Development at Waterford Airport,

Tramore, Co Waterford

Appropriate Assessment: NIS

Report for Fehily Timoney & Company

June 2020

Roger Goodwillie & Associates, Lavistown House, Kilkenny. Ph/Fax 056-7765145

1. INTRODUCTION

The purpose of this report is to examine the proposal for possible ecological impacts on the Natura 2000 network, in particular the closest candidate SAC and SPA – the Tramore Dunes and Backstrand (Site Codes 0671 & 4027).

The development site is located outside the boundaries of the designations but the application has to have due regard to Article 6 (3) of the EU Habitats Directive which states:

> *Article 6 (3): Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the [Natura 2000] site in view of the [Natura 2000] site's conservation objectives.*

This is transposed into national legislation by Regulation 31 of the European. Communities (Natural Habitats) Regulations 1997.

The report includes both a Stage One Appropriate Assessment screening and a Stage Two Natura Impact Statement as well as a description of the flora and fauna of the site to determine if any ecological connection or parallels exist between the proposed development and any Natura 2000 site. It follows the outline of the NPWS and EU Guidance documents (European Commission 2001, DoEHLG 2009, European Commission 2018).

Site description makes use of botanical information collected in July 2018 and June 2020 as well as ornithological data from BirdWatch Ireland and a special survey by Fehily Timoney on birds flying over and adjacent to the runway and close to Tramore Backstrand (see Biodiversity chapter in EcIA for greater detail).

The report is written by Roger Goodwillie, a full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and qualified in Botany as B.A. (Mod.), M.Sc.

The sources of information used to collect data on the Natura 2000 network of sites include:

- Ordnance Survey of Ireland mapping and aerial photography available from www.osi.ie, Google Earth and Bing aerial photography.
- Online data available on Natura 2000 sites as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie including the Natura 2000 network Data Form; Site Synopsis; Generic Conservation Objective data.

- Online database of rare, threatened and protected species – Publicly accessible biodiversity datasets (National Biodiversity Data Centre, Botanical Society of Britain and Ireland, Moths Ireland).
- Status of EU Protected Habitats in Ireland. (National Parks & Wildlife Service, 2019).

2. DESCRIPTION OF STUDY AREA

This description is amplified by the biodiversity chapter in the EcIA and is meant only as a summary relevant to the AA regulations. The EcIA includes surveys of habitats and flora, invasive species, avifauna (both vantage point and transect surveys), terrestrial mammals and bats.

2.1 Habitats and vegetation

The airport is located mainly on the poorly drained soils that characterise this part of the county and, with the current airport management, create relatively diverse vegetation. In contrast, the northern end of the proposed runway extension occurs on two fields of improved agricultural grassland (GA1 in Fossitt 2000) and affects one hedgerow (WL1) which consists of hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa* with some grey willow *Salix cinerea*, honeysuckle *Lonicera periclymenum* and field rose *Rosa arvensis*. The rest of the runway site is similar to the surroundings further south. This is a mixture of grasses and herbs with seedling willows which are periodically mown down to 20cm or so. It is a mosaic of several habitat types – dry meadows and grassy verges (GS2), dry-humid acid grassland (GS3) and wet grassland (GS4).

Sweet vernal grass *Anthoxanthum odoratum*, red fescue *Festuca rubra*, and bent grasses *Agrostis* sp. are the most frequent grasses and these grow with rushes *Juncus effusus*, *J.conglomeratus* and sedges *Carex panicea* and *C.viridula*. The selection of broad-leaved species includes

Rumex acetosa	sorrel
Centaurea nigra	knapweed
Lotus pedunculatus	greater bird's-foot trefoil
Leontodon saxatile	small hawkbit
Pulicaria dysenterica	fleabane
Lythrum salicaria	purple loosestrife

Prunella vulgaris	self-heal
Mentha aquatica	water mint
Filipendula ulmaria	meadowsweet
Stachys palustris	marsh woundwort

The site for the carpark is lower than the airport buildings and was formerly afforested. The ridges remain in the soil beneath but the original trees either failed or were taken out. They have been replaced by a growth of willows *Salix cinerea* and *S.aurita*, itself cut to the base 8-10 years ago and re-sprouted. A double line of oak *Quercus robur* is found on the western edge while a clump of Monterey cypress *Cupressus macrocarpa* may be seen on the southern side, adjacent to a NNE-SSW drain. The ground is generally covered by brambles *Rubus fruticosus* or ivy *Hedera helix* with a few woodland plants such as violet *Viola riviniana*, tutsan *Hypericum androsaemum*, buckler fern *Dryopteris dilatata*, male fern *D.filix-mas* and hard fern *Blechnum spicant.* A little starved gorse *Ulex europaeus* and other species – marsh thistle *Cirsium palustre*, glaucous sedge *Carex flacca*, heath woodrush *Luzula multiflora* – linger on from a formerly more open phase. There are also a few damp places that flood in winter. These support

Juncus effusus	soft rush
Galium palustre	marsh bedstraw
Filipendula ulmaria	meadowsweet
Scrophularia auriculata	marsh figwort
Lythrum salicaria	purple loosestrife
Angelica sylvestris	wild angelica

Off-site from the NW corner there is a drier hill, probably a relic of former construction. It carries a flowery, diverse community of dog daisy *Leucanthemum vulgare*, cinquefoil *Potentilla reptans*, wild carrot *Daucus carota*, centaury *Centaurium erythraea*, yellow wort *Blackstonia perfoliata* and pale flax *Linum bienne* in red fescue *Festuca rubra*, cocksfoot *Dactylis glomerata* and false oat *Arrhenatherum elatius*.

2.2 Fauna

2.2.1 Mammals

The main large mammal on site is the Irish hare and there was also evidence of fox in the area covered but none of badger. The carpark site supports a low number of rabbits on the drier edges and, presumably, small mammals such as bank vole, pygmy shrew, Irish stoat and hedgehog, all of which have records from the area in the NBDC data.

The feeding quality of the woodland near the terminal building for bats is relatively good in that willows have a rich associated insect fauna and the lines of taller trees offer some shelter. No roosting habitat occurs in the woodland however.

2.2.2 Birds

The avian surveys carried out for the proposed development are based on the methodologies given in the guidance documents *Bird Monitoring Methods – a manual of techniques for key UK species* (Gilbert et al, 1998) and *Recommended bird survey methods to inform impact assessment of onshore wind farms* (Scottish Natural Heritage, 2017). The latter provides methodologies that are also appropriate to assessment of airport developments. The following surveys were carried out:

- Vantage Point Surveys (Breeding and Non-Breeding Season)
- Transects (Breeding Season)
- Hinterland/I-WeBs (Breeding Season)

The two sets of vantage point surveys, in June-August 2018 and February-May 2020, give a good cross-section of the community present. The surveys were 3-6hr vantage point surveys where the observer is far enough away not to disturb the birdlife and covers the birds' natural behaviour over this time. The full methods are described in the EcIA. The surveys established the species using the general area as well as those overflying the runway or airport buildings and are based on a total observation period of 51 hrs.

