

6 APPROPRIATE ASSESSMENT – STAGE 2: NATURA IMPACT STATEMENT

The requirement to carry out a NIS followed on from the conclusion arrived at during the Screening process (refer **Section 5**). In order to determine if the identified source-pathway-receptor linkages could give rise to Likely Significant Effects (LSEs), the following steps are taken:

- Identification of the information required, including the proposed development, linkages to European sites, and description of relevant European sites;
- Examination of the site-specific conservation objectives and attributes of QIs/SCIs of relevant European sites; and
- Prediction of any LSEs of the proposed development, including in-combination effects.

6.1 Required Information

6.1.1 Proposed Development

The proposed development has been described in detail in **Section 2** of this report.

6.1.2 Linkages to European Sites

The connectivity between the proposed development and all European sites has been assessed. The Rogerstown Estuary SAC and the Rogerstown Estuary SPA have been identified as relevant European sites for this NIS. The source-pathway-receptor model for the proposed development is detailed in **Table 6-1**. Only relevant identified effects are brought forward to the next part of the NIS assessment.

The QIs and SCIs of the Rogerstown Estuary SAC/SPA are described, with regard to source-pathway-receptor link(s) within the ZoI of LSE of the proposed development in **Table 6-2** and **Table 6-3**. QIs and SCIs with identified source-pathway-receptor link(s) are carried forward for further assessment; while QIs and SCIs with no identified source-pathway-receptor link(s) are not assessed further in this NIS.

Table 6-1 Source-Pathway-Receptor Model for the Proposed Development

Phase	Source of Potential Effect	Description of Effect Pathway	Potential Zone of Influence of Effect	Potential Relevance of Effect to AA
Construction	Noise, vibration, lighting and human presence during movements of vehicles and staff associated with construction activities.	During construction, noise or other construction-related disturbance could reduce the ability of populations of Qualifying Interest/ Special Conservation Interest species to forage, roost or breed.	Varies by species. Generally assessed within 500 m of the proposed development footprint for wintering birds (see Madsen, 1985; Smit & Visser, 1993; and Rees <i>et al.</i> , 2005). However, distance can be significantly lower (e.g. 150 m for otter underground sites (NRA, 2006)), or higher (e.g. hen harriers may take flight when nesting at up to 750 m from disturbance (Whitfield <i>et al.</i> , 2008)).	Not relevant. No Qualifying Interest(s)/Special Conservation Interest(s) of relevant European sites were identified within the Zone of Influence of noise, vibration, lighting and human presence during the construction of the proposed development.
	Surface water run-off carrying suspended silt or contaminants into local watercourses.	Silt, hydrocarbons, and/or other contaminants (oils, fuels, etc.) may enter nearby watercourses through surface water run-off.	The Zone of Influence of effects from contaminated surface water is difficult to accurately estimate as it will depend on numerous factors including the type and concentration of pollutants, assimilative capacity of receiving waters, and time of year (related to water levels). As a precautionary measure, a reasonable worst-case Zone of Influence for water pollution from the proposed development site is considered to be the downstream surface water catchment. In this NIS the surface water catchment is defined at the scale of Catchment Management Unit (CMU) as adopted in the River Basin Management Plan (RBMP) for Ireland 2018-2021 (DoHPLG, 2018). The open coastlines, where Coastal Waterbodies begin, are considered to fall outside the potential Zone of Influence of significant effects.	Relevant. There is potential for pollution from surface water run-off to effect Qualifying Interest(s)/Special Conservation Interest(s) of relevant European sites during the construction of the proposed development.
	Disturbance of invasive species during the construction of the proposed development.	Construction activities could lead to the dispersal of scheduled invasive species either via machinery, materials, clothing or wild animals.	The Zone of Influence of effects for spread of terrestrial invasive species is difficult to accurately estimate, as plant fragments may be spread on tyre treads to distant unrelated sites. In relation to water-borne spread of vegetation, the Zone of Influence generally is restricted to the surface water Catchment Management Unit.	Relevant. Although no scheduled invasive plants are known to occur within the Zone of Influence of construction activities associated with the proposed development, there is potential for these species to enter the proposed development site via machinery.
	Changes of groundwater quality, yield and/or flow paths associated with	Construction activities (e.g. earthworks) could interfere with groundwater quality, yields and/or flow paths, potentially	The potential Zone of Influence of effects from earthworks to ground water quality, flow or/ or yield is difficult to accurately estimate as it will depend on	Relevant. There is potential for pollution from groundwater to effect Qualifying Interest(s)/Special Conservation Interest(s)

