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Environmental Impact Assessment Report
Development at Waterford Airport

Volume 2 – Chapter 8 – Traffic and Transportation

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

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8. TRAFFIC AND TRANSPORTATION

8.1 Introduction

This chapter describes the existing road network and the potential impact of the proposed development during construction and during its operating life.

This chapter examines the existing roads, traffic and transportation system in the vicinity of the runway extension development. The existing road network environment is examined as well as an outline of the proposed development. Potential impacts associated with the construction and operation of the development, in relation to traffic and transportation are examined and assessed. Mitigation measures are then discussed followed by an assessment of residual impacts and potential cumulative impacts from neighbouring developments.

The purpose of this assessment is to provide information that can be used to ensure safety of workers and the public, avoid damage to existing property and public infrastructure, minimise disruption and avoid traffic hazards within the surrounding road network.

8.2 Methodology

The existing traffic situation is described in this chapter, as well as estimates of the volumes of traffic which will be generated by the proposed development during its construction and operation. The likely traffic distribution onto the local road network is assessed and proposals are made to mitigate the impact of the projected increase in traffic on the road network.

This assessment has been undertaken using a combination of desktop studies, field surveys, traffic counts and consultation with statutory agencies and local authority representatives in line with current best practice and policy advice. The assessment looks at the runway extension development, the associated anticipated haul route for materials and increase in operational traffic of the airport.

The following guidance has been used to inform this chapter:

- Traffic and Transport Assessment Guidelines – May 2014, National Roads Authority;
- DN-GEO-03060: Geometric Design of Junctions, TII, June 2017; DN-GEO-03031: Rural Road Link Design, TII, June 2017;
- Guidelines on the Information to be contained in Environmental Impact Statements, EPA, 2002.
- Traffic and Transport Assessment Guidelines, National Roads Authority, May 2014;
- Waterford County Development Plan, Waterford County Council, 2011-2017;
- Design Manual for Urban Roads and Streets (DMURS), Department of Transport, Tourism and Sport (DTTAS), March 2013;
- Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, Environmental Protection Agency (EPA), August 2017;
- DN-GEO-03060: Geometric Design of Junctions, Transport Infrastructure Ireland (TII), June 2017;
- DN-GEO-03031: Rural Road Link Design, TII, June 2017.

8.3 Existing Environment

Roads in the Republic of Ireland are classified as motorways, national (primary and secondary), regional and local roads. Transport Infrastructure Ireland (TII) has overall responsibility for the planning and supervision of the construction and maintenance of motorways, national primary and secondary roads. The local authorities have responsibility for all non-national roads. The hierarchy of roads throughout Ireland is outlined in Table 8.1.

Table 8-1: Road Categories

Road Category	Description
Motorways	These are high quality multiple lane roads with limited grade separated junctions. They are high speed (120km/h) road predominantly provided to facilitate strategic traffic with reduced journey times.
National Primary Roads	These are predominantly single carriageway, with some that are dual carriageway. Generally high speed (100km/h) roads that facilitate strategic traffic, with reduced journey times.
National Secondary Roads	These are medium distance through-routes connecting towns, serving medium to large geographical areas and link to primary routes to form a homogeneous arterial network.
Regional Roads	Predominantly single carriageway roads of regional and local importance. These roads generally receive more frequent maintenance criteria than Local Roads and therefore tend to be structurally sound.
Local Roads (Primary, Secondary and Tertiary)	The local road system is operated in three tiers defining local importance, usage and maintenance priorities. They form a network of single carriageway roads of varying quality.

Vehicular access to the proposed development has been assessed from the N25 National Road which is located approximately 13km to the north of the proposed main site entrance at Ballygarran, Co. Waterford.

8.3.1 Motorways

There are no motorways in the vicinity of the proposed development. The nearest motorway is the M9 which is located approximately 18km to the north of the site. The M9 connects Waterford City to Dublin, via Kilkenny.

8.3.2 National Roads

The N25 National Road is located approximately 13km to the north west of the main site entrance at Waterford Airport. The N25 connects Cork with Rosslare and travels along the south coast of Ireland.

The N24 is approximately 18km to the north and connects Waterford City with the M8 at Cahir. This road travels through Carrick-on-Suir and Clonmel.

