to accommodate navigation lights. Lands to the north are located on the opposite side of the R708 road and are made up of agricultural fields with hedgerows and drainage. An agricultural shed is located adjacent the proposed works and is not affected by the proposed works. To the south, works are proposed on the opposite side of the R685 on lands made up of scrub, adjacent to an agricultural yard.

Existing catchment drainage travels to the Kilmacleague West watercourse for the southern part of the site (at its closest is 1.6km from the Tramore Back Strand) and the Ballygarran to the east. A drainage channel takes the surface water drainage from the northern part of the site to the Ballygunnmore, which drains to the Tramore Back Strand, 2.4km to the south.

<sup>1</sup> **Source:** Eircode Postcodes database (2020)



The subsoils present at the study area are Made Ground; and Till derived from Acidic Volcanic Rocks. The soils underlying the development predominantly comprise Surface Water and Groundwater Gleys. The southern portion of the site is underlain by the Booley bay Formation with the northern portion of the site underlain by the Ballyhack Member. The site is located within the Dunmore East groundwater body.

The site is located 1.6km upstream of the water dependant habitat, Tramore Back Strand SPA. The Tramore Back Strand SAC extends from Tramore to Kilmaclegue. The boundary of the SAC is directly south of the proposed development and 1km south of the R685. The proposed site boundary does not encroach into the SAC at any point. No works are planned to take place in or at the SAC.

The site is accessed by the R708, located at the entrance to the airport. This road runs from Waterford City to the R685 at Cloghernagh, south east of the site. The R685 travels to the south of the development and connects to Tramore.

Current aircraft activity at Waterford Airport includes Irish Coastguard helicopter activities, corporate aircraft flights, Irish Air Corp and Garda activities, general aviation and commercial pilot training organisations.

## 2.3 Existing Airport Development

The existing airport consists of the following:

- Terminal Building
- Hangers
- Aprons
- Taxi Way
- Runway (1,433m)
- Control Tower
- Search and Rescue Facility Building
- Car Park (245 spaces)

The airport is open between the hours of 08.30 – 22.00 and is operational all year round, with the exception of Christmas day where search and rescue activity continues. The majority of the total number of movements now and in the future will be made up of single engine training aircraft (PA28, C172 types). Aircraft movements at the airport have declined since its peak in 2007 and 2008. Total movements per annum for the period between 2007 and 2019 are detailed in Table 2-1. Of note is a significant increase in flight movements in 2019. This large increase is attributed to pilot training movements which consisted of small piston engine light aircraft for pilot training flights. Pilot training flights made up approximately 87% of flight movements at Waterford airport in 2019.

Following the discontinuation of medium passenger turboprop flights in 2016, typical aircraft movements at Waterford Airport are now made up of the following aircraft type:

- Business Jet, E.g. Citation 525
- Multi Engine Piston / Turbine, E.g. PA44 / C441
- Single Engine Training Aircraft, E.g. PA28
- Helicopter, E.g. S91 – EC135



The projected flight movements at the airport are listed in Table 2-2. These are made up of the above aircraft type and represent a “Do-nothing” scenario for the purpose of the EIAR.

**Table 2-1: Aircraft Movements 2007-2019**

Year	Total Movements	Year	Total Movements
2007	30,156	2014	8,710
2008	29,814	2015	10,947
2009	18,105	2016	11,804
2010	15,936	2017	10,922
2011	16,788	2018	9,746
2012	13,985	2019	22,895
2013	10,954		

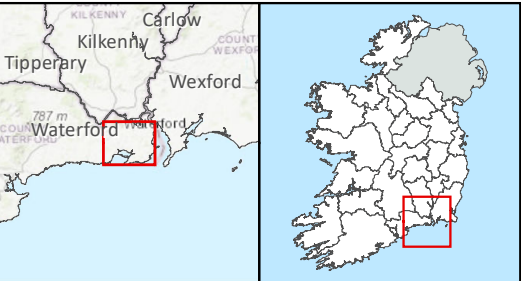
**Table 2-2: Projected Aircraft Movements\* (non-commercial flights) – Do-nothing scenario**

Year	Total Projected Movements
2020	17,306
2021	13,407
2022	14,624
2023	15,962
2024	17,431
2025	19,043