Phase	Source of Potential Effect	Description of Effect Pathway	Potential Zone of Influence of Effect	Potential Relevance of Effect to AA
	earthworks during construction.	affecting the water quality or habitats dependent on groundwater supply.	factors including the depth and intrusion of excavations, and time of year (related to water levels). As a precautionary measure, a reasonable worst-case spatial Zone of Influence is considered to be 500 m from the point of excavation; which is a precautionary doubling of the 250 m stated as the potential Zone of Influence from intrusive excavations to sensitive upland peatland sites (SEPA, 2014).	of relevant European sites during the construction of the proposed development.
	Noise, vibration, lighting and human presence during movements of vehicles and staff associated with construction activities.	During Operation, noise or other construction-related disturbance could reduce the ability of populations of Qualifying Interest/ Special Conservation Interest species to forage, roost or breed.	Varies by species. Generally assessed within 500 m of the proposed development footprint for wintering birds (see Madsen, 1985; Smit & Visser, 1993; and Rees <i>et al.</i> , 2005). However, distance can be significantly lower (e.g. 150 m for other underground sites (NRA, 2006)), or higher (e.g. hen harriers may take flight when nesting at up to 750 m from disturbance (Whitfield <i>et al.</i> , 2008)).	Not relevant. No Qualifying Interest(s)/Special Conservation Interest(s) of relevant European sites were identified within the Zone of Influence of noise, vibration, lighting and human presence during the construction of the proposed development.
Operation	Surface water run-off carrying suspended silt or contaminants into local watercourses.	Silt, hydrocarbons, and/or other contaminants (oils, fuels, etc.) may enter nearby watercourses through surface water run-off from three distinct areas: <ul style="list-style-type: none"> • The landfill body (capped and empty cells); • The IBA maturation enclosure; and • The new access road. In addition, potential sedimentation risk from operational works undertaken on the north of the site including cell construction, infilling, capping and restoration of cells. These works may cause sedimentation of the Ballough Stream in the absence of mitigation.	The Zone of Influence of effects from contaminated surface water is difficult to accurately estimate as it will depend on numerous factors including the type and concentration of pollutants, assimilative capacity of receiving waters, and time of year (related to water levels). As a precautionary measure, a reasonable worst-case Zone of Influence for water pollution from the proposed development site is considered to be the downstream surface water catchment. In this NIS the surface water catchment is defined at the scale of Catchment Management Unit (CMU) as adopted in the River Basin Management Plan (RBMP) for Ireland 2018-2021 (DoHPLG, 2018). The open coastlines, where Coastal Waterbodies begin, are considered to fall outside the potential Zone of Influence of significant effects.	Relevant. There is potential for pollution from surface water run-off to effect Qualifying Interest(s)/Special Conservation Interest(s) of relevant European sites during the operation of the proposed development.
	Disturbance of invasive species during the construction of the proposed development.	Operational activities could lead to the dispersal of scheduled invasive species either via machinery, materials, clothing or wild animals.	The Zone of Influence of effects for spread of terrestrial invasive species is difficult to accurately estimate, as plant fragments may be spread on tyre treads to distant unrelated sites. In relation to water-borne spread of vegetation, the Zone of Influence generally	Relevant. Although no scheduled invasive plants are known to occur within the Zone of Influence of operation activities associated with the proposed development, there is potential for these

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Phase	Source of Potential Effect	Description of Effect Pathway	Potential Zone of Influence of Effect	Potential Relevance of Effect to AA
			restricted to the surface water Catchment Management Unit.	species to enter the proposed development site and become established via landfill material and/or machinery.
	Changes of groundwater quality, yield and/or flow paths associated with earthworks during operation.	Operational activities (e.g. earthworks and infilling) could interfere with groundwater flow paths, potentially affecting the quality or distribution of habitats dependent on groundwater supply. In addition, any leachate discharge to ground has the potential to impact directly to groundwater and indirectly to the Ballough Stream which has known connectivity to the groundwater body.	The potential Zone of Influence of effects from earthworks to ground water quality, flow or/ or yield is difficult to accurately estimate as it will depend on factors including the depth and intrusion of excavations, and time of year (related to water levels). As a precautionary measure, a reasonable worst-case spatial Zone of Influence is considered to be 500 m from the point of excavation; which is a precautionary doubling of the 250 m stated as the potential Zone of Influence from intrusive excavations to sensitive upland peatland sites (SEPA, 2014).	Relevant. There is potential for pollution from groundwater to effect Qualifying Interest(s)/Special Conservation Interest(s) of relevant European sites during the operation of the proposed development.

Table 6-2 Proposed Development Link(s) with Rogerstown Estuary SAC (000208)

Qualifying Interest (priority habitat indicated with asterisk) (NPWS, 2013a) (S.I., 2018)	Relevance to the Zone of Influence of Likely Significant Effects of the Proposed Development (NPWS, 2013a)	Source-Pathway-Receptor link(s)
Estuaries [1130]	Estuary habitat has been mapped and is identified c. 7.7 km north of the proposed development (NPWS, 2013b).	Link(s) Identified. There is potential for estuaries, downstream of the proposed development, to be affected by oils, grit, or other potential contaminants generated during the construction of proposed development.
Mudflats and sandflats not covered by seawater at low tide [1140]	Mudflat and sandflat habitat has been mapped and is identified c. 7.7 km downstream of the proposed development (NPWS, 2013b).	Link(s) Identified. There is potential for mudflats and sandflats, downstream of the proposed development, to be affected by silt, oils, grit, or other potential contaminants generated during the construction of proposed development.
<i>Salicornia</i> and other annuals colonising mud and sand [1310]	<i>Salicornia</i> and other colonising mud and sand habitat has been mapped and is identified c. 8 km downstream of the proposed development (NPWS, 2013c).	Link(s) Identified. There is potential for <i>Salicornia</i> and other annuals colonising mud and sand, downstream of the proposed development, to be affected by silt, oils, grit, or other potential contaminants generated during the construction of proposed development.
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	Atlantic salt meadow habitat has been mapped and is identified c. 7.7 km downstream of the proposed development (NPWS, 2013c).	Link(s) Identified. There is potential for Atlantic salt meadow, downstream of the proposed development, to be affected by silt, oils, grit, or other potential contaminants generated during the construction of proposed development.
Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	Mediterranean salt meadow habitat has been mapped and is identified c. 8.1 km downstream of the proposed development (NPWS, 2013c).	Link(s) Identified. There is potential for Mediterranean salt meadows, downstream of the proposed development, to be affected by silt, oils, grit, or other potential contaminants generated during the construction of proposed development.
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	Shifting dunes habitat has been mapped and is identified c. 10 km downstream of the proposed development (NPWS, 2013c).	No link(s) identified.
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]*	Fixed coastal dunes habitat has been mapped and is identified c. 10 km downstream of the proposed development (NPWS, 2013c).	No link(s) identified.