8.3.3 Regional Roads

The R708 is located at the entrance to the development, this road runs from Waterford City to the R685 at Cloghernagh.

The R685 travels to the south of the development and connects Tramore, which is 9km to the southwest with Gaultier approximately 5km to the southeast of the main entrance.

The R675 runs to the west of the site and connects Tramore with Waterford City and runs in a north-south direction.

The R710, approximately 12km north is the Waterford City outer ring road which travels around the southern suburbs of Waterford City. This regional road is dual carriageway and connects the N25 to the northwest of the city to the R683 to the southeast of the city, without having to travel into the city.

The above regional roads form a ring around the wider area surrounding the site between Waterford City to the north, and Tramore to the south and west of the development.

8.3.4 Local Roads

There is a good network of local or county roads around the site connecting the regional roads in the area. The site has an unnamed local road traveling in a north-south direction immediately west of the site. This local road connects the local road to the north (Monamintra) to the R685 to the south.

To the north there is a local road (Monamintra) connecting Killure Cross with the main road from Tramore to Waterford (the R675) to the west.

To the east of the R708, there is a local road which connects Williamstown in the city suburbs to Clohernagh to the south east of Waterford Airport.

Access to the airport is not facilitated by local roads as the regional and national roads provide access from all major towns in the region.

8.4 Site Access

A survey of the access points was carried out by FTC engineers on the 25 June 2018. Existing sightlines were assessed in accordance with TII design standard DN-GEO-03060 as well as an assessment of the existing drainage, road conditions and geometry at each location.

Required sightlines for new access to regional roads are listed in the Waterford County Development Plan. Entrance sightlines are also required to be designed and constructed in accordance with the TII guidelines *TII Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions) DN-GEO-03060*.

The R708 regional road, at the location of the airport entrance, has a speed limit of 80kph and is approximately 12m wide. Therefore, to comply with the guidelines and standards listed above, a sightline distance of 160m is required in both directions (see Table 8-2 below).

Table 8-2 : Sight Lines Achieved at Site Entrance (Airport Entrance)

Set Back Distance	Required Sight Distance TII (Left & Right)	Achieved Sight Distance Left	Achieved Sight Distance Right
x=0	-	785m	348m
X=2	-	782m	355m
x=3	160m	778m	350m

The Waterford County Development Plan has the minimum sightline requirements for a speed limit of 80kph of 160m in both directions.

The TII guidelines has a desirable design setback of 3m (x=3), with a minimum design setback for *Regional and Local Roads for Access and Light Traffic* of 2m (x=2).

The minimum sightlines of 160m are provided with a 3m setback and photos from the access point can be seen in Plate 8-1 to 8-4.

The existing site accesses is well located to provide adequate visibility in both directions for both construction traffic and existing road users and requires no upgrades or improvements. A right turning lane on the R708 is provided for any right turning traffic into the airport coming from the north.

A photographic record of the airport entrance is presented in the series of plates below.

Plate 8-1: View South at Airport Entrance

Plate 8-2: View North at Airport Entrance

Plate 8-3: Right turning lane to Airport

Plate 8-4: Airport Entrance

The proposed transport route identified for the project is shown on Figure 8.1 and is described as follows:

All construction traffic approaching the site shall do so from the R708. Construction traffic shall approach the R685 from the north via the R708.

Traffic coming from the north would join the R708 at the Airport Road roundabout, this would provide approach from the outer ring road dual carriageway surrounding Waterford southern suburbs to the R708 in an eastern and western direction. The traffic would then travel south from here, through Monamintra roundabout and directly to site, off the R708.

Three temporary site entrances will be located at three existing road access points, providing access to the north of the runway, the south of the runway and to a section of land north of the R708 where navigation lights will be placed on adjacent lands. The northern temporary access is located on the R708, approximately 380m north of the existing airport entrance. The southern temporary access is located on the R685, south of the runway. The entrance to the proposed navigation lights is located on the R708, north of the runway. A desktop assessment shows that all three entrances achieve 160m sightlines in both directions. The 3 no. temporary site access points are illustrated on Figure 8.1.