Table 1. Birds recorded on Vantage Point Surveys between June and September 2018

Species	EU BD[1]	BoCCI[2]	Total Number of Sightings	Season
Blackbird		Green	3	Summer
Black-headed Gull		Red	4	Summer
Buzzard		Green	3	Summer
Curlew		Red	17	Summer
Feral Pigeon		Green	3	Summer
Goldfinch		Green	2	Summer
Herring Gull		Red	1	Summer
Hooded Crow		Green	3	Summer
House Sparrow		Amber	1	Summer
Jackdaw		Green	3	Summer
Lesser Black-backed Gull		Amber	4	Summer
Linnet		Amber	2	Summer

[1] Annex I of the EU Bird's Directive

[2] Colhoun & Cummins, 2013

Species	EU BD[1]	BoCCI[2]	Total Number of Sightings	Season
Little Egret	I	Green	1	Summer
Magpie		Green	1	Summer
Meadow Pipit		Red	5	Summer
Mediterranean Gull	I	Amber	1	Summer
Raven		Green	4	Summer
Redpoll (Lesser)		Green	4	Summer
Robin		Amber	3	Summer
Rook		Green	4	Summer
Skylark		Amber	4	Summer
Sparrowhawk		Amber	3	Summer
Starling		Amber	5	Summer
Swallow		Amber	4	Summer
Willow Warbler		Green	4	Summer
Woodpigeon		Green	5	Summer

Table 2. Birds recorded on Vantage Point Surveys between February and May 2020

Species	EU BD	BoCCI	Total Number of Sightings	Season
Blackbird		Green	7	Winter & Summer
Blackcap		Green	1	Summer
Blue Tit		Green	2	Winter & Summer
Buzzard		Green	31	Winter & Summer
Chaffinch		Green	5	Winter & Summer
Chiffchaff		Green	1	Winter
Collared Dove		Green	2	Summer
Cormorant		Amber	2	Summer
Cuckoo		Green	1	Summer
Dunnock		Green	3	Winter & Summer
Goldfinch		Green	7	Winter & Summer
Grasshopper Warbler		Green	1	Summer
Great Black-backed Gull		Amber	2	Winter
Great Tit		Green	3	Winter & Summer
Grey Heron		Green	3	Summer
Herring Gull		Red	3	Winter & Summer
Hooded Crow		Green	7	Winter & Summer
House Sparrow		Amber	2	Winter & Summer
Jackdaw		Green	5	Winter & Summer
Kestrel		Amber	14	Winter & Summer
Lesser Black-backed Gull		Amber	5	Winter & Summer
Linnet		Amber	6	Winter & Summer
Magpie		Green	7	Winter & Summer
Mallard		Green	21	Winter & Summer
Meadow Pipit		Red	5	Winter & Summer

Species	EU BD	BoCCI	Total Number of Sightings	Season
Pheasant		Green	3	Winter & Summer
Pied Wagtail		Green	3	Winter & Summer
Redshank		Red	2	Winter
Reed Bunting		Green	1	Summer
Robin		Amber	3	Winter & Summer
Rook		Green	7	Winter & Summer
Sedge Warbler		Green	1	Summer
Skylark		Amber	7	Winter & Summer
Snipe		Amber	3	Winter & Summer
Sparrowhawk		Amber	3	Winter
Starling		Amber	2	Winter & Summer
Stonechat		Amber	7	Winter & Summer
Swallow		Amber	4	Winter & Summer
Swift		Amber	1	Summer
Willow Warbler		Green	4	Summer
Wood Pigeon		Green	6	Winter & Summer
Wren		Green	5	Winter & Summer

It may be seen that two species on Annex 1 of the EU Habitats Directive – the Mediterranean gull and Little egret – were seen in 2018 but none in 2020. Red-listed species (of conservation concern) comprised black-headed gull, curlew, herring gull, meadow pipit and redshank. The high number of curlew records in 2018 was made up by a flock circling over a field north of the site boundary. Two birds were also recorded on 1st September 2018 gliding across the runway at less than 20m height, for a total of 23 seconds. This is a very low level of activity within the site, 0.01% of the total survey time between 2018 and 2020. Based on these observations, it appears that curlew usage of the proposed site is minimal.

The bird fauna of the carpark woodland is limited by the lack of variety within the stand. From the evidence of singing birds, the main species are woodpigeon, blackcap, chiffchaff, dunnock, blackbird, robin and song thrush though other species would visit at times. The trees are not tall enough to be used by nesting buzzard – one of the main species seen over the runway – though they may attract sparrowhawk in future.

2.2.3 Other fauna

The edges of mown grass surrounding the woodland and the mound to the NW are flowery and butterfly species seen included common blue, meadow brown, ringlet, small tortoiseshell and six-spot burnet moth.

2.2.4 Adjoining habitats

Since the site is relatively close to the Tramore Backstrand SPA, it is useful to know of its bird populations and their contribution, if any, to the fauna of the airport. The IWeBS series of wetland counts organised by BirdWatch Ireland gives a summary of existing information. The bird species whose numbers at the Back Strand achieve 50% or more of the threshold for national importance are listed below.

Table 3. Average populations of shorebirds at Tramore Back Strand

Species	National importance	International value	Average 2010-2015
Brent goose	360	400	892
Shelduck	120	3000	98
Wigeon	630	15000	270*
Gadwall	20	600	33
Teal	340	5000	262
Mallard	290	20000	234
Shoveler	30	400	20
Red-breasted merganser	20	1700	15
Little grebe	20	4000	24
Little egret	20	1300	10
Oystercatcher	690	8200	566
Ringed plover	100	730	54
Golden plover	1200	9300	1218
Grey plover	30	2500	137
Lapwing	1100	20000	1030
Sanderling	60	1200	34
Dunlin	570	13300	425
Black-tailed godwit	190	610	430
Bar-tailed godwit	150	1200	146
Curlew	350	8400	376
Greenshank	20	2300	13
Redshank	300	3900	273
Turnstone	95	1400	61

*Wigeon is included as two figures of 400 + were counted in two of the years of survey

Burke et al (2018) found that numbers of waterbirds in the country had declined by 15% since the 2006/7 – 2010-1 period so these figures were higher during preceding colder winters. The site synopsis for the Tramore Backstrand SPA (see below) also quotes figures for 1995-2000 which were higher for all main species apart from brent goose and black-tailed godwit.

Tramore Back Strand is designated as Tramore Back Strand SPA. A total of thirty one species of bird were recorded at Back Strand during the course of three surveys undertaken in April 2020 and May 2020. Three Annex I species were recorded: sandwich tern, whooper swan and little egret; and five species red listed on the BoCCI were recorded: dunlin, curlew, redshank, black-headed gull and long-tailed duck. Five SCI species for Tramore Back Strand SPA were recorded, namely brent goose, dunlin, curlew, grey plover and black-tailed godwit. Of the species of conservation importance for Tramore Back Strand SPA, only curlew was recorded in the proposed site during the course of the site surveys, as detailed above and summarised in Table 1. The recent counts in spring 2020 reveal the presence of some wintering or passage wildfowl and waders and some summer species.