\*Projections provided by Waterford Regional Airport PLC







Site Boundary

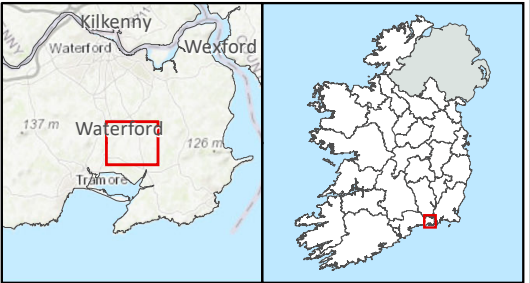
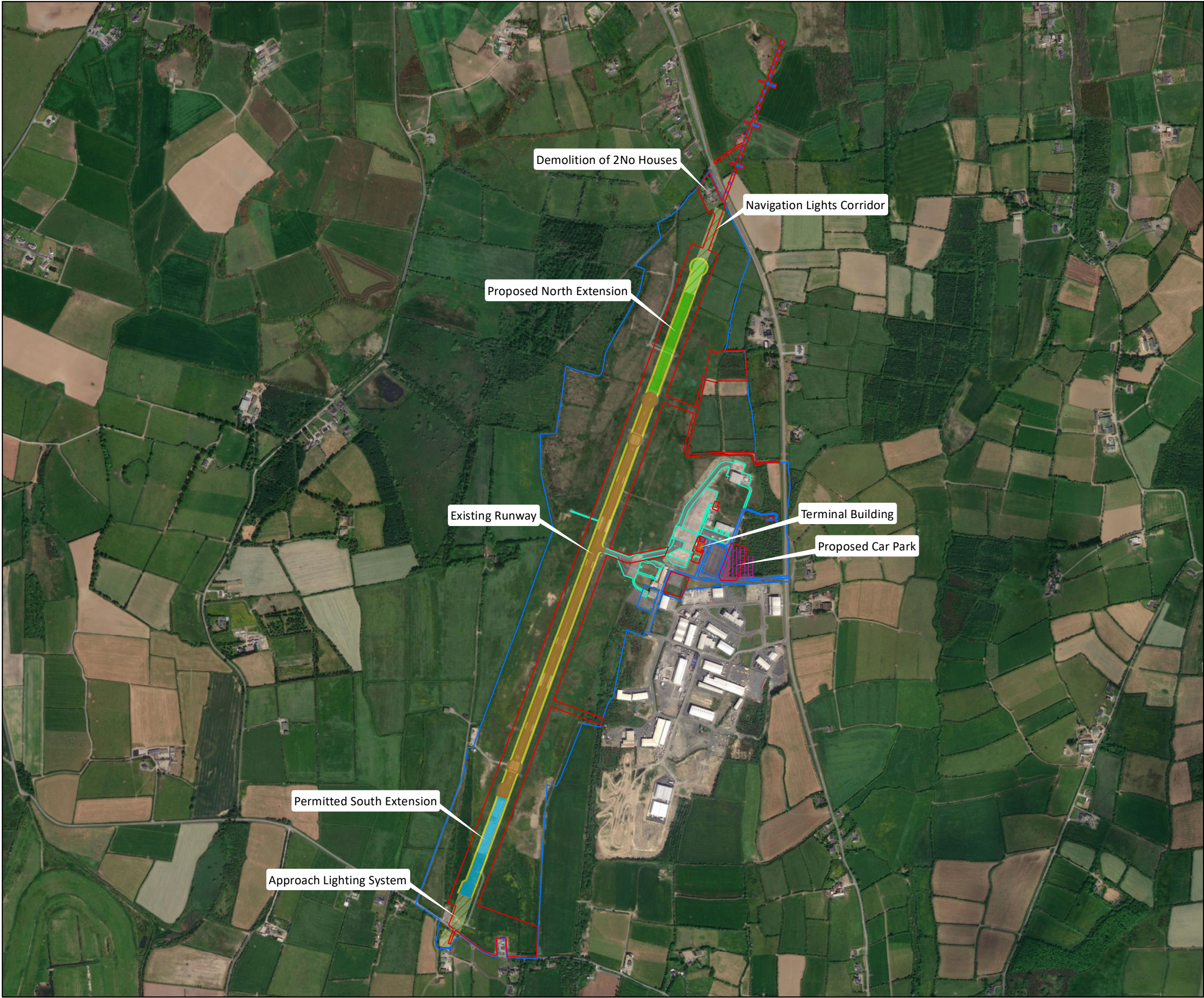
Land under SERA (South East Regional Airport) and Waterford City and Council Ownership

TITLE:		Site Location	
PROJECT:		Waterford Airport Runway Extension	
FIGURE NO:		2.1	
CLIENT:		Waterford Airport	
SCALE:	1:50000	REVISION:	0
DATE:	13/05/2020	PAGE SIZE:	A3









- Site Boundary
- Land under SERA (South East Regional Airport) and Waterford City and Council Ownership
- Airside Infrastructure
- Landside Infrastructure
- Runway Proposals**
- Existing Runway (Phase 1)
- Proposed North Extension (Phase 2)
- Permitted South Extension (Phase 2)
- Phase 3 (extension to width 7.5m)
- Terminal Building
- Proposed Car Park
- Navigation Lights Corridor



TITLE:		Site Layout	
PROJECT:		Waterford Airport Runway Extension	
FIGURE NO:		2.2	
CLIENT:		Waterford Airport	
SCALE:	1:12500	REVISION:	0
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## 2.4 Proposed Project

The applicant Waterford City & County Council, in partnership with Waterford Regional Airport plc propose to construct an extension to the existing runway at Waterford Airport, Killowen, County Waterford. The proposed project is located in the townlands of Lisselan, Killowen, Ballygarran, Monamintra and Keiloge, Co. Waterford. The project aims to provide the additional space needed to land larger planes at the airport and resume domestic and international commercial flights, as well as maintain current uses of the airport.