Plate 8-5: View South (R708) at Airport Road Roundabout

Plate 8-6: View East at Airport Road Roundabout

Plate 8-7: View West at Airport Road Roundabout

Plate 8-8: View North at Airport Road Roundabout

Plate 8-9: View North at Monamintra Roundabout

Plate 8-10: View South at Monamintra Roundabout

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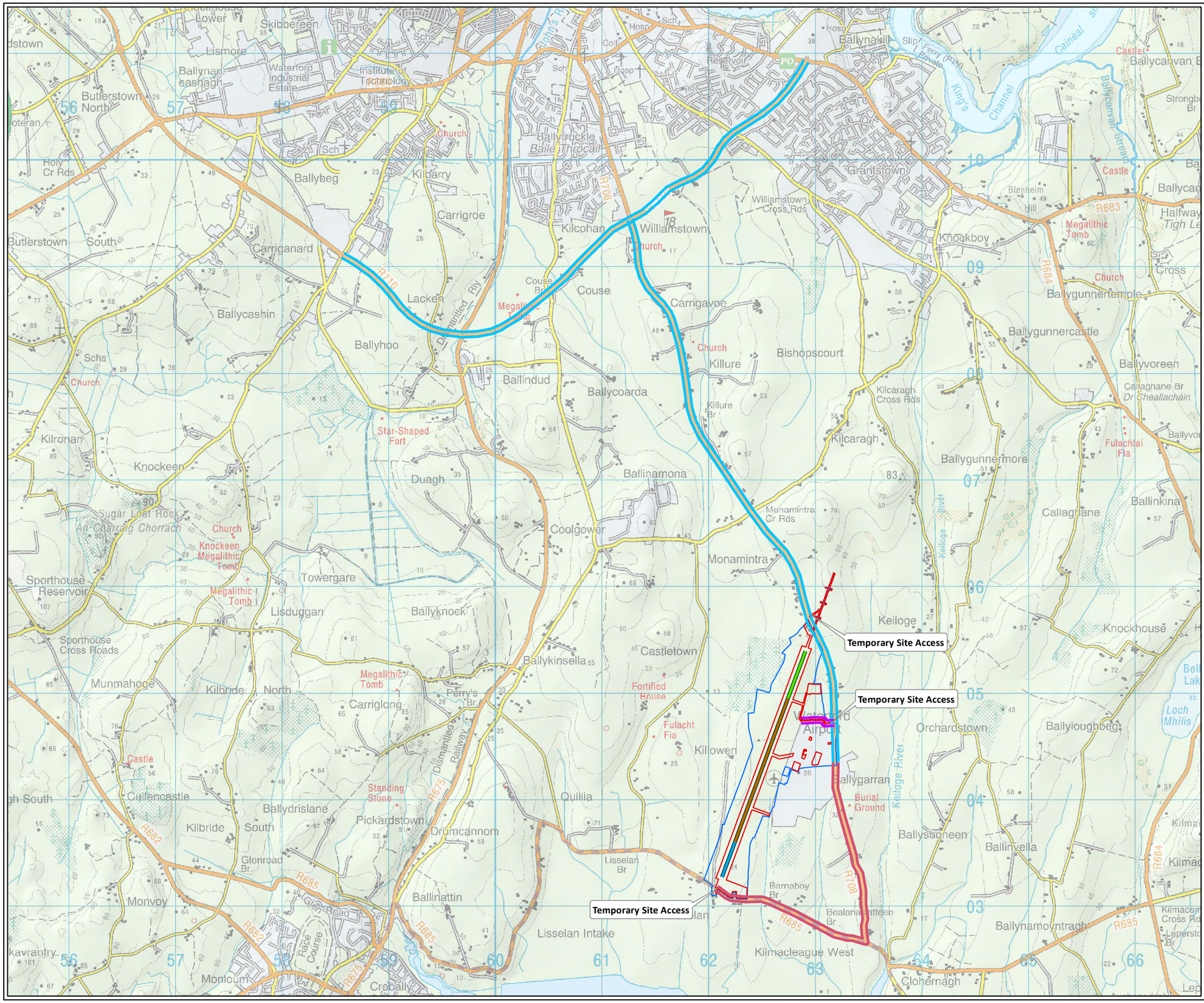