Table 4. Bird Species recorded at Tramore Back Strand in April 2020 and their conservation Status

Species	EU BD	BoCCI	QI Tramore Back Strand SPA	15/04/2020	23/04/2020	18/05/20
Black-headed Gull		Red			147	
Black-tailed Godwit		Amber	Yes		12	12
Brent Goose		Amber	Yes	257	299	
Common Gull		Amber			25	2
Coot		Amber				1
Cormorant		Amber			2	
Curlew		Red	Yes	4	1	8
Dunlin		Red	Yes	138	28	
Gadwall		Amber		5	5	
Gannet		Amber				1 (offshore)
Great Black-backed Gull		Amber			2	
Greenshank		Green		1	4	2
Grey Plover		Amber	Yes		1	
Little Egret	I	Green		2	2	11
Little Grebe		Amber			2	4
Long-tailed Duck		Red			2	
Mallard		Green		24	17	32
Moorhen		Green		1	4	2
Mute Swan		Amber		4	6	13
Oystercatcher		Amber		162	99	79
Redshank		Red		34	14	2
Ringed Plover		Amber		4	18	1
Sand Martin		Amber			40	

Species	EU BD	BoCCI	QI Tramore Back Strand SPA	15/04/2020	23/04/2020	18/05/20
Sanderling		Green		2		
Sandwich Tern	I	Amber		51	6	
Shelduck		Amber		35	19	10
Stock Dove		Amber			1	
Stonechat		Amber				2
Turnstone		Green			3	
Wheatear		Amber		3		2
Whimbrel		Green		73	475	19
Whooper Swan	I	Amber		2		

2.3 Evaluation

The habitats that would be affected by the proposed extension are either of low ecological value (meadows) or very similar to those present along the rest of the runway. The latter have some biodiversity value but are of a quality that would be considered only of local heritage value. There are no records of rare or protected species or of habitats included in Annex I of the Habitats Directive. No birds listed in the EU Birds Directive were seen regularly on or near the site. In fact, very few of the birds that frequent Tramore Backstrand have been seen at the airport at any time of the year. The only species are redshank, curlew, herring gull, great black-backed gull, lesser black-backed gull and cormorant.

The proposed carpark covers part of an area of scrub of local value to birdlife.

3. STAGE ONE APPROPRIATE ASSESSMENT SCREENING

3.1 Introduction

Appropriate assessment was introduced by the EU Habitats Directive as a way of determining during the planning process whether a project is likely to have a significant effect on any Natura 2000 sites so far designated (i.e. the candidate SAC's and SPA's), or their conservation objectives. All sites within 15km were considered as well as those further away that might be hydrologically linked. No further sites outside of the 15km buffer were considered to be within the zone of influence. In this case the closest site is the Tramore Dunes and Backstrand cSAC (Site Code 0671), a coastal complex of a dune spit and mudflats with European interest. The Backstrand is also designated as an SPA (Tramore Back Strand 4027).

Article 6(3) states

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives….

In the Irish context this has been interpreted as a four-stage process. Firstly, a screening exercise (Stage 1) determines if a project could have significant effects on a Natura site. The project should be screened without the inclusion of special mitigation measures unless potential impacts can clearly be avoided through design (or re-design). If impacts are identified or the situation is unclear a Natura Impact Statement (Stage 2) is provided to the planning or regulatory authority which then conducts an Assessment of the information supplied. Examples of significant effects are loss of habitat area, fragmentation of the habitat, disturbance to species using the site and changes in water resources or quality. If such negative effects come to light in the assessment, alternative solutions are investigated by the proponent (Stage 3) and modifications made unless the project is deemed to be driven by 'imperative reasons of overriding public interest' in its current form. In this case Stage 4 deals with compensatory action.

This AA Screening Report has been prepared in accordance with the Conservation Objectives of the relevant Natura 2000 sites as well as the following guidance documents:

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DEHLG 2009, Revised February 2010).
- EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (EC, 2007).
- Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2002).
- Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 9. (EC 2000).
- European Commission (2018). Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC. Brussels, 21.11.2018 C (2018) 7621 final.
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPW 1/10 and PSSP 2/10.

- Guidelines for Good Practice Appropriate Assessment of Plans under Article 6(3) Habitats Directive (International Workshop on Assessment of Plans under the Habitats Directive, 2011).
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC.
- The Status of EU Protected Habitats and Species in Ireland 2019 (Department of Arts, Heritage and the Gaeltacht, 2013). 2/43/EEC (EC, 2000.)
- Directive 92/43/EEC — Conservation of natural habitats — Special areas of conservation — Article 6(3) — Screening in order to determine whether or not it is necessary to carry out an assessment of the implications, for a special area of conservation, of a plan or project — Measures that may be taken into account for that purpose. CJEU Case C-323/17.

3.2 Project description

The main elements of the complete project are

- 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 runway would have a tarmacadam finish and would necessitate shallow excavation (and fill) for the foundation. The bearing quality of the existing soil is insufficient for the purpose.

The runway would drain to the surroundings through a French drain with any excess taken to existing streams. Two catchments are involved, the Ballygunnermore is crossed by the northern end of the runway while the Kilmacleague West takes water from the rest of the runway and airport buildings. This flows in the Ballygarran Stream to the Kilmacleague 'intake' – the reclaimed land on the northern side of the Back Strand. A marginal drain here acts as a holding pond and discharges at lower tidal levels via a sluice to the Back Strand. This flow would be run through a silt and oil separator before leaving the airport grounds.

The apron and carpark are also drained through oil interceptors to the head of the Ballygarran stream.

The proposed carpark, which is an extension of the existing one, would require fill to raise the level to the surroundings and then hardcore and tarmac to finish.

During construction three compounds will be created for machinery etc, with drains to grassed swales at the edges of any hard standing. The swales will drain to temporary stilling ponds with diffuse outfalls, to prevent the loss of silt-laden runoff.

Refuelling of plant during construction will be carried out at a dedicated refuelling station on site, which will be a minimum of 100m from any ditch or watercourse. The station will be fully equipped for a spill response and a specially trained and dedicated environmental and emergency spill response team will be appointed before commencement on site. Drip trays and spill kits will be kept available on site, to ensure that any spills from the vehicle are contained and removed off site. Only emergency breakdown maintenance will be carried out on site and appropriate containment facilities will be provided to ensure that any spills from breakdown maintenance vehicles are contained and removed off site.

Any diesel or fuel oils stored at the temporary site compounds will be bunded. The bund capacity will be sufficient to contain 110% of the tank's maximum capacity. Where there is more than one tank within the bund, the capacity will be sufficient to accommodate 110% of the largest tank's maximum capacity or 25% of the total maximum capacities of all tanks, whichever is the greater. Design and installation of fuel tanks will be in accordance with best practice guidelines BPGCS005 (Oil Storage Guidelines).

Temporary petrol and oil interceptors will be installed at the temporary site compound dedicated for plant repairs, storage of fuel or temporary generators. Surface water run-off from the temporary site compound will be directed through a Class 1 Full Retention Oil Interceptor before discharge to the dirty water drainage system for the site.

An associated development is the demolition of two roadside houses close to the northern end of the runway. These have neat gardens currently and have no heritage interest. Demolition will create opportunities for re-wilding as there is much hedge habitat close by.

3.3 Natura sites (see map at end)

The Natura 2000 sites within 15km of the proposed development are listed below

Site (Code)	Designation	Distance to airport km
Tramore Dunes & Backstrand (0671)	SAC	1.7 to S
Tramore Back Strand (4027)	SPA	1.7 to S
Lower River Suir (2137)	SAC	6.1 to N
River Barrow & River Nore (2162)	SAC	6.6 to E
Mid-Waterford coast (4139)	SPA	7.5 to SW
Hook Head (0764)	SAC	11.4 to SE

3.4 Likely effects

Only the Tramore Dunes & Backstrand SAC (0671) and Tramore Back Strand SPA (4027) have a direct ecological linkage with the proposed development in the form of drainage water flowing from the airport. The other sites, the Lower River Suir SAC, River Barrow and River Nore SAC, Hook Head SAC and the mid-Waterford coast SPA have only the most tenuous link through marine waters. Here the dilution factor is so large that any impact can be ruled out. A screening matrix (overleaf) suggests that effects could occur from outputs during construction and operation so that an NIS is required.