The proposed development will comprise of an additional 491m of new runway including a new hammerhead at its northern termination. A 363m extension to the southern end of the runway is also proposed<sup>2</sup>. The full length of the runway including proposed and existing sections will be 2,287m. The extension of the runway will also require the upgrading of ancillary development including car parking, terminal building, drainage, wastewater treatment unit and navigation lighting.

The proposed project for EIA purposes will consist of the following infrastructure:

- 491m of new runway extending north from the existing.
- 363m of new runway extending south from the existing.
- Widening of the entire length of the runway by 15m to extend the runway width to 45m.
- Widening of taxiway by 8m to provide a width of 23m.
- Extension to car parking area to provide up to 205 no. additional spaces.
- Set down area for public transport within the demarcated area within the existing road layout at the airport terminal.
- Re-alignment of airport security fencing.
- New navigation lighting, aligned to runway, to be provided within airport lands and on adjoining lands, including associated ducting.
- Underground Holding Tank (cold weather storage).
- Alterations to drainage system.
- Extension of the existing terminal building of ca. 1,170sqm.
- Demolition of 2 no. houses adjacent to the north runway.
- Upgrade of existing wastewater treatment plant.

The proposed development will consist of the following operational changes:

- Alteration of take-off and landing position to extend into the proposed expansion.
- Take-off and landing of jets such as the Boeing 737/800 and Airbus 320.
- Capacity for up to 345,000 passengers per annum by year five of the operational phase.

The alignment of the runway will follow a 3-degree flight approach path which is the path currently in operation. The runway drainage, which consists of herringbone land drains and percolation, will be reinstated out to 25m either side of the proposed runway extension. Two drainage lines will link the runway percolation area to the adjacent watercourse.

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<sup>2</sup> A 350m extension to the southern end of the runway was the subject of a previous planning application which was granted a 10-year permission in 2014 (Planning Ref. 14/89).



As part of the operational safety requirements for the proposed runway extension, two houses are subject to Compulsory Purchase Order under An Bord Pleanála reference PL93 .306324. These dwellings are located at the northern end of the runway. The dwellings will be demolished as they fall within the Obstacle Limitation Surfaces (OLS) zone of the proposed runway.

Whilst this EIAR considers the entire project as outlined above, the planning application which this EIAR accompanies is confined to the elements as detailed in Table 2-3. For clarity, the elements of the project which are not the subject of the accompanying planning application are also listed in Table 2-3.

**Table 2-3: Elements of the Project**

<b>Elements of the Project that are the Subject of this Planning Application</b>
Extension of the runway to the north and south by 491m and 363m respectively.
Widening of the entire runway by 15m.
Taxiway widening by 8m.
Navigational lighting.
Alterations to drainage.
Demolition of 2 no. dwellings.
Provision of water storage tank.
Extension to the parking area to provide for 205 no. new parking spaces
Realignment of security fencing.
Alteration of take-off and landing position to extend into the proposed expansion.
Take-off and landing of jets such as the Boeing 737/800 and Airbus 320.
Capacity for up to 345,000 passengers per annum by year five of the operational phase.
<b>Elements of the Project Considered for EIA that are not Proposed as part of this Planning Application</b>
Extension of the existing terminal building of ca. 1,170sqm.
Upgrade of existing wastewater treatment plant.
Set down area for public transport at the terminal building.





#### 2.4.1 Layout

The layout of the northern runway extension is contiguous to the existing runway. The development will extend 491m north beyond the existing turning circle. Navigation lighting will be provided on adjacent lands north of the proposed extension and are included as part of the proposed project. Security fencing will be re-aligned to encompass the runway extension. The northern extension will work in combination with the permitted southern extension (ref. 14/89) creating a total runway span of approximately 2,287m meters. The extent of the runway will be widened by 7.5 meters on each side bringing the width of the main section of runway to 45 meters. A new hammerhead will be included at the northern extent of the runway, the width of which will measure approximately 55 meters. Levels of the runway surface are described in submitted planning drawings together with details of required 'cut & fill' operations.

The permitted southern runway extension includes 350m of new runway and turning circle. It is proposed to supersede this consent with a southern runway extension of 363m. The southern runway extension will tie into the existing runway and the associated navigation lights will be put in place during construction. The navigation lights at the southern end of the runway will extend onto adjacent lands as indicated in the accompanying planning drawings.

The drainage proposal for the runway extension will consist of percolation zones either side of the runway consisting of permeable stone fill with overlying clay removed where necessary in order to improve percolation. A land drain from the percolation stone areas will be installed to allow water to flow directly from the percolation zone to each watercourse of the existing catchment if necessary. The existing ground levels on site will not be modified extensively and the infrastructure extension to the north will be drained within the Ballygunnmore catchment, with the southern extension drained within the Kilmacleague West catchment, allowing the existing drainage regime to be maintained as much as possible. Further detail on drainage can be found in Chapter 7 Hydrology & Water Quality.