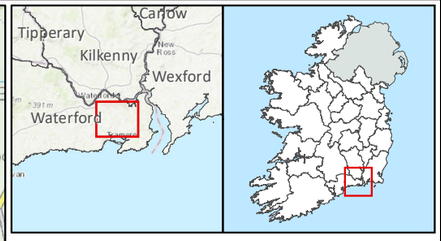

- Proposed Haul Route
- Proposed Haul Route (North Only)
- Proposed Haul Route (South Only)
- Site Boundary
- Land under SERA (South East Regional Airport) and Waterford City and Council Ownership
- Existing Runway
- Permitted South Extension
- Proposed North Extension

TITLE:	Proposed Haul Route		
PROJECT:	Waterford Airport Runway Extension		
FIGURE NO:	8.1		
CLIENT:	Waterford Airport		
SCALE:	1:35000	**REVISION:**	0
DATE:	27/05/2020	**PAGE SIZE:**	A3

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8.5 Existing Traffic Conditions

As part of the study for this traffic and transport section, Nationwide Data Collection installed automatic traffic counters at the Waterford Airport entrance. These were placed in two locations as follows:

- Access Road to Waterford Airport
- R708, north of Waterford Airport entrance

METROCOUNT 5600 series automatic traffic counters were installed and left in place between 14 June 2018 and 21 June 2018 recording continuously 24hours per day. Data was collected in both directions at all locations.

Location	Day	Vehicles		
		AM Peak	PM Peak	Daily
Access Road to Airport	Weekday	29	30	185
	Weekend	11	18	131
R708	Weekday	294	299	2,760
	Weekend	194	190	1,839

The average annual daily traffic (AADT) for the R708 is 2,497 and the AADT for the airport approach road is 152, from the traffic count data.

8.6 Expected Future Conditions

The proposed development is expected to begin operation in 2021, subject to planning permission. For the purposes of this analysis, it is expected that the construction of the runway extension will commence in 2020.

8.7 Construction and Operational Phase Traffic Movements

8.7.1 Construction Phase

The delivery routes have been reviewed and inspected on site and are considered suitable to accommodate delivery vehicles in terms of alignment, condition and width. The equipment for the site, fencing and site offices etc., will be delivered to site via HGVs. These will be similar in size and nature to those which already use this local road network for the purposes of agricultural deliveries to local farms and deliveries to the airport business park. Therefore, it is not anticipated that any works will be required on the local road network for the purposes of facilitating delivery.

The construction phase for the proposed development will result in additional traffic on the roads in the vicinity of the development, in particular the R708 and internal airport roads as shown in Figure 8-1. This additional traffic will include the following:

- Heavy Goods Vehicles (HGVs) transporting materials to and from the site, including road making materials, concrete, stone, building materials, drainage/ducting materials, cabling, and excavated material;
- HGVs transporting conventional earthworks machinery such as excavators, dumper trucks, rollers etc.;
- HGVs transporting plant such as planers, dumpers, tarring machines, graders;
- Fuel trucks transporting fuel (for plant) to each site compound during the works;

- Light goods vehicles (LGVs) such as cars, 4x4s and vans used by the workers and supervisory staff involved in the construction works.

As described in Chapter 2, it is estimated that construction period will last between 8 to 9 months. The development will be divided into a number of phases coinciding with the programme in Figure 8-2 below, for the purposes of construction programming. Construction is to be phased across the main activities underway during a given period and to minimise the level of impact of the construction on the local road network and residents.

The main site office and management team will be located at the temporary site compound and all site staff and deliveries will be required to sign in here before moving to other areas of the site. The main project welfare facilities will be located in the site compound, which is to be located south of the airport terminal building. Adequate storage space and parking facilities for site staff will be provided within each of the temporary construction compounds. Temporary compound areas will be placed at the north and south ends of the runway where temporary access can be gained to both sites. Access can be gained to these via R708 and R685 as described above.

It is expected that construction works will commence simultaneously with two civils crews commencing the development on both ends of the runway at the same time, starting with earthworks and ground preparation and drainage infrastructure. The proposed sequence of construction can be seen in the construction programme shown in Figure 8-2 below.