The specific conservation habitats, organisms and objectives are investigated below in more detail to assess potential effects.

3.5 Conclusion

There is the possibility that there could be effects on the Tramore Dunes & Backstrand SAC and the Tramore Back Strand SPA. In the absence of mitigation measures (which have not been considered at this screening stage), potential significant impacts cannot be ruled out. As a result, there is an obligation on the competent authority to carry out an appropriate assessment (i.e., Stage Two of the AA process) and, in this context, a Natura Impact Statement has been completed by the developer in respect of:

- Tramore Dunes & Backstrand SAC; and
- Tramore Back Strand SPA.

It has been concluded beyond reasonable scientific doubt that the proposed development will have no significant effects to the integrity of the following Natura 2000 sites:

- Lower River Suir SAC,
- River Barrow & River Nore SAC,
- Mount Hevey Bog SAC,
- Hook Head SAC, and
- the Mid-Waterford coast SPA.

Therefore, these sites have been 'Screened Out' at Stage One of the AA process.

SCREENING MATRIX

1. Brief description of project	Extension of airport runway, carpark and facilities
2. Brief description of the Natura 2000 sites	**Tramore dunes and Backstrand SAC** - Intertidal and dune area well-developed vegetation and birdlife. Some rare plants **Tramore Back Strand SPA** - important populations of birds and habitat
3. Individual elements of project (alone or in combination) likely to give rise to impacts on the Natura 2000 site by virtue of:	
Size and scale	Paving and drainage features; extra runway 854m
land-take	5ha altogether, no land-take from Natura 2000 sites
distance from the Natura site or key features of site	1.7km from both designations
resource requirement (water abstraction etc)	Fill, tarmac
emissions (where disposed of)	On-site during construction
excavation requirement	Minor foundations
duration of construction, operation, decommissioning etc	Construction – 9 months Operation – thereafter
Other	n/a
4. Likely changes to site arising from	
reduction of habitat areas	None
disturbance to key species	Possible
habitat or species fragmentation	None
reduction in species density	None

changes in key factors of conservation value (e.g. water quality)	None
climate change	Increase in aircraft movements and emissions
5. Likely impacts on the Natura site as a whole in terms of	
interference with the key relationships that define the structure of the site	None
interference with the key relationships that define the functioning of the site	Unknown, possible sediment/chemical input to mudflats
6. Indicators of significance as a result of the above effects in terms of	
Loss	None
Fragmentation	None
Disruption	None
Disturbance	None
change to key elements of the site (water quality etc)	Possible change to water quality
7. Elements of the project, alone or in combination with others, where the impacts are likely to be significant or where the scale and magnitude of impacts is not known	Scale of impact unknown

4. NATURA IMPACT STATEMENT

4.1 Introduction

The conclusion of the Appropriate Assessment screening was that two sites may be affected by the project and these are considered further below (Section 4.3) with regard to their qualifying features and conservation objectives.

First, the airport development is described again, together with the mitigation measures proposed.

The main elements of the complete project are

- 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.

4.2 Mitigation of possible effects

4.2.1 Construction

These measures are included in Section 7.9 of the EIAR.

- No construction-stage drainage will be allowed to discharge directly to the watercourses or its tributaries. Construction-stage drainage will be treated in settlement ponds prior to being discharged over vegetated land before draining towards the watercourse;
- Excavated subsoil material will be used for backfill or removed off site to an appropriate facility.
- Temporary spoil heaps will be surrounded by silt fencing to filter sediment from the surface water run-off from excavated material.
- Drains around hard-standing areas will be shallow to minimise the disturbance to sub-soils.
- Trenches will be excavated during dry periods where possible in short sections and left open for minimal periods, to avoid acting as a conduit for surface water flows. Clay bunds will be constructed within the trenches at regular intervals.
- All ditches and streams adjacent to proposed construction areas will be protected by fencing, including the proposed stilling ponds.
- A buffer zone of 10m is required from drainage ditches to the temporary compounds.
- All personnel working on site will be trained in pollution incident control response. Emergency Silt Control and Spillage Response Procedures contained within the Site Drainage Management Plan of the Construction Environmental Management Plan (CEMP) will ensure that appropriate information will be available on site outlining the spillage response procedure and a contingency plan to contain silt. Adequate security will be provided to prevent spillage as a result of vandalism. A regular review of weather forecasts of heavy rainfall is required, and a contingency plan will be prepared for before and after such events.

- A record will be kept of daily visual examinations of watercourses which receive flows from the proposed development, during and for an agreed period after the installation phase.
- The developer will ensure that erosion control measures, namely silt-traps, silt fencing and swales are regularly maintained during the construction phase.
- During the construction period, an emergency facility will be provided to control the discharge from stilling ponds. This will mitigate the risk of any accidental spillage on site affecting watercourses.
- A suitably qualified person will be appointed by the developer to ensure the effective operation and maintenance of drainage and other mitigation measures during the construction process. The operations management of the new runway will include regular monitoring of the drainage system and maintenance as required.
- Where haul roads pass close to ditches, silt fencing will be used to protect the ditch at locations where runoff from the tracks flows towards existing ditches. Silt traps will also be provided at outfalls from roadside swales to existing drains. Silt traps will be kept upstream of outfalls to allow a buffer zone to the outfall.
- Self-contained, wheel washing facilities will be provided at the temporary site compounds near each of the site entrances. Additional silt fencing will be kept on site in case of an emergency break out of silt laden run-off.
- Silt traps and silt fencing will be put in place in advance as construction progresses across the site.
- Wet concrete operations shall not take place within 10m of ditches and streams.
- if wet concrete operations are required, a suitable risk assessment will be completed prior to works being carried out and strategically located concrete washout areas will be provided.
- Refuelling of plant during construction will only be carried out at designated refuelling station locations on site. Namely at the temporary construction compounds. Each station will be fully equipped for a spill response and a specially trained and dedicated environmental and emergency spill response team will be appointed before commencement on site. Only emergency breakdown maintenance will be carried out on site. Drip trays and spill kits will be kept available on site, to ensure that any spills from the vehicle are contained and removed off site.
- Portaloos and/ or containerised toilets and welfare units will be used to provide toilet facilities for site personnel. Sanitary waste will be removed from site via a licenced waste disposal contractor. No permanent sanitary facilities will be constructed on site.

4.2.2 Mitigation – operation

During operation, chemicals such as oils, de-icing agents or dyes are possible inputs but the following measures will prevent this.