Road access to the airport will remain as existing. Additional car parking will be provided east of the existing car park. Extension to the carpark will provide an addition of 205 no. spaces. This will bring the total to 450 no. carparking spaces. The existing 245 no. spaces adequately provided for the ca. 144,000 passengers who used the airport in 2008. It is therefore considered that 450 no. car parking spaces will accommodate the maximum projected 345,000 passengers per annum by year five of operations. A bus and taxi set down area is also provided for at the south-eastern elevation of the terminal building. A pedestrian footpath will traverse the existing and proposed car parks. This will be demarcated on the existing road layout at the terminal building.

The extension to the terminal building will comprise approximately 1,170sqm of additional floor space. This will accommodate new security, baggage handling and passenger facilities. It is anticipated planning permission will be sought for the extension to the terminal building from the planning authority at a later date. This will include an extension to the south west of the terminal building of approximately 775sqm to accommodate departure terminal facilities. An extension of approximately 175sqm will be added to the north-eastern elevation of the existing building to provide for new passenger arrival facilities. An extension to the airside elevation of the terminal building of approximately 220sqm will accommodate an extension to the baggage holding area. The terminal building's height will remain the same. An outline of the indicative design is shown in Figure 2-4.



Navigation lighting will be installed to the north and south of the runway. The lighting will be provided on steel frames, mounted on concrete plinths and will be between 1 and 2 meters above ground level. Each set of lights will be fenced off with wooden fencing. Lighting at the northern end of the runway will extend approximately 765m from the runway, crossing the public road (R708). Lights will appear every 30m on the northern side of the R708. An area of approximately 0.3 hectares of agricultural lands will be required to accommodate the lights north of the R708. Agricultural practice will continue around the light installations. Details of the navigation lights at the north of the runway are illustrated in planning drawing 218034-LP-02. Navigation lighting at the southern end of the runway will extend approximately 145m from the runway, crossing the public road (R685) to an area of scrub land. Detail of the navigation lights at the south of the runway are illustrated in planning drawing 218034-LP-03.

## 2.4.2 Operations

It is anticipated that the extended airport will achieve approximately 1,120 passenger flights per annum by year five of operations, considerably less than previous years as outlined in Table 2-4, but with higher numbers of passengers per flight. Passenger projections are set out in Table 2-5 below. Flights are anticipated to consist of medium jet aircraft types such as Boeing 737/800 and Airbus 320. Current airport operations will continue, consisting of non-schedule flights such as business jets, flight training, multi and single-engine general aviation and helicopter operations.

**Table 2-4: Passenger Aircraft Movements Per Annum - Five Year Projection**

	Arrivals	Departures
Year 1	297	297
Year 2	529	529
Year 3	769	769
Year 4	973	973
Year 5	1,120	1,120

Passenger numbers are anticipated to reach up to 345,000 per annum by year five of operations as a result of the proposed runway development. Projections for passenger numbers are set out in Table 2-5 below for five years of operations.

**Table 2-5: Projected Passenger Movements (Aircraft Type B737)**

	Inbound	Outbound	Total Per Annum
Year 1	46,000	46,000	92,000
Year 2	81,500	81,500	163,000
Year 3	119,000	119,000	238,000
Year 4	150,000	150,000	300,000
Year 5	172,500	172,500	345,000



Scheduled operations are expected to take place on a 'drop-in' basis meaning it is not anticipated that scheduled passenger aircraft will be based at Waterford Airport. Commercial operations in the airport are therefore likely to be serviced by 'second rotation' activity. That is, aircraft will land at the airport and disembark passengers and immediately embark new passengers for onward journey, without requirement for any planned servicing or refuelling activities.

It is anticipated that the airport will continue to operate flights throughout the year at similar hours to its existing operations, all days in the year except Christmas Day (Coastguard activities may occur on Christmas Day). Operations are likely to be based around weekday commuting, and while elevated levels of activity are anticipated during summer months, this uplift will be of an increase of less than 20%.

Aircraft fuel is stored at the airport; however, it is not anticipated that commercial aircraft will uplift fuel at Waterford Airport for UK and near-Europe destinations. This is due to the comparative high cost of refuelling at this location. It is expected that an airline serving Waterford will plan for sufficient fuel for return journeys.

De-icing of aircraft and pavement areas is proposed to be undertaken during cold spells in winter. De-icing is uncommon at Waterford airport due to its location and operational hours. Historic de-icing of aircraft at the airport has been associated with early morning flights. The 'drop-in' schedule of flights anticipated for the airport, whereby first morning flights will commonly arrive after 09:00 hrs, is considered to result in the possibility that no de-icing will be required. Any De-icing will involve intermittent use of Clearway De-icing products, which is classed as 'low hazard to waters (WGK Class 1)'<sup>3</sup> reported to be due its biodegradability and low aquatic toxicity. The product carries the 'Blaue Engel' (Blue Angel) label<sup>4</sup>.