Frank Fox & Associates

218034 **Waterford Airport. Runway Extension. 2020**

Project Program	September	October	November	December	January	February	March	April
Site Setup & Temporary Fencing								
Excavation and Site Regrading								
Strengthening of Existing Pavement for Widening								
Ground Improvement								
Drainage								
Widening of Taxiway								
Pavement Stone Formation								
Strengthening of Existing Concrete Apron								
Prepare and Regrade Transition								
Car Park and Attenuation								
Blacktop Asphalt Surface								
Upgrade Treatment System								
Extension of Terminal Building								
Install Pavement Lighting								
Pavement Grooving								
Pavement Markings								

Figure 8-2: Construction Programme

It is estimated that construction phase will lead to approximately 4,752 additional HGV trips (two-way) over the full duration of the construction period. This equates to an average increase in HGV traffic of 20 daily trips (ADT) over the course of the construction phase. During the peak construction period for HGV traffic, this is expected to rise to 56 ADT.

With respect to site staff, an average workforce of 20 persons is anticipated. This is estimated to give rise to an average increase in LGV traffic of 22 trips per working day. The combined HGV and LGV average daily increase is 42 trips per day over the course of the construction period.

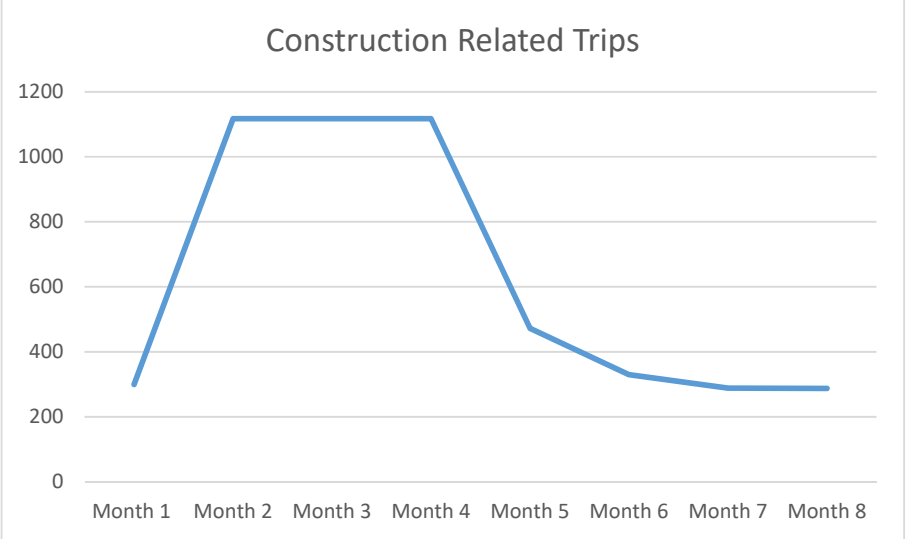

Figure 8-3: Monthly Construction Related Trips

As has become standard practice, the contractor will prepare a site-specific Traffic Management Plan (TMP) prior to the construction works commencing. The contractor will be responsible for the implementation of all agreements between the developer and Waterford County Council with the objective that the transportation needs for the proposed development will have a minimal impact on the road network and local communities. All vehicles hauling materials to and from the site shall only use agreed transport routes shown in Figure 8-1.

Public roads shall be kept free of mud, dust, spillages and debris from the construction site, construction plant or haulage vehicles. Any necessary measures shall be put in place at the site entry/exit points including re-grading and installation of drainage infrastructure to ensure no additional surface water may reach the public road from the site access tracks.

Table 8-3: Predicted AADT Volumes with Peak Construction Phase Traffic

Road	AADT (2020)	Predicted ADT During Construction Phase (peak)	Increase %	Predicted ADT During Construction Phase (Average)	Increase %
R708 Regional Road	2,550	2,628	3.1%	2,592	1.65%

The site access will include for a temporary construction access point to the north end of the runway, which will be accommodated from the R708 and is indicated in the figure 8.1. A number of construction deliveries will travel south passing the entrance to the airport and accessing the site from the temporary site access on the R685 located at the south of the runway.

The worst-case increase in construction traffic at the R685 would allow for all deliveries to the south extension taking place through the entrance off the R685. The impact for this worst-case scenario would be as follows. Note: this would be for a three-month period.