- The conceptual site drainage has been designed to complement existing overland flow and existing drainage. The drainage design will be developed in full at the detailed design stage.
- The increase in the rate of run-off from the runway will be mitigated by the proposed drainage system which includes the provision of a large area for percolation, with a connection to the watercourse in the event that the percolation is blocked or not achievable. This percolation zone will provide additional storage in the event of a large rainfall event.
- The new car parking area to the front of the terminal, and the extension of the existing car parking area is drained using surface water gullies in the form of 'eco drain' style drainage. This drainage is directed through an interceptor which will remove any hydrocarbons which may enter the system from vehicles and is also directed through an attenuation tank prior to discharge to the open drain/watercourse.
- De-icing the runway in future would be conducted only after an assimilative capacity assessment or impact study is conducted on the receiving environment, which proves to the satisfaction of the appropriate authorities that de-icing would not exceed the assimilative capacity for all relevant pollutants in the receiving waters.
- The airport will deploy a suitable emergency response protocol to a fuel spill or potentially polluting incident on the runway from an aircraft. This protocol will include the provision of equipment to ensure pollutants do not enter the surface water drainage system.
- The surface water apron drainage proposal includes an interceptor drain and a cold-water storage tank to capture any pollutants which enter the system. It is proposed to have a control system on this line which would shut the system in the event of a pollution incident and direct all of the surface water to the holding tank where it can be tested and/or taken off site if required. This control system will be designed to the satisfaction of the appropriate authorities, to ensure that contaminated waters are detected and retained. This would remove the possibility of any pollutants from the system getting to the watercourse.
- An assimilative capacity assessment of the WWTP discharge will need to be undertaken, which proves to the satisfaction of the appropriate authorities that the assimilative capacity of the receiving waters will not be exceeded by the increased flow from the upgraded wastewater treatment plant

4.3 Natura 2000 sites

4.3.1 Tramore Dunes & Backstrand SAC (site synopsis at end)

The site synopsis lists the qualifying interests of the Tramore Dunes & Backstrand site in terms of the Annex I habitats and Annex II species included in the EU Habitats Directive.

The qualifying interests are

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Annual vegetation of drift lines [1210]
- Perennial vegetation of stony banks [1220]
- *Salicornia* and other annuals colonising mud and sand [1310]
- Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]
- Mediterranean salt meadows (Juncetalia maritimi) [1410]
- Embryonic shifting dunes [2110]
- Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120]
- Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130

4.3.2 Tramore Back Strand SPA (site synopsis at end)

The mudflats are of considerable importance to wintering shorebirds and for this reason are covered by the Tramore Back Strand SPA. Crowe et al (2012) record an average population of 5350 waterbirds over the period 2006/7 – 2010/11 with no definite trend, although some reduction since 2000 (Crowe 2005). Brent geese are present in numbers of international importance while the levels for national importance are achieved by grey plover and black-tailed godwit.

The site is an SPA on the basis of the following qualifying interests

- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Grey Plover (*Pluvialis squatarola*) [A141]
- Lapwing (*Vanellus vanellus*) [A142]
- Dunlin (*Calidris alpina*) [A149]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Curlew (*Numenius arquata*) [A160]
- Wetland and Waterbirds [A999]

Two Annex I species in the Birds Directive are also listed – the little egret and kingfisher.

4.4 Conservation objectives

The full mitigation measures designed for this project are listed in Section 4.2 above and only those relevant to specific objectives are discussed here

4.4.1 Tramore Dunes & Backstrand

The conservation objectives for the candidate SAC Tramore Dunes and Backstrand are listed in NPWS (2013) and based on the series of habitats. The discharge of water from the airport area is to the Kilmacleague West, Barrgarran and Ballygunnermore watercourses. The first two lead into the reclaimed land to the south so that discharge occurs during low tide periods when the flap valve is open. The Ballygunneramore stream discharges directly to the estuary at Cloghernagh, again largely at low tide when sea level drops. Realistically an outflow can only affect habitats below High Water Mark because when the tide returns there will be sufficient dilution by seawater to render any materials harmless. The habitats that are potentially sensitive are therefore (i) Mudflats and sandflats not covered by seawater at low tide and (ii) *Salicornia* and other annuals colonising mud and sand. The higher communities of saltmarsh are inundated only by high tides.

(i) Objective: To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Tramore Dunes and Backstrand SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated using OSi data as 548ha
Community extent	Hectares	Maintain the extent of the *Zostera*-dominated community, subject to natural processes. See map 4	Based on an intertidal survey undertaken in 2008 (ASU, 2008). See marine supporting document for further information
Community structure: *Zostera* density	Shoots/m²	Conserve the high quality of the *Zostera*-dominated community, subject to natural processes	Based on an intertidal survey undertaken in 2008 (ASU, 2008). See marine supporting document for further details
Community distribution	Hectares	Conserve the following community types in a natural condition: Intertidal fine sand with *Bathyporeia pilosa* and *Nephtys cirrosa* community; Intertidal muddy sand with *Pygospio elegans* and *Tubificoides benedii* community complex. See map 4	Based on an intertidal survey undertaken in 2008 (ASU, 2008). See marine supporting document for further details

Impact: The likelihood of enough sediment entering the Back Strand to alter the habitat area is minimal as all will be retained within the confines of the development site. Even if small amounts of suspended solids were to reach the bay they will not have any negative effect on the in-fauna and birdlife which depends on sediment accretion and re-distribution. Similarly, the potential input onto the *Zostera* beds would be too small to have negative effects although the plant is sensitive to burial (Munkes *et al* 2015).

Oil interceptors work well if maintained properly. De-icing is a rare occurrence because of the location of the airport and the times of usage. No traces of contaminants were found in soils adjoining the runway (see EIAR, Section 7.4.2).

The main constituent of de-icing fluid (ethylene glycol) is non-toxic to wildlife and is degraded easily by bacteria. The products of degradation are several organic acids (e.g. formic, acetic, oxalic) and in an estuarine location these will be de-natured quickly by the alkaline environment.

Estuaries below industrial areas experience a significant load of chemicals of all types and retain large bird populations (Prater 1981, Hill *et al*. 1993) so no effect is expected from any likely input at Tramore.

(ii) Objective: To restore the favourable conservation condition of *Salicornia* and other annuals colonizing mud and sand in Tramore Dunes and Backstrand SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-site mapped: Tramore - 0.99ha. See map 5	Based on data from the Saltmarsh Monitoring Project (SMP) (McCorry, 2007). Habitat recorded at a single sub-site giving a total estimated area of 0.99ha. NB Further unsurveyed areas may be present within this site. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline, or change in habitat distribution, subject to natural processes. See map 5 for known distribution	Based on data from McCorry (2007). *Salicornia* is an annual species, so its distribution can vary significantly from year to year. It is found at two locations at Tramore: on mudflats partially enclosed by the Malcolmson embankment in the south-west section of the Back Strand and along the edge of the saltmarsh at Lisselan in the north-east section. See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry (2007). Sediment supply is particularly important for pioneer saltmarsh community, as the distribution of this habitat depends on accretion rates. The development of the Malcolmson Embankment in the 1860s affected sedimentation in the area. Reclamation and drainage works have occurred in the past at Lisselan and Tramore Intake. See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry (2007). Creeks deliver sediment throughout the saltmarsh system. Creeks and pan structures are well developed at Lisselan. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	This pioneer saltmarsh community requires regular tidal inundation. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry (2007). Transitional communities occur between saltmarsh and sand dune habitats. See coastal habitats supporting document for further details

Attribute	Measure	Target	Notes
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry (2007). See coastal habitats supporting document for details
Vegetation structure: vegetation cover	Percentage cover at a representative sample of monitoring stops	Maintain more than 90% of area outside creeks vegetated	Based on data from McCorry (2007). See coastal habitats supporting document for details
Vegetation composition: typical species and subcommunities	Percentage cover	Maintain the presence of species-poor communities listed in SMP (McCorry and Ryle, 2009)	Based on data from McCorry (2007). See coastal habitats supporting document for further details
Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*) with an annual spread of less than 1% where it is already known to occur	Based on data from McCorry (2007). *Spartina* forms a significant part of the saltmarsh and the intertidal flats around the back strand. This species has been present at the site since the 1960s and has increased significantly since then. See coastal habitats supporting document for further details

Impact: The minimal input of solids possible is not likely to affect the overall extent or the functioning of *Salicornia* communities. These (lower) parts of a saltmarsh trap most sediment from the incoming tide (when any from airport construction will have been diluted by the sea). They experience constant change with phases of erosion and accretion. *Salicornia* and other annuals are tolerant of widely differing salinity and chemical concentrations and grow in polluted as well as pristine environments.