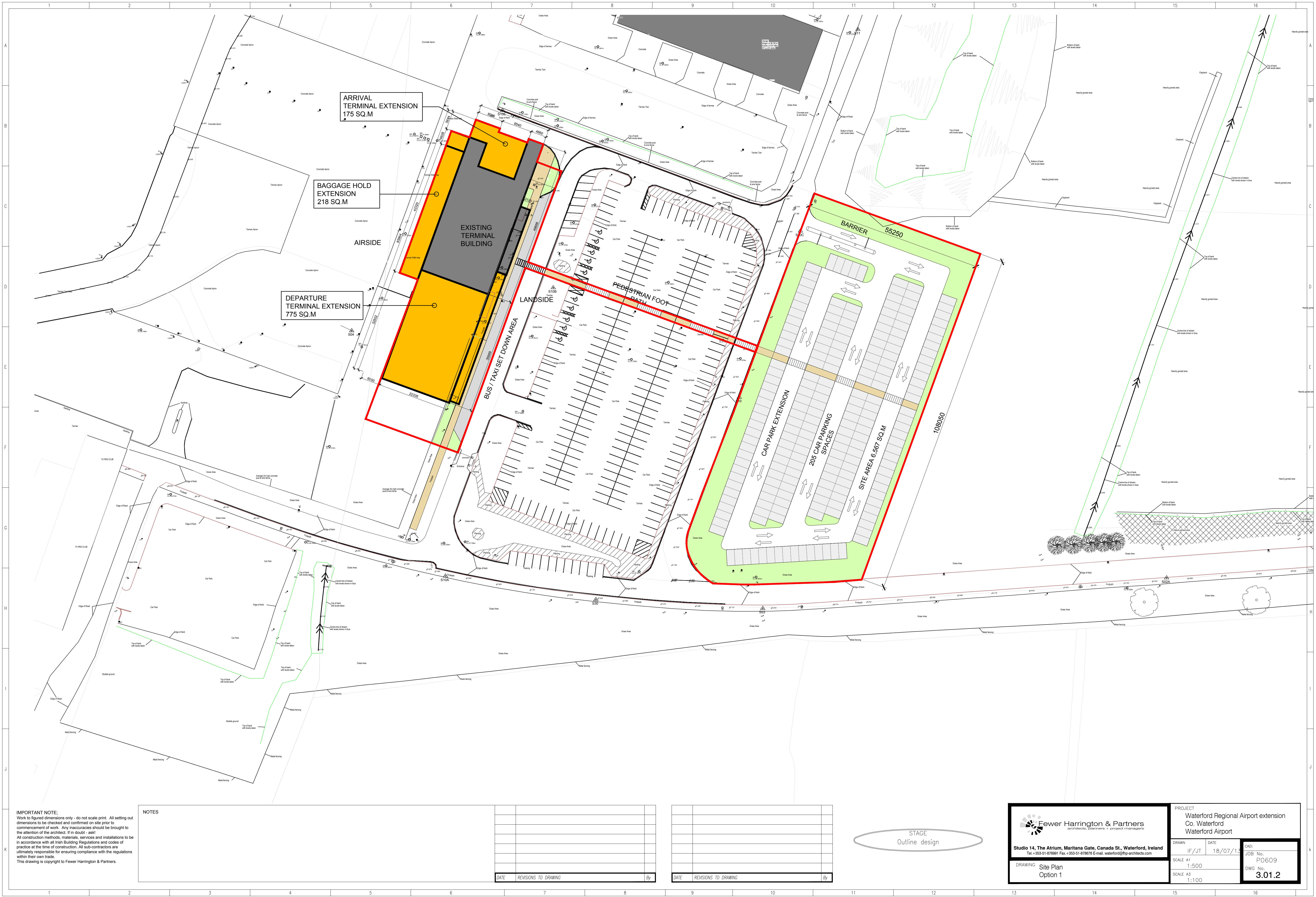
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<sup>3</sup> West German Water Hazard Class – Wassergefährdungsklasse Class 1 = 'low hazard to waters'

<sup>4</sup> The Blue Angel is the ecolabel of the federal government of Germany since 1978. The Blue Angel sets high standards for environmentally friendly product design and has proven itself over the past 40 years as a reliable guide for a more sustainable consumption.







**IMPORTANT NOTE:**  
Work to figured dimensions only - do not scale print. All setting out dimensions to be checked and confirmed on site prior to commencement of work. Any inaccuracies should be brought to the attention of the architect. If in doubt - ask!  
All construction methods, materials, services and installations to be in accordance with all Irish Building Regulations and codes of practice at the time of construction. All sub-contractors are ultimately responsible for ensuring compliance with the regulations within their own trade.  
This drawing is copyright to Fewer Harrington & Partners.