Table 6-3 Proposed Development Link(s) with Rogerstown Estuary SPA (004015)

Special Conservation Interest (NPWS, 2013e) (S.I. 2010)	Relevance to the Zone of Influence of Likely Significant Effects of the Proposed Development	Source-Pathway-Receptor link(s)
Greylag Goose (<i>Anser anser</i>) [A043]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Shelduck (<i>Tadorna tadorna</i>) [A048]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Shoveler (<i>Anas clypeata</i>) [A056]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Knot (<i>Calidris canutus</i>) [A143]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Dunlin (<i>Calidris alpina</i>) [A149]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Redshank (<i>Tringa totanus</i>) [A162]	Roosting habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.

Special Conservation Interest (NPWS, 2013e) (S.I. 2010)	Relevance to the Zone of Influence of Likely Significant Effects of the Proposed Development	Source-Pathway-Receptor link(s)
	Significant Effects of the proposed development (NPWS, 2013f).	waters, and enter the Rogerstown Estuary, thereby potentially reducing prey availability.
Wetland [A999]	Habitat has been identified within the Zone of Influence of Likely Significant Effects of the proposed development (NPWS, 2013f).	Link(s) Identified. There is potential for contaminants generated during the proposed development to be carried into local surface waters, and enter the Rogerstown Estuary, thereby potentially reducing habitat quality.

The NPWS Natura 2000 data form, dated September 2019, provides status assessments for QIs of the Rogerstown Estuary SAC (NPWS, 2019). For each relevant QI of the Rogerstown Estuary SAC, the site-level and national conservation status, and the site-level and national treats are detailed in **Table 6-4**.

Table 6-4 Conservation Status and Threats to Relevant QIs of Rogerstown Estuary SAC

QIs with SPR link identified	Site-Level Conservation Status (NPWS, 2019d)	National Conservation Status (and Trend) (NPWS, 2019a)	Primary Site-level Threats from the Proposed Development (Professional Judgement Applied to NPWS, 2019d)	Other National Threats from NPWS (2019a)
Estuaries [1130]	C - Average or reduced	Inadequate (deteriorating)	Discharges (E03) and Invasive non-native plants (I01)	Pollution including domestic wastewater, agriculture and marine aquaculture. Alien invasive species such as the naturalised Pacific oyster (<i>Magallana gigas</i>) are also recognised as a significant pressure.
Mudflats and sandflats [1140]	C - Average or reduced	Inadequate (deteriorating)	Discharges (E03) and Invasive non-native plants (I01)	Pollution from agricultural, forestry and wastewater sources, as well as impacts associated with marine aquaculture, particularly the Pacific oyster (<i>Magallana gigas</i>).
<i>Salicornia</i> and other annuals colonising mud and sand [1310]	C - Average or reduced	Favourable (stable)	Discharges (E03) and Invasive non-native plants (I01)	No significant pressures were identified that would affect the long-term viability of the habitat.
Atlantic salt meadows [1330]	C - Average or reduced	Inadequate (deteriorating)	Discharges (E03) and Invasive non-native plants (I01)	Ecologically unsuitable grazing regimes and land reclamation, and the invasive non-native species common cord-grass (<i>Spartina anglica</i>).
Mediterranean salt meadows [1410]	C - Average or reduced	Inadequate (deteriorating)	Discharges (E03) and Invasive non-native plants (I01)	Pressures associated with agriculture, including overgrazing, undergrazing and land reclamation.

The NPWS Natura 2000 data form, dated October 2020, provides status assessments for SCIs of the Rogerstown Estuary SPA (NPWS, 2020). For each relevant SCI of the Rogerstown Estuary SPA, the site-level conservation status, short- and long-term population trends, and the site-level and international treats are detailed in **Table 6-5**.

Table 6-5 Conservation Status, Population Trends, and Threats to Relevant SCIs of Rogerstown Estuary SPA

SCIs with SPR link identified	Site-Level Conservation Condition (NPWS, 2013f)	'Short-Term' Site Population trend* (NPWS, 2013f)	'Long-Term' Site Population trend** (NPWS, 2013f)	Primary Site-level Threats from the Proposed Development (Professional Judgement Applied to NPWS, 2020)	Other threats identified by BirdLife International ⁶
Greylag Goose (<i>Anser anser</i>) [A043]	Highly Unfavourable	Decrease	Decrease	Landfill (J02.01) and Invasive non-native plants (I01)	Hunting, destruction and degradation of wetland habitats, pollution, and avian influenza.
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	Favourable	Decrease	Increase	Landfill (J02.01) and Invasive non-native plants (I01)	Hunting, disturbance from vehicles, future reduction in food supply, predation, avian influenza and climate variability.
Shelduck (<i>Tadorna tadorna</i>) [A048]	Favourable	Decrease	Increase	Landfill (J02.01) and Invasive non-native plants (I01)	Habitat loss, predation from American mink (<i>Neovison vison</i>), avian influenza, hunted for commercial and recreational purposes
Shoveler (<i>Anas clypeata</i>) [A056]	Favourable	Decrease	Increase	Landfill (J02.01) and Invasive non-native plants (I01)	No data available
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	Favourable	Decrease	Increase	Landfill (J02.01) and Invasive non-native plants (I01)	Over-fishing, bait digging, habitat degradation, pollution, human disturbance, coastal development, Intensive agriculture, fertiliser and pesticide use, and sea-level rise, hunting, and predation.
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]	Favourable	Decrease	Increase	Landfill (J02.01) and Invasive non-native plants (I01)	Petroleum pollution, wetland drainage for irrigation, land abandonment and changing land management practices. leading to scrub overgrowth, avian botulism and predation.
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Intermediate Unfavourable	Decrease	Decrease	Landfill (J02.01) and Invasive non-native plants (I01)	Climate change, predator pressure, disturbance from recreational activities, intertidal oyster culture and urban and industrial development.
Knot (<i>Calidris canutus</i>) [A143]	Highly Unfavourable	Decrease	Decrease	Landfill (J02.01) and Invasive non-native plants (I01)	Land reclamation, urban, industrial and agricultural expansion, Damming of rivers, dredging, pollution, aquaculture operations, renewable energy developments, oil exploration and invasion of mudflats by <i>Spartina</i> grasses, tourism, residential developments, flying aircraft, hunted, avian

⁶ BirdLife International Data Zone. Available online at <http://datazone.birdlife.org/species/search>. Accessed September 2022.