Table 8-4: Predicted AADT Volumes with Peak Construction Phase Traffic

Road	AADT (2020)	Predicted ADT Increase During Construction Phase	Increase %
R685[1]	1,095	1,112	1.8%

With the implementation of adequate mitigation measures as part of a well-designed construction stage TMP, the estimated level of traffic generated is not considered to exceed the local road network capacity or to give rise to local traffic obstruction either at the site entrances or on approach roads.

Access from public roads is considered safe and suitable for the proposed traffic movement and no public safety issues or obstruction to traffic flow is anticipated.

Some key assumptions taken when preparing the trip generation estimates include:

- Construction stage traffic generation has been estimated based on the preliminary 35 to 40-week project schedule prepared by Frank Fox Associates. It is possible that the final construction programme could extend beyond this period, however, for the purposes of assessing worst case for construction stage traffic, a compressed programme would result in higher additional average daily trips on the road network, and therefore represent a 'worst case' in terms of traffic related impacts;
- Material deliveries have been estimated using the road make-up for the runway extension provided by Frank Fox Associated
- Car park make up has been assumed to have a 200mm Cl 804 on 90mm base course with two wearing courses of 60mm and 40mm respectively.
- Terminal building extensions have been estimated as having 30 HGV deliveries and 540 LGV trips over its construction period.
- Internal site traffic movements have not been included in traffic generation relating to the public roads.

8.7.2 Operational Phase

As part of the analysis of the operational traffic to Waterford Airport, a breakdown of transport modes was required. The National Transport Authority conducted an in-depth study of airport traffic in 2016 and produced the NTA Passenger Transport Surveys at Dublin, Cork and Shannon Airports 2016, November 2017 document. This was considered as part of the likely breakdown of access modes to and from the airport.

[1] Traffic data taken from R685/R675 Junction provided by Waterford Regional Airport

The study identified modes of transport to the airport for both residents and visitors in each of the three airports and the totals were combined for each. As Dublin Airport is considerably larger than Waterford and due to much higher availability of public transport, Dublin Airport has not been considered comparable for this study. The results for Cork and Shannon are more representative of a regional airport such as Waterford and the survey results from Cork and Shannon have been combined to produce a breakdown for use in the modal split/transport method to Waterford Airport.

Table 8-5: Modes of Transport to Airport

	Shannon	Cork	Average
Mode	**%**	**%**	**%**
Bus/Coach	13	13	13
Taxi	8	19	13.5
Passenger in Car	34	32	33
Drove Own Car	20	18	19
Rental Car	20	13	16.5
Hotel Bus	0	3	1.5
Motorcycle	0	0	0
Bicycle	0	0	0
On Foot	2	1	1.5
Other	4	1	2.5

The projected passenger figures have been provided by Waterford Airport and can be seen in Table 8-6 below.

Table 8-6: Predicted Passenger Numbers

Base Year	Year 1	Year 2	Year 3	Year 4	Year 5
Plane Type	Boeing 737	Boeing 737	Boeing 737	Boeing 737	Boeing 737
Flights in / Year	297	529	769	973	1,120
Passengers In	46,000	81,500	119,000	150,000	172,500
Passengers Out	46,000	81,500	119,000	150,000	172,500
Total	**92,000**	**163,000**	**238,000**	**300,000**	**345,000**
Month	7,667	8,667	11,583	15,250	20,167
Week	1,769	2,000	2,673	3,519	4,654
Day	253	448	654	824	948

Historically, the highest passenger numbers achieved at Waterford Airport was 144,000 per annum (historical figures provided by Waterford Airport). This was achieved using smaller turbo prop planes and existing airport infrastructure.

The following breakdown shows the modes of transport which would be expected from the projected passenger numbers for each of the first five years.

Table 8-7: Predicted Passenger Number Transport

Mode	%	Year 1	Year 2	Year 3	Year 4	Year 5
Bus/Coach	13	33	58	85	107	123
Taxi	13.5	34	60	88	111	128
Passenger in car	33	83	149	216	272	313
Drove own car	19	48	85	124	157	180
Rental car	16.5	42	74	108	136	156
Hotel Bus	1.5	4	7	10	12	14
Motorcycle	0	0	0	0	0	0
Bicycle	0	0	0	0	0	0
On Foot	1	3	4	7	8	10
Other	2.5	6	11	16	21	24
Passengers per day		253	448	654	824	948

In line with the projected passenger numbers for Waterford Airport, the maximum capacity figure has been projected for year 5 and will be maintained going forward.