**NOTES**

DATE	REVISIONS TO DRAWING	By

DATE	REVISIONS TO DRAWING	By

STAGE  
Outline design



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architects, engineers, project managers

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PROJECT  
Waterford Regional Airport extension  
Co. Waterford  
Waterford Airport

DRAWN: IF/JT  
SCALE A1: 1:500  
SCALE A3: 1:100

DATE: 18/07/13

CAD: P0609  
JOB No.: 3.01.2

DRAWING  
Site Plan  
Option 1







### 2.4.3 Terminal Building Extension and Wastewater Treatment Plant

While not part of the current planning application, it is intended to extend the terminal building and apply for separate planning permission. The departure area will be reorganised to allow for a large security clearance, duty free, café, W/C and departure lounge areas. The departure area will be increased by ca. 775sqm and can seat up to 180 people and has 3 gates. The arrival hall will also be increased in size and has been reconfigured to allow for more space for baggage collection, W/C and queuing for customs and immigration. The arrival area will increase by ca. 175sqm. An extension to the baggage holding area of approximately 220sqm will be located on the airside elevation of the terminal building. On the ground floor a second entrance will be introduced next to the arrival area to avoid cross over from departing and arriving passengers and the check-in counters will be moved back to create more spaces for queuing. On the first floor a new escape stair is proposed and also an area for storing duty free stock and other items. For the purposes of this EIAR an outline design for the Terminal Building extension has been prepared by Fewer Harrington Partners, Architects.

The existing terminal has a wastewater treatment plant which was installed contemporaneously with the building during the 1990's. With the change in passenger movements anticipated with the extension of the runways it is considered that an upgrade to the wastewater treatment system may be necessary. An additional load and assimilative capacity study will be carried out to determine the level of treatment required. This will be associated with the upgrade of the terminal building and dependent on volume and patterns of passengers.

## 2.5 Project Construction

The construction phase for the Waterford Airport Runway extension is estimated to last approximately eight to nine months. Construction movements are expected to access the site from the existing public access road at the R708. Three additional temporary construction access points will be used where appropriate. The first is located at the south of the site along the R685. The second construction access point is located north of the existing airport entrance on the R708. The third access point is located at the north of the site on the R708 which will provide access to the navigational lighting for the northern section of the runway.

Holding areas will be established at these access points designated as landside where contractors can move freely without tower control direction. Access to airside lands will be controlled by airport staff in liaison with tower control. Materials and machinery will approach the site on the haul routes of the R708 where the access point to the site is located. The R685 will also be utilised to the south of the site which connects the airport to Tramore and Dunmore East.

Construction access will accommodate the importation of fill material for the runway and carpark construction. Three temporary compounds will be set up to accommodate the construction works. These compounds will be located landside. The main construction compound will be adjacent (to the south of) the terminal building. The second and third compounds will be located at the north and south of the site as indicated in the accompanying planning drawings. The northern compound will be accessed from the R708 on an existing track. This track will be upgraded and surfaced with geotextile and imported stone. The compound will be surfaced with similar material. The southern compound will be accessed from the R685 haulage route. Similarly, the existing access track to this compound will be upgraded and the surface of both the compound and access track will be surfaced in geotextile and imported stone.



Navigation lights will be installed along the centreline of the runway beyond the landing thresholds of the proposed runway extension and will extend ca. 765m to the north of the runway and ca. 145m to the south of the runway. Installation of the navigation lights will require trenching and the laying of ducts to carry electrical cables from the existing approach lights to the proposed navigation light locations. This will involve the installation of ducting in the public road to carry the cabling across both the R708 to the north and the R685 to the south. The lights will be mounted on precast concrete plinths which will be set into the ground. The lights located outside of the airport compound will be surrounded by wooden fencing.

Drains around the hard-standing areas of the site compounds will be in the form of shallow grassed swales to minimise the disturbance to sub-soils. The swales will drain to temporary stilling ponds with diffuse outfalls, to ensure that silt-laden runoff does not drain directly from the temporary compounds during the construction period. The stilling ponds will be backfilled following the construction period and the vacation of the temporary site compounds.

There will be no requirement for construction traffic to park on public roads, therefore public traffic movements will not be disrupted. Temporary road closures are not expected and there are no proposals for the operation of contra flow systems on public roads. Any such proposals will be agreed upon with the Local Authority prior to operation. The contractor will submit a Construction Traffic Management Plan to the Local Authority for approval prior to works. Haulage vehicle movements will be fully coordinated to comply with the requirements of the layout and requirements set out within the Construction Traffic Management Plan.

The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations shall generally be restricted to between 07:00 hours and 19:00 hours Monday to Saturday. However, to ensure that optimal use is made of fair weather windows, or at critical periods within the programme, it could occasionally be necessary to work outside of these hours. Any such out of hours working would be agreed in advance with the planning authority.

### 2.5.1 Enabling Works

Initial site preparatory works will be undertaken to establish and delineate each of the work sites, both airside and landside. This will include the erection of temporary safety fencing, signage and markers, secure waste management facilities, equipment stores and mobile lighting to illuminate the work sites.

Landside construction compounds will be established to service all airport related construction works. They will be located adjacent to the terminal building and at the northern and southern access points. Concrete will be batched within these compounds and transported airside for the construction works, through a control point. The contractor will be required to identify those areas to be used for temporary stockpiling of construction materials and waste, which will be kept at a low height and security covered or dampened to prevent migration of dust.