SCIs with SPR link identified	Site-Level Conservation Condition (NPWS, 2013f)	'Short-Term' Site Population trend* (NPWS, 2013f)	'Long-Term' Site Population trend** (NPWS, 2013f)	Primary Site-level Threats from the Proposed Development (Professional Judgement Applied to NPWS, 2020)	Other threats identified by BirdLife International ⁶
Dunlin (<i>Calidris alpina</i>) [A149]	Favourable	Decrease	Increase	Landfill (J02.01) and Invasive non-native plants (I01)	influenza, fishing nets, climate change induced sea level rise. Afforestation of moorland, nest predation, habitat change, invasion of alien plant species, intertidal mudflats from construction work, petroleum pollution, wetland drainage for irrigation, peat-extraction, reedbed mowing and burning, and abandonment and changing land management practices and avian influenza
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	Favourable	Increase	Increase	Landfill (J02.01) and Invasive non-native plants (I01)	Wetland drainage and agricultural intensification, habitat loss, climate change, predation, grazing, heavy traffic, pollution, human disturbance, habitat reclamation for tidal energy plants, aquaculture ponds, land conversion for agriculture, urban expansion, agricultural intensification at rice paddies, hunting, and invasion of alien plant species.
Redshank (<i>Tringa totanus</i>) [A162]	Favourable	Decrease	Increase	Landfill (J02.01) and Invasive non-native plants (I01)	Agricultural intensification, wetland drainage, flood control, afforestation, land reclamation, industrial development, encroachment of <i>Spartina</i> spp. on mudflats, improvement of marginal grasslands, disturbance on intertidal mudflats from construction work, predation, avian influenza, vulnerable to severe cold periods in Western Europe.

Table Footnotes

* Site population trend analysis: 5 yr = 2002/03 – 2007/08.

** Site population trend analysis: 12 yr = 1995/96 – 2007/08

6.1.3 Brief Description of European Sites within the Zol

There are two European sites within the Zol of the proposed development: the Rogerstown Estuary SAC and the Rogerstown Estuary SPA. A pollution effect pathway was identified between the proposed development and these two European sites, which are the only European sites downstream of the proposed development.

No effect pathways have been identified between the proposed development and distant/distal European sites, based on the Zols identified in **Section 3.4.2**, and the known or potential distribution of mobile QI/SCI features identified in **Section 4**.

6.1.3.1 Rogerstown Estuary SAC (000208)

Rogerstown Estuary is situated c. 2 km north of Donabate in Co. Dublin. It is a relatively small, narrow estuary separated from the sea by a sand and shingle bar. The estuary is divided by a causeway and narrow bridge, built in the 1840s to carry the Dublin-Belfast railway line (NPWS, 2013d).

This site is a good example of an estuarine system, with all typical habitats represented, including several listed in Annex I of the EU Habitats Directive. Rogerstown is an internationally important waterfowl site and has been a breeding site for Little Terns. The presence within the site of three rare plant species (Hairy violet *Viola hirta*; Meadow barley *Hordeum secalinum*; and Green-winged orchid *Orchis morio*) adds to its importance (NPWS, 2013d).

6.1.3.2 Rogerstown Estuary SPA (004015)

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Greylag Goose, Light-bellied Brent Goose, Shelduck, Shoveler, Oystercatcher, Ringed Plover, Grey Plover, Knot, Dunlin, Black-tailed Godwit and Redshank. 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 (NPWS, 2014).

Rogerstown Estuary SPA is an important link in the chain of estuaries along the east coast. It supports an internationally important population of Light-bellied Brent Goose and nationally important populations of a further 10 species. The presence of Little Egret and Golden Plover is of note as these species are listed on Annex I of the E.U. Birds Directive. Rogerstown Estuary is also a Ramsar Convention site, and part of Rogerstown Estuary SPA is designated as a Statutory Nature Reserve and a Wildfowl Sanctuary (NPWS, 2014).

6.2 Conservation Objectives

6.2.1 Rogerstown Estuary SAC

Site specific Conservation Objectives for the Rogerstown Estuary SAC are available (NPWS, 2013a). **Table 6-6** identifies the Conservation Objective attributes which could be adversely affected by the proposed development, for 'relevant' QIs scoped into the assessment.

Table 6-6 Conservation Objective Attributes for the Rogerstown Estuary SAC

QIs with SPR link identified	Site Specific Conservation Objective (NPWS, 2013a)	Site Specific Attributes Potentially Affected by the Proposed Development (NPWS, 2013a)
Estuaries [1130]	To maintain the favourable conservation condition	Habitat area Community extent Community structure: <i>Zostera</i> density Community structure: <i>Mytilus edulis</i> density Community distribution
Mudflats and sandflats [1140]	To maintain the favourable conservation condition	Habitat area Community extent Community structure: <i>Zostera</i> density Community structure: <i>Mytilus edulis</i> density Community distribution
<i>Salicornia</i> and other annuals colonising mud and sand [1310]	To maintain the favourable conservation condition	Habitat area Habitat distribution Physical structure: sediment supply Physical structure: creeks and pans Physical structure: flooding regime Vegetation structure: vegetation height Vegetation structure: vegetation cover Vegetation composition: typical species and subcommunities Vegetation structure: negative indicator species - <i>Spartina anglica</i>
Atlantic salt meadows [1330]	To restore the favourable conservation condition	Habitat area Habitat distribution Physical structure: sediment supply Physical structure: creeks and pans Physical structure: flooding regime Vegetation structure: zonation Vegetation structure: vegetation height Vegetation structure: vegetation cover Vegetation composition: typical species and subcommunities Vegetation structure: negative indicator species - <i>Spartina anglica</i>
Mediterranean salt meadows [1410]	To maintain the favourable conservation condition	Habitat area Habitat distribution Physical structure: sediment supply Physical structure: creeks and pans Physical structure: flooding regime Vegetation structure: zonation Vegetation structure: vegetation height Vegetation structure: vegetation cover Vegetation composition: typical species and subcommunities Vegetation structure: negative indicator species - <i>Spartina anglica</i>

6.2.2 Rogerstown Estuary SPA

Site specific Conservation Objectives for the Rogerstown Estuary SPA are available (NPWS, 2013e). **Table 6-7** identifies the Conservation Objective attributes which could be adversely affected by the proposed development, for 'relevant' SCIs scoped into the assessment.