4.4.2 Tramore Back Strand SPA

For the SPA the objectives are: To maintain the favourable conservation condition of the bird species of special interest that occur in the site (the qualifying interests), i.e.

A046 Brent Goose *Branta bernicla hrota*
A140 Golden Plover *Pluvialis apricaria*
A141 Grey Plover *Pluvialis squatarola*
A142 Lapwing *Vanellus vanellus*
A149 Dunlin *Calidris alpina alpina*
A156 Black-tailed Godwit *Limosa limosa*
A157 Bar-tailed Godwit *Limosa lapponica*
A160 Curlew *Numenius arquata*.

Also: To maintain the favourable conservation condition of wetland habitat in Tramore Back Strand SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

The objectives for the named species are given attributes and targets

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 and 2011/2012 waterbird survey programmes is discussed in part five of the conservation objectives supporting document

The objective for habitat is defined by the following attribute and target:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 676 hectares, other than that occurring from natural patterns of variation	The wetland habitat area was estimated as 676ha using OSi data and relevant orthophotographs. For further information see part three of the conservation objectives supporting document

Impact: Since no physical change is expected in the ecology of the mudflats (see above) there will be no direct impact/effects from the development on the bird populations. Natural fluctuations will continue to occur.

4.4.2.1 Construction

There will be no increase in disturbance during construction of this development as all sites are far enough away from wintering birds. As noted above none of the qualifying species occurs at the airport site although two Annex I birds – the Mediterranean gull (72 secs) and Little Egret (37 secs) were seen once in the 51 hrs of observation detailed in the EcIA.

4.4.2.2 Operation

Information collected during the 2011/12 Waterbird Survey Programme (NPWS September 2013 – Conservation objectives supporting document) assessed aircraft disturbance to be moderate in two of the thirteen sub-sites making up the Back Strand SPA. It was localised to Kilmacleague/Cloghernagh and Back Strand North but was less widespread and less damaging than people walking, with or without dogs. It resulted in short-term movements of feeding birds. Other studies have found that birds return to normal in 10 minutes (Smit & Visser, 1993).

The proposed increase in runway length will create no comparable increase in disturbance during the operational phase as the planes will not be appreciably lower or louder. The disturbance effect is further limited by the regularity of the flight pattern and the narrow width of the approach. It has been found that most birds become habituated to overflights by large aircraft and are less disturbed by them than the wandering paths of small aircraft, ultralights or model aeroplanes (Smit & Visser, 1993).

The noise levels created by the permitted southern extension of the runway were assessed as minimal in a previous report (LEAPP July 2014) though they would be extended slightly northward by this development. Birds are less susceptible to noise than is usually assumed and respond to visual signals much more strongly. Nesting terns for example only begin to be disturbed by noise level above 90dBA (Brown, 1990). Maximum levels outside the airport at Tramore are in the low 60's.

As regards mortality there is no likelihood that bird strikes will have a significant impact on the populations of the birds of conservation interest in the SPA. Although two species on Annex I of the EU Birds Directive have occurred on site (Mediterranean gull and Little Egret), each was present for less than 1 minute in the 51 hrs of watching. None of the qualifying species for designation was seen in the airport vicinity except for two curlew which together glided over the runway for 23 seconds. The duration of curlew activity recorded within the proposed site (23 seconds) is 0.01% of the total survey time between 2018 and 2020. Based on these observations, it is concluded that curlew usage of the proposed site is minimal. No evidence of breeding behaviour was observed and it is likely that the observation of curlew on 1st September 2018 was made as this species passed through the area.

Bird strikes with gulls are possible at any airport but there is a low level of gull activity in and around this site, as reported in the Chapter 12 – Biodiversity in the EIAR accompanying this submission. The recorded rate of bird strike between 2010 and 2014 included 2 gulls over the four-year period. Even with an increase in air traffic, this rate of bird strike is not expected to result in a significant adverse impact to Annex I or red-listed gull populations.

4.5 Summary of likely effects

The project does not impinge directly on the cSAC or SPA areas and at its closest point (proposed carpark) is almost 2km distant from the boundaries of the designated areas. The only links between the project and the Natura 2000 sites are the small streams that discharge onto the mudflats from the airport area, about 1.9km (channel length) away.

There are no negative effects likely to occur to the Natura 2000 sites. Potential impacts from construction and operation – sediment, oil or chemical loss – will be minimal with the prevention measures built-in to the project. Neither will there be a significant increase in disturbance from the northern extension of the runway.

Because the ecological effects are minimal in this case there are unlikely to be cumulative impacts with other developments locally. However, these are examined in the next section, taken from Chapter 12 of the EIAR

4.6 In-combination effects

Plan / Programme / Project	Key Objectives / Policies / Proposals	Potential Impact
Extension of runway at Waterford Airport to the south	Phased extensions to the existing airport runway and turning circle within the airport (150m and 200m runway extensions; 350m total runway extension and 375m including turning circle) and all associated works	The AA Screening undertaken for the proposals concluded that there is no likelihood of significant effects on Natura 2000 Sites, either alone or in combination with other Plans and projects. Adherence to the overarching policies and objectives of the Waterford County Development Plan 2011 - 2017 ensure that the planning permission for extension of runway to the south will comply with the core strategy of proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations; there is no potential for adverse in combination effects on the Natura 2000 sites.
Waterford County Development Plan 2011-2017	Objective INF4 relates specifically to Waterford Airport and states that the Council will support the lengthening and widening of the runway, subject to	Policies and objectives of the Waterford CDP 2011 - 2017 ensure that local planning applications will comply with

Plan / Programme / Project	Key Objectives / Policies / Proposals	Potential Impact
	compliance with proper planning and sustainable development and in compliance with Article 6 of the Habitats Directive. Policies and objectives NH1, NH6, NH7 and NH8 provide specific protection for European Sites. Policies NH1, NH2, NH3, NH4, NH9, NH10, NH11, NH13, NH15, NH16, NH17, NH25 and NH26 all provide support and protection for the ecology of the wider landscape within the Waterford County development plan area. Refer to Appendix 12.1 for details of the above policies and objectives.	proper planning and sustainability of the area and with the requirements of relevant EU Directives and environmental considerations. There is no potential for adverse in combination effects on the Natura 2000 sites.
River Basin District Management Plan 2018- 2021	The plan establishes the following priorities: Ensure full compliance with relevant EU legislation; Prevent deterioration; Meet the objectives for designated protected areas; Protect high-status waters; and Implement targeted actions and pilot schemes in focused sub-catchments aimed at (1) targeting water bodies close to meeting their objective and (2) addressing more complex issues that will build knowledge for the third cycle.	Implementation of the environmental objectives of the RBDMP and compliance with the EU Water Framework Directive 2000 (2000/60/EC) and any associated Programmes of Measures, ensure that projects shall only be permitted where it can be clearly demonstrated that the proposal would not have an unacceptable impact on the water environment, including surface waters, groundwater quality and quantity, river corridors and associated wetlands, estuarine waters and coastal waters. Compliance with this Plan will result in net positive in-combination effects on biodiversity and the Natura 2000 network.
Inland Fisheries Ireland Corporate Plan 2016 - 2020 The Inland Fisheries Act 2010	▪ Vision: To provide an accessible and sustainable, world class, inland fisheries resource for all. Mission: To ensure the valuable natural resources of Inland Fisheries and Sea Angling are protected, conserved, managed, developed and promoted to enable them achieve their full potential. High Level Objective 1 – Fish: To ensure that Ireland's fish populations are	Implementation and compliance with the goals of the IFI corporate plan and legislation will result in net positive in-combination effects on biodiversity and the Natura 2000 network.