Other key activities to be undertaken during the site preparatory phase include the identification and diversion, and/or relocation, of all existing services and utility infrastructure located near the work sites, as well as the installation of temporary environmental management controls (i.e. erosion and sediment control devices). Furthermore, the contractor will be required to excavate trenches and install new underground drainage infrastructure, and electrical and fibre optic cables for the new airfield ground lighting systems.





### 2.5.2 Main Construction Works

The main airside construction works will involve the breaking of redundant areas of concrete and soft stripping of airfield grass and soil; followed by the excavation and construction of new runway areas and associated lighting pits, cable trenches and surface drainage collection systems.

An excavator will be used to dig trenches for the installation of ducting which will carry the electrical cables for the associated airfield lighting. Holes will be dug for the concrete plinths which will hold the lights in place. An electrical contractor will set the plinths, install the wiring and light fittings. Lighting works located outside of the airport compound to the north and south of the runway will be accessed through existing agricultural entrances. These entrances will be maintained for any future maintenance work. Ducting to be installed in the public road will require road safety measures during the works and will be conducted in consultation with Waterford City and County Council.

While soil is exposed, the contractor and the airport staff will employ wildlife control and management techniques to ensure birds and other species are not attracted to or congregate on the excavated ground or temporary spoil heaps.

At the end of each construction shift, the contractor (in conjunction with airport operations) will be required to check that all work areas are free of all material, mud and debris which could be blown onto the existing runway or other aircraft movement areas (i.e. taxiways and aprons). If necessary, the contractor will install screens and other appropriate measures to prevent the dispersal of foreign object debris on the airfield pavement areas, which will be regularly checked by the Airfield Operations Team.

Landside construction works will include the removal of spoil heaps and the clearing of scrubland areas to make way for excavation and construction of the new car parking area which will include 205 spaces, entrance and exit barriers, a pedestrian walkway, lighting and grass verges.

### 2.5.3 Finishing Works

The final phase of the works will involve the application of new pavement markings on the aprons, taxiway and runway, the installation of new airfield signage, testing of guidance lights and related services. The fit-out of the terminal building extension and preparation of the new car parking area will be completed in this final stage. Once the operational readiness has been completed, the contractor will proceed with the final general site clean-up and remove all construction plant, equipment and materials, in agreement with the Waterford Airport Operations Team.

All new airside apron, taxiway and runway markings, signage and lighting will be consistent with IAA and EASA standards.

Areas excavated for the installation of ducting associated with the navigation lights will be repaired and grass replanted following the works, agricultural uses can continue outside the fenced areas.



#### 2.5.4 Airport Terminal Extension

The terminal extension works will comprise enabling works on the current terminal building, laying foundations and construction of extension areas. Works will comprise standard construction methods and involve import of building materials including concrete, steel structural components and building fabric. All required construction access will use the existing airport access road from the R708. The main site compound adjacent to the airport terminal will be used for storage and site management. It is anticipated that the terminal extension works will occur after the runway works are completed.

#### 2.5.5 Demolition Works

Licensing requirements for the operation of the fully extended runway will require the demolition of two houses to the north of the proposed runway extension. The dwellings are subject to Compulsory Purchase Order under An Bord Pleanála reference PL93 .306324.

#### 2.5.6 Construction Plant/Equipment

It is anticipated that the following types of construction plant/equipment will be employed on site:

- Excavator/scrapers for excavation of areas for new concrete pavement and runway, to break out areas of redundant pavement and to dig trenches for installation of ducting;
- Asphalt pavers/rollers for the spreading and compacting of materials on new areas of pavement;
- Water pumps to facilitate the undertaking of excavation and construction works;
- Coring rigs to test the new pavement areas;
- Sweepers to prepare the newly paved areas for operational use and to gather any dust generated by excavation works;
- Groovers to prepare the newly paved areas for operational use;
- Rock saws/pneumatic drills for the breaking out of existing areas of redundant concrete;
- A concrete batching plant to be set up within the site construction compound; and
- Crane and scaffolding for the construction of the terminal extension.

#### 2.5.7 Waste Management

Spoil generated by excavation works for the proposed runway and associated works is not expected to be contaminated, so it is proposed that the topsoil will be reused for landscaping or soil bunds at the airport, and other spoil will be used for the infilling of trench excavations. If additional soil cannot be utilised at the airport, contractors will identify a suitable 'host site' for this material to be stored for use elsewhere.

Other wastes from construction activities are likely to include the following:

- General waste;
- Building materials;
- Packaging wastes;
- Hazardous waste;
- Liquid waste;
- Paint waste; and
- Electrical waste.



Where practicable, all pavement and concrete arisings (from the breaking out of existing hardstanding in the work areas) will be re-used on-site for construction purposes. Materials which cannot be re-used on site will be recycled or disposed of via a licensed waste management contractor to a suitably licensed facility in accordance with waste management acts.

#### 2.5.8 Potential Construction Effects

Construction environmental effects (e.g. noise, traffic, dust etc.) are temporary in nature, although the future physical existence of the new airfield infrastructure is permanent once the works are completed.

As such, the associated ‘operational effects’ of the new airfield infrastructure, including the drainage requirements and appraisal of ground noise due to the movement and positioning of aircraft on take-off and landing, are considered in subsequent chapters of this EIAR.