Table 6-7 Conservation Objective Attributes for the Rogerstown Estuary SPA

SCIs with SPR link identified	Site Specific Conservation Objective (NPWs, 2013e)	Site Specific Attributes Potentially Affected by the Proposed Development (NPWs, 2013e)
Greylag Goose (<i>Anser anser</i>) [A043]	To maintain the favourable conservation condition	Population trend Distribution
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	To maintain the favourable conservation condition	Population trend Distribution
Shelduck (<i>Tadorna tadorna</i>) [A048]	To maintain the favourable conservation condition	Population trend Distribution
Shoveler (<i>Anas clypeata</i>) [A056]	To maintain the favourable conservation condition	Population trend Distribution
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	To maintain the favourable conservation condition	Population trend Distribution
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]	To maintain the favourable conservation condition	Population trend Distribution
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	To maintain the favourable conservation condition	Population trend Distribution
Knot (<i>Calidris canutus</i>) [A143]	To maintain the favourable conservation condition	Population trend Distribution
Dunlin (<i>Calidris alpina</i>) [A149]	To maintain the favourable conservation condition	Population trend Distribution
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	To maintain the favourable conservation condition	Population trend Distribution
Redshank (<i>Tringa totanus</i>) [A162]	To maintain the favourable conservation condition	Population trend Distribution
Wetland [A999]	To maintain the favourable conservation condition	Habitat area

6.3 Predicted Effects

The prediction of potential effects from the proposed development (alone) to the integrity of European sites is presented in this section. Cumulative effects from the proposed development in-combination with other plans or projects are presented in **Section 6.3.3.1**.

6.3.1 Rogerstown Estuary SAC

The prediction of effects from the proposed development to the integrity (based on QIs) of the Rogerstown Estuary SAC is set out in **Table 6-8**.

Table 6-8 Prediction of Effects on Site Integrity (Qualifying Interests) in the Rogerstown Estuary SAC during Construction and Operation

QIs with SPR link identified	Effect pathway (s)	Relevant Site-level Threat	Predicted Adverse Effect(s) Trigger(s) to relevant Qualifying Interests
Estuaries [1130]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Discharges and Invasive non-native plants.	Habitat area: -None predicted as impact as proposed development avoids activity within the habitat. Community extent, structure, and distribution: -Predicted impacts resulting from surface water pollution and potential invasive species.
Mudflats and sandflats [1140]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Discharges and Invasive non-native plants.	Habitat area: -None predicted as impact as proposed development avoids activity within the habitat. Community extent, structure, and distribution: -Predicted impacts resulting from surface water pollution and potential invasive species.
<i>Salicornia</i> and other annuals colonising mud and sand [1310]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Discharges and Invasive non-native plants.	Habitat area: -None predicted as impact as proposed development avoids activity within the habitat. Community extent, structure, and distribution: -Predicted impacts resulting from surface water pollution and potential invasive species.
Atlantic salt meadows [1330]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Discharges and Invasive non-native plants.	Habitat area: -None predicted as impact as proposed development avoids activity within the habitat. Community extent, structure, and distribution: -Predicted impacts resulting from surface water pollution and potential invasive species.
Mediterranean salt meadows [1410]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Discharges and Invasive non-native plants.	Habitat area: -None predicted as impact as proposed development avoids activity within the habitat. Community extent, structure, and distribution: -Predicted impacts resulting from surface water pollution and potential invasive species.

6.3.2 Rogerstown Estuary SPA

The prediction of effects from the proposed development to the integrity (based on SCIs) of the Rogerstown Estuary SPA is set out in **Table 6-9**.

Table 6-9 Prediction of Effects on Site Integrity (Special Conservation Interests) in the Rogerstown Estuary SPA during Construction and Operation

SCIs with SPR link identified	Effect pathway (s)	Relevant Site-level Threat	Predicted Adverse Effect(s) Trigger(s) to relevant Special Conservation Interests
Greylag Goose (<i>Anser anser</i>) [A043]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Landfill and Invasive non-native plants.	<p>Population trend:</p> <ul style="list-style-type: none"> -Potential impacts resulting from water pollution effecting habitat and food resources. -Potential impacts resulting from invasive species effecting habitat, including roosting sites. <p>Distribution:</p> <ul style="list-style-type: none"> -Potential impacts resulting from water pollution effecting habitat and food resources. -Potential impacts resulting from invasive species effecting habitat, including roosting sites.
Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Landfill and Invasive non-native plants.	<p>Population trend:</p> <ul style="list-style-type: none"> -Potential impacts resulting from water pollution effecting habitat and food resources. -Potential impacts resulting from invasive species effecting habitat, including roosting sites. <p>Distribution:</p> <ul style="list-style-type: none"> -Potential impacts resulting from water pollution effecting habitat and food resources. -Potential impacts resulting from invasive species effecting habitat, including roosting sites.
Shelduck (<i>Tadorna tadorna</i>) [A048]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Landfill and Invasive non-native plants.	<p>Population trend:</p> <ul style="list-style-type: none"> -Potential impacts resulting from water pollution effecting habitat and food resources. -Potential impacts resulting from invasive species effecting habitat, including roosting sites. <p>Distribution:</p> <ul style="list-style-type: none"> -Potential impacts resulting from water pollution effecting habitat and food resources. -Potential impacts resulting from invasive species effecting habitat, including roosting sites.
Shoveler (<i>Anas clypeata</i>) [A056]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Landfill and Invasive non-native plants.	<p>Population trend:</p> <ul style="list-style-type: none"> -Potential impacts resulting from water pollution effecting habitat and food resources. -Potential impacts resulting from invasive species effecting habitat, including roosting sites. <p>Distribution:</p> <ul style="list-style-type: none"> -Potential impacts resulting from water pollution effecting habitat and food resources.