The increase in trips associated with the proposed airport operations are as follows. These figures discount trips defined as 'on foot' and trips defined as 'other'.

Table 8-8: Trip Generation for the Airport Development

Road	AADT (2020)	Opening Year (2021)	Opening Year + 5 Years	Opening Year +15 Years
R708 Regional Road	-	244	914	914

The R708 regional road, which leads to Waterford Airport had a daily traffic count of 2,497 average annual daily traffic (AADT) in 2018. Adjusted for 2020 using TII projections for the south western region, this figure is 2,588. This figure includes projected traffic movements for non-commercial flights at the airport.

Using TII growth factors for the south-east region and projecting the estimated growth on the road with and without the development the predicted increase in traffic can be seen in Table 8-10 and Table 8-11 below. These figures include trips generated by non-commercial flights i.e. the existing operations at the airport.

Table 8-9: Projected Growth on the R708 Without Development (do-nothing scenario)

Road	AADT (2018)	AADT (2020)	Opening Year (2021)	Opening Year + 5 Years	Opening Year +15 Years
R708 Regional Road	2,497	2,588	2,572	2,745	2,898

Table 8-10: Projected Growth on the R708 with the Airport Development

Road	AADT (2020)	Opening Year (2021)	Opening Year + 5 Years	Opening Year +15 Years
R708 Regional Road	2,588	2,816	3,659	3,812
% Capacity increase on the R708 due to the operation of proposed development	0%	9%	33%	32%

In accordance with TII Guidelines *TII DN-GEO-03031 Rural Road Link Design* the regional road R708 would be classified as a Type 2 Single Carriageway, which would have an estimated capacity of 8,600 AADT without the need for any traffic improvement measures. At present this road has significant spare traffic capacity and a worst-case scenario (3,812 AADT), based on the above figures, would suggest that the R708 would continue to have 56% spare capacity with the airport operating to its projected capacity.

8.8 Do Nothing Scenario

The construction of the runway extension will facilitate the increase in flight numbers and passenger numbers through Waterford Airport.

If the proposed runway extension is not constructed, it is likely that the current land uses and existing levels of traffic will continue for the foreseeable future, thereby limiting the potential for business and tourism growth in the area. Therefore, as a result of the "Do Nothing" Scenario, traffic increases on the R708 are likely to remain in line with those projected in table 8-10.

8.9 Potential Impacts – Construction

The construction works will lead to additional construction related traffic on the existing public road network over the duration of the construction works. These impacts will be associated with:

- Heavy Goods Vehicles (HGVs) transporting materials to and from the site compounds, including materials for the construction of drainage infrastructure, pavement construction, temporary hard standings, new structures, particular pavement construction, cabling and drainage;
- HGV's transporting conventional earthworks machinery such as excavators, dumper trucks, rollers etc.;
- Fuel trucks transporting fuel (for plant) to the site compound during the works;
- Light goods vehicles (LGVs) such as cars, 4x4s and vans used by the workers and supervisory staff involved in the construction works;

Without appropriate mitigation measures, the proposed works have the potential to lead to a moderate negative impact on the road network including:

- Delay and disruption to road users, especially on the R708 and R685;
- Road safety issues should the works not be carried out in line with good traffic management practices;
- Inappropriate parking of construction related vehicles near the site;
- Soiling of the public road leading to a general lack of cleanliness and poor skid resistance on roads;

The construction of the following aspects of the proposed development have been identified as the sources of potential risks of moderate impact in terms of traffic and transportation during the construction phase of the development:

- New pavement make-up
- Surfacing of extended pavement on runway
- New drainage
- Cabling/ducting for lighting at or adjacent the extended runway
- Temporary Construction Compound
- New Car Park
- New Terminal Buildings
- Upgrade of Wastewater Treatment Plant

Mitigation measures to minimise the potential impacts identified are described in the following section.

8.10 Potential Impacts – Operation

As outlined in Section 8.7.2 additional traffic is created by the operation of the airport as a result of the proposed project. The amount of traffic equates to an increase in traffic volumes along the R708 of up to 33% from projected traffic figures.