The construction details and assumptions described above have been used to determine the potential construction environmental effects. Topic-specific assessments have been carried out and are presented in the relevant chapters of this EIAR in relation to:

- Traffic and Transport;
- Soils and Geology;
- Noise;
- Population and Human health;
- Hydrology and Water Quality;
- Biodiversity;
- Landscape and Visuals;
- Air Quality and Climate; and
- Archaeology and Cultural Heritage.

An outline construction and environmental management plan has been prepared by Frank Fox and Associates and accompanies this submission.

## 2.6 **Operation and Lifespan**

Operations of the proposed development is set out in section 2.1.2. It is expected that commercial aircraft activity will reach up to 345,000 passengers per annum by year five of operations according to passenger growth projections. Current operations at the airport will continue as projected in Table 2-2, consisting of non-schedule flights such as business jets, flight training, multi and single-engine general aviation and helicopter operations. Operations at the airport are planned to continue for the foreseeable future in order to develop Waterford Airport as a driver for economic activity in the South-Eastern Region. The proposed infrastructure will facilitate the projected growth in passenger numbers.

## 2.7 **Decommissioning**

Decommissioning of the airport facilities as part of the proposed development is not expected to occur in the foreseeable future.



## 2.8 Natural Disasters & Major Accidents

The amended EIA Directive 2014/52/EU identifies the important role that the EIA process can play in assessing climate change impacts and risks. It states that EIAs shall identify, describe and assess the direct and indirect significant effects of climate, and the risk of major accidents and/or natural disasters that are relevant to the project, including those caused by climate change.

As with airports, Waterford Airport adopts all possible precautionary measures to ensure the safety of construction and operations. The airfield is governed by a safety regime set out by the Irish Aviation Authority in line with requirements of the European Aviation Safety Agency (EASA). The construction designs for the runway, taxiway and apron areas will be completed by Leading Edge Aviation Planning Professionals (LEAPP), a global aviation planning and management consulting company. The design of the proposed works must meet the approval of the Irish Aviation Authority, and the associated works must be certified by the appropriate authority prior to operational use.

As outlined in Chapter 10: Air Quality & Climate, the likely overall magnitude of the changes on climate in the operational stage of the proposed development is negligible and long-term.

As detailed in Chapter 7: Hydrology & Water Quality, small areas of pluvial flooding were identified outside of the development area, however, no significant flooding is likely to occur at the site.

### 2.8.1 Construction Phase

Some construction work will take place while the runway is in operational use. However, strict operational controls will be imposed to ensure safe working practices and to avoid incursion of construction plant, vehicles and personnel into live aircraft manoeuvring areas. These will follow well established and robust control and management protocols.

The Obstacle Limitation Surfaces in place at the airport will not be breached at any time during the construction phase, with exception to times where temporary cessation of flights occur and in line with Irish Aviation Authority requirements. In addition, it is not proposed to use cranes within proximity to aircraft manoeuvring zones during the construction phase and will therefore not affect obstacle limitation surfaces. Thus, risk of an accident occurring as a result of the construction activity is tightly controlled. In addition, commercial flights will not be operational during the construction phase, therefore, Waterford Airport Operations Team will have full control over aircraft movements during this phase.

### 2.8.2 Operation Phase

With regard to aircraft accident risk, it should be noted that the number of aircraft accidents worldwide is extremely low in comparison to other modes of transport and industrial activities. Public Safety Zones (PSZ's) are areas of land at the end of airport runways within which development is restricted in order to control the number of people on the ground at risk in the event of an aircraft accident. The basic objective of PSZ's is that there should be no increase in the number of people living, working or congregating in airport PSZ's and that over time that number should be reduced.



Emergency procedures at Waterford Airport are guided by its Emergency Plan which complies with IAA and EASA requirements and is validated by the IAA licencing. This outlines safety actions to be undertaken for aircraft and ground incidents, including security threats. The document is a protected document and controlled for use by the Regulator and Emergency Services.

Waterford Airport confirm that existing bird control measures are in place at the airport to mitigate the risk of bird strike hazard. These measures are accepted by the Regulatory Authority.

The airfield lighting installed as part of the proposed project will conform to IAA, EASA and other international aviation standards which dictate the location, heights, brightness, type and pattern of lights around the aerodrome. There is no likely risk of this lighting distracting or confusing pilots.

With regard to other potential major accidents and/or disasters, like all modern airports Waterford Airport operates to very stringent standards of safety and security in accordance with Irish and European regulations.

The airport suffers no exceptional climatic conditions that would regularly affect its operations (e.g. extended periods of fog or high winds) and it currently offers an exceptional level of resilience during adverse weather conditions. Two dwellings will be demolished to maintain runway safety as part of the proposed works. An assessment of the Obstruction Limit Surface will be undertaken in the course of licencing requirements for the IAA.

In conclusion, the risk of ‘major accidents and/or disasters’ occurring at the airport in the construction and operational phases of the project is negligible subject to achievement of required safety standards and licencing from the Irish Aviation Authority.



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