-Potential impacts resulting from invasive species effecting habitat, including roosting sites.

Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Landfill and Invasive non-native plants.	<p>Population trend:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p> <p>Distribution:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p>
Ringed Plover (<i>Charadrius hiaticula</i>) [A137]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Landfill and Invasive non-native plants.	<p>Population trend:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p> <p>Distribution:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p>
Grey Plover (<i>Pluvialis squatarola</i>) [A141]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Landfill and Invasive non-native plants.	<p>Population trend:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p> <p>Distribution:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p>
Knot (<i>Calidris canutus</i>) [A143]	Surface water and groundwater pollution. Dispersal of scheduled invasive species.	Landfill and Invasive non-native plants.	<p>Population trend:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p> <p>Distribution:</p>

			<p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p>
Dunlin (<i>Calidris alpina</i>) [A149]	<p>Surface water and groundwater pollution.</p> <p>Dispersal of scheduled invasive species.</p>	Landfill and Invasive non-native plants.	<p>Population trend:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p> <p>Distribution:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p>
Black-tailed Godwit (<i>Limosa limosa</i>) [A156]	<p>Surface water and groundwater pollution.</p> <p>Dispersal of scheduled invasive species.</p>	Landfill and Invasive non-native plants.	<p>Population trend:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p> <p>Distribution:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p>
Redshank (<i>Tringa totanus</i>) [A162]	<p>Surface water and groundwater pollution.</p> <p>Dispersal of scheduled invasive species.</p>	Landfill and Invasive non-native plants.	<p>Population trend:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p> <p>Distribution:</p> <p>-Potential impacts resulting from water pollution effecting habitat and food resources.</p> <p>-Potential impacts resulting from invasive species effecting habitat, including roosting sites.</p>
Wetland [A999]	<p>Surface water and groundwater pollution.</p> <p>Dispersal of scheduled invasive species.</p>	Landfill and Invasive non-native plants.	<p>Habitat area:</p> <p>-Potential impacts resulting from water pollution effecting habitat.</p> <p>-Potential impacts resulting from invasive species effecting habitat.</p>

6.3.3 Surface Water Pollution Pathways

6.3.3.1 Sedimentation Risk from works directly adjacent to the Ballough Stream

The Waste Licence monitoring to date indicates that the site is largely in compliance with the suspended solids in the stream to the north of the site. The results show elevated levels of suspended solids recorded commonly observed in downgradient surface water monitoring point SW2. For each suspended solid exceedance, the Annual Environmental Reports (AERs) state that these likely to be unrelated to the operation of the facility and instead are associated with silt/run-off from streams bed/banks, and/or adjacent agricultural activities. This is supported with site observations which show a heavily modified bank at SW2 used for livestock feeding. In addition, ancillary voluntary monitoring of direct discharges from the site to the stream shows no sedimentation impact from the ongoing operations.

In short, the evidence base indicates that the current operations at the site are not having an adverse impact on the stream through sedimentation. This is likely largely due to the 70-80m buffer zone that lies between the landfill body and the stream. This buffer zone is vegetated and acts as a natural barrier to fugitive sediment loss from the existing landfilling operation. The proposed landfilling operation will operate using similar operational principles to the existing operation and will be located within the same footprint. In this regard, the buffer zone will remain and hence the risk of sedimentation from the proposed operation will not change from the existing operation. It is concluded that there will be no adverse impact to the stream as a result of sedimentation from the proposed operation.

It is acknowledged that the landfill cells to the north of the site are proposed for non-hazardous wastes as opposed to the existing inert wastes landfilled at the site. These non-hazardous wastes including contaminated soils and high metal wastes such as IBA and, as such, the potential for loss of metal particles or other substances in the sediments to the stream is greater. However, by retaining an adequate buffer area between the north of the landfill body and the stream, these risks may be suitably mitigated and no significant impact is predicted.

6.3.3.2 Potential for Surface Water run-off from the Landfill (Capped or Inactive Cells)

The proposed surface water drainage system is designed to collect and transport run off from the landfill and surrounding area to drains at the periphery of the landfill for attenuation and discharge. The collection system will be a network of perimeter drains at the boundary of the landfill footprint. The drains will be designed to minimise run off entering the waste body for active cells and capture the run off from the drainage layers of the capped cells.

The surface water design has been carried out in accordance with requirements of BS 752; the GSDS and the 'Recommendations for Site Development Works for Housing Areas' – published by the Department of the Environment. It is proposed to re-use water in the surface water attenuation pond for a number of purposes, namely:

- Supply of water for waste management processes (such as IBA maturation and or aggregate processing);
- Supply of water for firefighting requirements; and
- Supply of water for operation and maintenance requirements (such as dust minimisation).

Applying this SuDs in conjunction with site specific rainfall data, an allowable outflow from the landfill site of 5.24 l/s/ha was calculated (refer **Appendix E in Volume III of the EIAR**). It is proposed to limit outflow from the site through the attenuation pond, controlled by way of actuated valves such as a hydro brake.