The current capacity of the R708 is much higher than the expected worst-case scenario, if the airport were to run at its projected capacity (345,000 passengers per annum).

It is therefore estimated that the impacts on the road network, while noticeable, would be slight and long-term. Slight is defined as: an effect which causes noticeable changes in the character of the environment but without affecting its sensitivities.

8.11 Cumulative Impacts

8.11.1 Solar farm

A planning application lodged with An Bord Pleanála for a Solar Farm to the north east of the site was granted planning consent (PL93.248487). The solar farm is called Keiloge Solar Farm.

The Environmental Report submitted as part of the application concludes that the additional traffic from the solar farm will be mainly during the construction period (4 months) with additional 16 no trips in and out during the construction period per day. The operational traffic is expected to be one trip per three months.

The worst-case scenario would be the two projects being constructed at the same time but the traffic impact from the solar park is deemed to be negligible (Environmental Report as per PL93.248487) in any case and therefore the cumulative impact of both projects being constructed together should not cause a significant impact on the local road network and would be temporary.

8.12 Mitigation Measures

As has become standard practice, the contractor will prepare a site-specific Traffic Management Plan (TMP) prior to the construction works commencing. The contractor will be responsible for the implementation of all agreements between Waterford Regional Airport and the Local Authority with the objective that the transportation needs for the proposed development will have a minimal impact on the road network and local communities.

All construction traffic approaching the site shall do so from the north via the route identified in Figure 8-1.

Construction traffic shall not be permitted to travel along the R685 to the town of Tramore but must do so by going north from the airport entrance.

Adequate turning space will be provided within each area of the site for the expected vehicles and plant to turn without driving on unpaved lands.

All construction related parking shall be accommodated within the site. Construction related vehicles will not be permitted to park on public roads.

The site access is to be kept in its current condition as it is designed geometrically to TII design specifications set out in DN-GEO-03060 and associated design standards, no signs or obstructions shall be erected within the existing sightlines of the entrance in either direction.

The site entrance shall be maintained to ensure the required minimum visibility is provided in both directions. Hedgerows shall be maintained by the project owner to ensure required visibility throughout the operational phase of the project as part of the scheme's operation and maintenance arrangements.

Traffic movements for the construction of the development will be discussed with local community representatives and where necessary off-peak deliveries will be accommodated.

The mitigation measures for traffic noise and dust are discussed in Chapter 10 and Chapter 11 of this EIAR.

Adequate signage as per Chapter 8 of the Traffic Signs Manual shall be installed on approach to the proposed site entrance locations advising of the presence of a 'site access ahead' and 'construction traffic ahead'. The above signage shall be removed following completion of the construction phase.

The R708 is currently in good condition and has the capacity to facilitate the increased numbers projected by Waterford Airport for operational traffic. Scheduling of flights should take account for impacts on traffic and avoid creating peak periods throughout the day by scheduling numerous flights concentrated into a small timeframe.

8.13 Residual Impacts

The construction of the proposed runway extension will lead to additional construction traffic, including HGV's, during the construction phase. The construction programme will take place over approximately 9 months (40 weeks).

It is expected that the negative impact construction related traffic will have on the local road network will be 'temporary' in duration, and 'slight' to 'moderate' in significance unless properly mitigated against through adequate construction stage planning and the implementation of measures outlined here.

By adopting the mitigation measures proposed above and through the implementation of an adequately designed TMP, it is envisaged that the negative impact construction related traffic will have on the local road network will be 'temporary' in duration, and 'slight' in significance.

The residual impact on the R708 during the increased operation of Waterford Airport is expected to be 'slight' and long-term.

Slight is defined as: "*an effect which causes noticeable changes in the character of the environment but without affecting its sensitivities*".

8.14 References

- Traffic and Transport Assessment Guidelines – May 2014, National Roads Authority;
- DN-GEO-03060: Geometric Design of Junctions, TII, June 2017; DN-GEO-03031: Rural Road Link Design, TII, June 2017;
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- Waterford County Development Plan, Kerry County Council, 2011-2017;
- Design Manual for Urban Roads and Streets (DMURS), Department of Transport, Tourism and Sport (DTTAS), March 2013;
- DN-GEO-03060: Geometric Design of Junctions, Transport Infrastructure Ireland (TII), June 2017;
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