Plan / Programme / Project	Key Objectives / Policies / Proposals	Potential Impact
	managed and protected to ensure their conservation status remains favourable. That they provide a basis for a sustainable world class recreational angling product, and that pristine aquatic habitats are also enjoyed for other recreational uses. High Level Objective 2 – Habitats: To develop and improve fish habitats and ensure that the conditions required for fish populations to thrive are sustained and protected. EU (Quality of Salmonid Waters) Regulations 1988. All works during development and operation of the project must aim to conserve fish and other species of fauna and flora habitat; biodiversity of inland fisheries and ecosystems and protect spawning salmon and trout.	
Kilbarry Residential & Solar Energy Park	Residential and solar energy park consisting of 855 residential dwellings and a solar energy park of c.3.6ha.	The Biodiversity Chapter of the EIAR undertaken for the proposals concluded that, with the implementation of mitigation measures, the development would have a moderate residual impact on habitats, flora and fauna. The permitted development is located c.4.7km north-west of the proposed development at Waterford Airport and is separated from the airport by a network of local and regional roads. There is no connectivity between the permitted development at Kilbarry and Waterford Airport. No cumulative or in-combination impacts are expected the Natura 2000 network.
SHD, Knockboy, Waterford	Residential development of 361 units with creche, car and cycle parking, all ancillary works.	The Biodiversity Chapter of the EIAR undertaken for the proposals concluded that, with the implementation of mitigation measures, the development would have a residual impact on hedgerows and treelines, bats and birds, which would be significant at a local level. The permitted

Plan / Programme / Project	Key Objectives / Policies / Proposals	Potential Impact
		development is located c.3.9km north-east of the proposed development at Waterford Airport and is separated from the airport by a network of local roads. There is no connectivity between the permitted development at Knockboy and Waterford Airport. No cumulative or in-combination impacts are expected on the Natura 2000 sites.
Local Planning Applications[3]	Local planning applications in proximity and within the zone of influence of the proposed works at Waterford Airport mainly relate to residential dwellings, many with site foul effluent treatment systems associated with them and some agricultural related applications. Planning applications within the Airport business park include erection of warehouse units, construction of a builders compound, retention of a telecommunications mast, and the construction of a waste transfer facility.	Adherence to the overarching policies and objectives of the Waterford County Development Plan 2011 - 2017 ensure that local planning applications and subsequent grant of planning comply with the core strategy of proper planning and sustainability and with the requirements of relevant EU Directives and environmental considerations; there is no potential for adverse in combination effects on the Natura 2000 network.

5. CONCLUSION

It is concluded beyond reasonable scientific doubt that, with the implementation of mitigation measures, there are not likely to be significant effects from the proposed development on the Tramore Dunes and Backstrand cSAC (Site Code 0671) and the Tramore Backstrand SPA (Site Code 4027) or any other European site, either alone or in combination with other plans or projects.

[3] The Local Planning Applications included in this potential in-combination impacts assessment support the following criteria; planning applications granted within the past five years that may contribute to potential cumulative impacts on ecological features within the zone of influence of the proposals at Waterford Airport.

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SITE SYNOPSES

TRAMORE DUNES AND BACKSTRAND SITE CODE : 000671

This composite coastal site lies at the head of Tramore Bay, east of Tramore, County Waterford. The Tramore dunes (Burrow) are the result of a classic inshore process - the growth of a spit of shingle and sand across a shallow bay. Behind the spit lies the Back Strand which dries out at low tide and is connected to the open sea by narrows at Rinneshark. The Burrow has a narrow neck and expands eastwards. Longshore drift is from the west so any loose material accumulates at the tip, which is hooked, and on the opposing spit at Bass Point.

The dunes here are well-developed and contain several habitats listed on Annex I of the EU Habitats Directive, including the priority habitat fixed dune. There are high ridges and valleys, old stabilised surfaces and new foredunes at shore level. Consequently all the major vegetation types are found from the strand flora, through mobile embryonic and marram dunes to stable fixed dunes, with saltmarsh on the northern fringe and slacks at Bass Point.

The flora of the fixed dunes is not as species-rich as at other systems, due mainly to the absence of grazing. This has led to the development of a tall, rank dune grassland and in places the development of dune scrub. Nevertheless, most of the characteristic dune species of the south-east are found, including Marram (*Ammophila arenaria)*, which is dominant over much of the system, Wild Thyme (*Thymus praecox),* Common Bird's-foot-trefoil (*Lotus corniculatus*), Lady's Bedstraw *(Galium verum),* Rest Harrow *(Ononis repens),* Fairy Flax *(Linum catharticum)* and Red Fescue *(Festuca rubra).* The moss *Tortula ruraliformis,* which is characteristic of fixed dune areas, is common in the dune turf. In some areas there is a shrubby community, with Wild Privet (*Ligustrum vulgare)* and Dewberry *(Rubus caesius*) being dominant. Bee Orchid (*Ophrys apifera*), a Red Data Book species, has been recorded recently from the fixed dune grassland, while there are isolated patches of Wild Asparagus (*Asparagus officinalis* ssp. *prostratus),* a species protected under the Flora (Protection) Order 1999.

Salt marsh, another habitat on Annex I of the EU Habitats Directive, is well developed and fairly extensive in the sheltered inner part of the site. It is the lagoon type of salt marsh, which is the rarest type in Ireland. The communities found are characteristic of both Atlantic and Mediterranean salt marshes. The main species include Thrift (*Armeria maritima),* Common Saltmarsh-grass *(Puccinellia maritima),* Sea Lavender *(Limonium humile),* Sea Plantain *(Plantago maritima),* Sea Aster *(Aster trifolium),* Sea Puslane *(Halimione portulacoides*) and Sea Rush (*Juncus maritimus).* The scarce Hard-grass (*Parapholis strigosa*) occurs and a feature of this salt marsh is the presence of Golden Samphire (*Inula crithmoides)*, a species rarely found on salt marshes in Ireland. Glasswort (*Salicornia* spp.) and other annuals such as Sea Blite (*Suaeda maritima*) occur in channels and pans and also onto the mudflats. Cord-grass (*Spartina anglica*) is frequent on parts of the salt marshes and on the mudflats.

The intertidal mud flats and sand flats are another important habitat listed on Annex I of the EU Habitats Directive. The macrofauna is well developed, with Lugworm (A*renicola marina),* Furrow Shell (*Scrobicularia plana*), Ragworm *(Hediste diversicolor)* and Cockle *(Cerastoderma edule)* being common, and with large patches of Mussel (*Mytilus edulis)* and Periwinkles (*Littorina littorea)* also present. A feature of this habitat is the presence of Eelgrass (*Zostera noltii* and *Z. angustifolia*).

Several rare plants have been recorded from Tramore. It is the only site in the country where the Red Data Book plant Sea Knotgrass (*Polygonum maritimum*) has grown, though it is sporadic in appearance. Other Red Data Book species which have been reported include Lesser Centaury (*Centaurium pulchellum*) and Cottonweed (*Otanthus maritimus*), both of which are listed on the Flora (Protection) Order, 1999, Sharp-leaved Fluellen (*Kickxia elatine*), Sea-kale (*Crambe maritima*) and Spring Vetch (*Vicia lathyroides*).