A storage volume for a 1 in a 100-year storm event was used with provision included for a climate change factor of 20%. This results in a storage requirement of 15,000m³ including a climate change factor of 20% for the site (refer **Appendix E in Volume III of the EIAR**). This storage for a 1 in 100 year will be achieved through provision of 1m of freeboard in the pond. The attenuation pond will be located in the north eastern section of the site.

Surface water runoff will be discharged through a perforated pipe laid in crushed stone to a water course. The crushed stone allows infiltration into the ground but also provides the required attenuation for the worst-case scenario, i.e. assuming that there is no infiltration. This runoff will pass through oil interceptors, as required, prior to reaching the surface water attenuation pond.

The drainage pipe network has been designed to incorporate gravity flow where feasible. The majority of the surface water flow comes from the landfill cover. This runoff will be collected by the proposed drainage pipes and gravitate to the surface water attenuation pond.

The quality of the runoff from the proposed development will be improved by the following measures:

- Runoff will pass through oil interceptor prior to discharge to the stream. These oil interceptors will retain any hydrocarbons in the runoff and thereby improve the quality of the runoff; and
- The attenuation pond will also act as settlement pond to reduce the levels of suspended solids in the surface water.

This new infrastructure will result in a new discharge point in the IE licence. This discharge will be from the attenuation pond will be at greenfield run off rates through the use of flow control unit via a monitoring chamber to the stream that bounds the site to the north. This new emission point will be referenced as SWD8 within this EIAR and the licence application to the EPA. All discharges from this new emission point will be required to comply with the limits set out in the European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No 272 of 2009). In this regard, the discharge will be monitored for a suite of parameters for the existing discharges and there is no predicted significant adverse impact predicted.

6.3.3.3 Potential for Leachate from the Landfill (Active Cells)

Leachate will be produced where rain water percolates through the waste (such as an active cell or an uncapped cell), picking up suspended and soluble materials that originate from or are products of the degradation of waste. The wastes to be landfilled at the Hollywood site will generate leachate and this leachate is controlled by means of a basal liner (to prevent a pathway to ground – refer **Chapter 9 of the EIAR**) and an engineered cap to prevent rainwater ingress to the waste body. The cap and liner are described for each cell type in **Chapter 5** of the EIAR and these are required to comply with the requirements of the Landfill Directive and the EPA Manual on Landfill Site Design.

In addition to the liner and cap, leachate is actively collected from the cells to manage the risk to groundwater and surface water. In order to manage leachate risk from the proposed development, the leachate management on site will consist of the following requirements which are mandatory for a non-hazardous landfill cell:

- A drainage layer constructed of a 500mm leachate collection stone layer (non-calcareous, less than 10% CaCO₃ or equivalent as agreed with the EPA) with a minimum hydraulic conductivity of 1x10⁻³ m/s;
- A network of perforated smooth bore leachate collection pipes (minimum diameter 300mm and 200mm HDPE) within the drainage blanket laid to a self-cleansing gradient to collect leachate and carry it to a sump or collection header pipe;
- A network of leachate monitoring points and inspection chambers; and
- A leachate collection and storage tank where leachate will be stored temporarily prior to tankering off site.

Based on a maximum leachate generation rate of circa 102m³ per day a total of seven days of storage capacity is required in accordance with the EPA Landfill Operation Manual. Based on a seven-day capacity a storage capacity of 714m³ is required for the leachate holding tanks on the site. In order to accommodate this volume, a set of twin 532m³ tanks have been proposed for this purpose to be located adjacent to the wheel wash within a fully bunded area.

All leachate collected in sumps and chambers will be pumped to these holding tanks to maintain levels of leachate within the landfill cells. The leachate will be transferred from the holding tank to enclosed 23m³ road tankers for transport to a suitably licensed wastewater treatment plant under agreement with Irish Water.

As no leachate is to be treated on site there is no potential for direct adverse impact from leachate treatment on surface water from the proposed development. The lining, capping and leachate management systems are design in line with the legislation and best practice to ensure leachate is actively managed and removed from the site as required. In this regard, there is no significant adverse impact predicted to surface water from leachate management at the site.

6.3.3.4 Potential for Surface Water run-off from the IBA Maturation Area

In the event that water misting sprays are employed to aid IBA maturation or mitigate fugitive dusts, water will drain through the waste body and will be collected. This collected water will be tankered to the leachate holding tanks for off-site disposal, as appropriate, in line with the requirements of the IE Licence. With the above controls in place, there is no potential for significant adverse impact to the Ballyough Stream or the surface water network.

6.3.4 Groundwater Pollution Pathway

A detailed hydrogeological risk assessment of the proposed development has been undertaken to clearly present the conceptual site model of the hydrogeological regime underlying the site. This detailed analysis has been prepared to provide information to the EPA on the revised proposal to facilitate a grant of the licence for the proposed development.

One of the conclusions of the hydrogeological analysis was the confirmation of the presence of an east-west oriented groundwater flow divide broadly concurrent with the topographical high ground comprising Knockbrack Hill to the north of the Hollywood site. The elevation of this divide, together with the absence of common aquifer stress responses within monitoring wells across this divide, have provided the hitherto absent evidence to conclude the Bog of the Ring well field is not within hydraulic continuity with the Hollywood site and resides within a separate groundwater catchment and associated flow field.

Accordingly, it can now be stated with confidence that the Bog of the Ring well field can be dismissed as an environmental receptor and that the pumping regimes at either the Hollywood site or the well field will have no effect on each other.

Following the synthesis of new borehole data, the finding of the pump test interpretation and monitoring well hydrographs, the hydrogeological character of the Hollywood site can be summarised thus:

- The Namurian mudstones and shales are highly weathered and fractured and possess reasonable permeability and sustain a uniform hydraulic gradient to the south east with an approximate of magnitude of 0.005 (0.5%). A downward vertical gradient with the underlying Loughshinny Formation is revealed by some pairs of boreholes installed on site;
- Likely due to a broadly common degree and character of fracturing present, the pump test conducted did not reveal a significantly differing permeability between the two strata at the site and not subject to obvious anisotropy, allowing the saturated bedrock to be considered as an Equivalent Porous Medium;
- This has permitted the construction of a simplified Conceptual Hydrogeological Model to support the development of a LandSim risk assessment capable of being used to predict the likelihood of impact from modelled contaminants of concern within landfill leachates generated at the site over its lifetime;
- This LandSim model has shown the proposed site engineering design and waste streams are not likely at the 90th percentile to result in the measurable release to groundwater of Prohibited Hazardous Substances and will acceptably limit the concentration in groundwater of Non-Hazardous Polluting Substances at the down gradient boundary to within acceptable limits (refer RPS Report MDR1492Rp00015); and
- This shows that the site will not have an unacceptable impact on groundwater resources or groundwater dependant surface waters in likely hydraulic continuity with the site.

It can therefore be concluded that the proposed development at Hollywood Landfill may be operated with acceptable environmental impacts and be compliant with all appropriate waste management and environmental regulations.

6.3.5 In-combination Effects

It is a requirement of Appropriate Assessment that the in-combination (the cumulative development with any other plans or projects) effects be assessed. This assessment has particular regard for developments potentially affecting the Rogerstown Estuary SAC and Rogerstown Estuary SPA, given their downstream hydro-connectivity to the proposed development. The in-combination effect assessment is scoped using site specific treats of the European sites.

The Natura Standard Data Form for the Rogerstown Estuary SAC (NPWS, 2019) ranks 14 activities as posing a threat of medium or high importance to the SAC. These are:

- Invasive non-native plants (I01)
- Erosion (K01.01)
- Sea defence or coastal protection works, tidal barrages (J02.12.01)
- Reclamation of land from sea, estuary or marsh (J02.01.02)
- Use of biocides, hormones and chemicals (A07)
- Discharges (E03)
- Golf course (G02.01)
- Dispersed habitation (E01.03)
- Non-motorised nautical sports (G01.02)
- Motorised nautical sports (G01.01)
- Irrigations (A08)
- Bait digging / collecting (F02.03.01)
- Grazing (A04)
- Roads, motorways (D01.02)

The Natura Standard Data Form for the Rogerstown Estuary SPA (NPWS, 2018) ranks 12 activities as posing a threat of medium of high importance to the SPA. These are:

- Landfill (J02.01)
- Fertilisation (A08)
- Disposal of household / recreational facility waste (E03.01)
- Disposal of industrial waste (E03.02)
- Invasive non-native plants (I01)
- Motorised nautical sports (G01.01)
- Grazing (A04)
- Bait digging / collecting (F02.03.01)
- Dispersed habitation (E01.03)
- Grazing (A04)
- Golf course (G02.01)
- Hunting (F03.01)

6.3.5.1 Plans

There are a number of plans and projects that are currently underway or are planned to be developed within the vicinity of the proposed development that have the potential of presenting cumulative effects with the current development. These include the following national and regional plans:

National Development Plan 2021-2030

A National Strategic Priority of the National Development Plan 2021-2030 details the Sustainable Management of Water and other Environmental Resources. Within this strategy, Waste Management and Resource Efficiency has been identified as an investment action. The action states that:

'Delivering Significant Infrastructure Development projects (each with a spend of over €100m) to improve the quality of water and waste water. These include the Vartry Water Supply Scheme and the Cork Lower Harbour Main Drainage Scheme (both due for completion in 2021); the upgrade to the Ringsend Waste Water Treatment Plant; and a new Arklow Waste Water Treatment Plant.'

The Fingal County Development Plan 2017-2023

The Fingal County Development Plan 2017-2023 (FCC, 2017a) highlights a number of potential larger infrastructural projects within the county. Within this Plan, the proposed development site is classified as 'HA – High Amenity'; a class attributed to areas of high landscape value. Two specific objectives are set for this area: Objectives NH51 and NH52. These Objectives state the intention of protecting these areas from inappropriate development and that development reflects and reinforces the distinctiveness of these areas, which provide a higher level of protection against the development of large infrastructural projects/developments. The proposed development site is located adjoining 'Preserve Views' to the south, and is described as being within the 'Highly Sensitive Landscape: Nauf.

A NIS has been completed of The Fingal County Development Plan 2017-2023(FCC, 2017b), which concluded:

'As a result of the assessment process, it is concluded that mitigatory measures identified in the stage 2 Appropriate Assessment are adequate to ensure the integrity of the European Sites which will not be significantly affected as a result of the potential impacts of the objectives contained with the Fingal Development Plan.'

6.3.5.2 Projects

A search of the FCC and ABP planning databases has been undertaken to assess projects in the area with the potential for in-combination impacts and these are listed in **Section 5.3**. The waste facility (Ref. W0265-02) has the potential for impact to the River Devlin and hence cumulative impact to the Rogerstown Estuary SAC (site code 208) and SPA (site code 4015) in combination with the proposed development in the absence of mitigation.

In granting the licence for the waste facility, the EPA AA determination concluded that the activity is not directly connected with or necessary to the management of any European Site and the EPA considered that it can be excluded that the activity, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activity was not required. As a consequence, it is concluded that the operational practices for the proposed operation are sufficient to mitigate any risk to the River Devlin and any potential adverse cumulative impact.

6.3.5.3 In-combination Conclusion

Having regard for the above, other committed or consented projects and plans are not predicted to have LSEs on the integrity of any European sites, either alone or in-combination. No significant in-combination effects are predicted to affect the Rogerstown Estuary SAC and/or the Rogerstown Estuary SPA, having regard for the legal protection for the Rogerstown Estuary SAC and/or the Rogerstown Estuary SPA as European sites (through legislation at national level, and policy initiatives at national, county and local levels).