The Back Strand is a area of great importance for waterfowl on the south coast and is a designated SPA. The following figures are the average counts obtained during three seasons between 1994/95 and 1996/97. Brent Geese (482) occur in numbers which are of international significance. Six further species occur in nationally important numbers: Golden Plover (3,100), Grey Plover (261), Dunlin (1,970), Sanderling (53), Black-tailed Godwit (271) and Bar-tailed Godwit (405). Both Golden Plover and Bar-tailed Godwit are listed on Annex I of the EU Birds Directive.

The main threat to the stability of the dune habitats is from recreational pressures, with heavy usage of the site due to its proximity to Tramore. Already some large blow-outs and areas of bare sand are present. Driftline and shingle vegetation is also under pressure from heavy usage of the beach area. The intertidal and saltmarsh habitats are not under significant threat though possible seepage from the landfill site is a potential threat.

Tramore is of major ecological importance for the range of good quality coastal habitats which occur, including fixed dunes, which are listed as a priority habitat on Annex I of the European Habitats Directive. The site has a remarkably rich flora, featuring a number of rare and protected species, and the intertidal area is important for wintering waterfowl.

TRAMORE BACK STRAND SPA **SITE CODE: 004027**

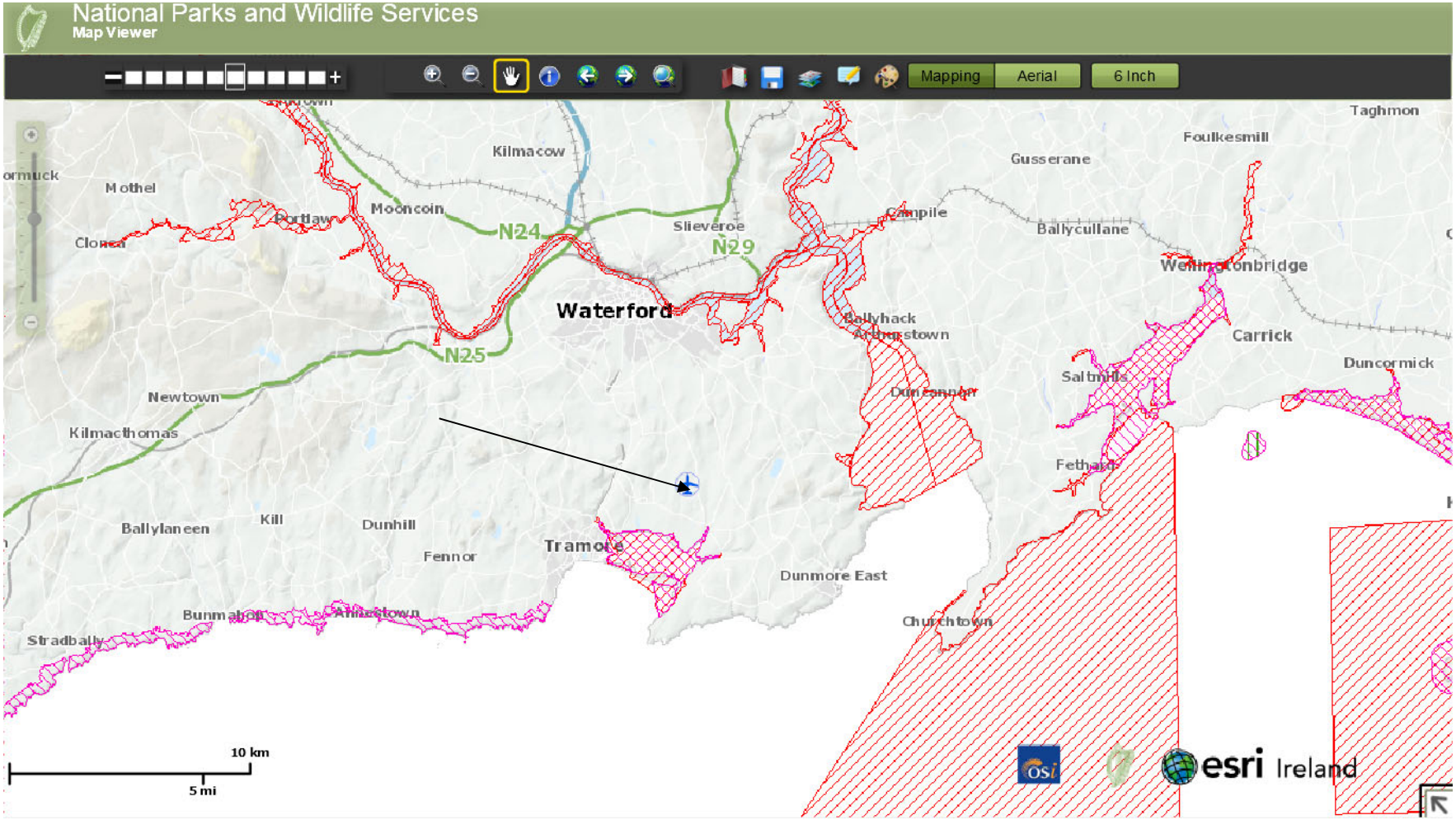
Tramore Back Strand SPA is located approximately 2 km east of Tramore town in County Waterford. It comprises a medium-sized estuary sheltered from the open sea by a long shingle spit, with high dunes. The area known as the Back Strand empties almost completely at low tide; it is connected to the outer bay and sea by narrows at Rinnashark.

The intertidal mud flats and sand flats are an important habitat and the macrofauna is well-developed, with Lugworm (Arenicola marina), Furrow Shell (Scrobicularia plana), Ragworm (Hediste diversicolor) and Common Cockle (Cerastoderma edule) occurring commonly, and with large patches of Common Mussel (Mytilus edulis) and Edible Periwinkle (Littorina littoralis) also present. A feature of this habitat is the presence of Eelgrass (Zostera noltii and Z. angustifolia), an important food item for herbivorous wildfowl. Salt marsh is well-developed and fairly extensive in the sheltered inner part of the site.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Light-bellied Brent Goose, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit and Curlew. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Tramore Back Strand is an important site for wintering waterfowl, providing both feeding and roosting areas. The site supports an internationally important population of Light-bellied Brent Goose (398) - all figures are mean peaks for the 5 winters 1995/96-1999/2000. A further seven species occur in nationally important numbers: Golden Plover (2,924), Grey Plover (299), Lapwing (3,308), Dunlin (1,723), Blacktailed Godwit (297), Bar-tailed Godwit (367) and Curlew (620). A number of other species also occur, including Wigeon (77), Teal (135), Red-breasted Merganser (18), Oystercatcher (348), Ringed Plover (55), Knot (75), Sanderling (46), Snipe (83), Redshank (223), Greenshank (12) and Turnstone (24). Little Egret, a species that has recently colonised Ireland, is a regular visitor (6).

Tramore Back Strand SPA is of high ornithological importance for wintering waterfowl, with one species occurring in internationally important numbers and a further seven species having populations of national importance. The regular occurrence of Little Egret, Golden Plover and Bar-tailed Godwit is of particular note as these three species are listed on Annex I of the E.U. Birds Directive. Tramore Back Strand is also a Ramsar Convention site.



Location of project in relation to Natura 2000 sites in the area