6. RESIDUAL IMPACT ASEESSMENT

The sections provided below detail the site-specific residual impact assessment in relation to the relevant QIs of the above EU sites in light of their site-specific targets and attributes. The assessment takes into consideration the proposed measures to avoid, reduce and block identified pathways for impact

6.1 Lough Gill SAC [001976]

The potential for adverse residual effects on each of the individual Qualifying Interests that were identified as being at risk of potential effects in the AA Screening Report is assessed in this section in view of the Conservation Objectives of those habitats and species.

6.1.1 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150]

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for Lough Gill SAC (NPWS Version 1, 2021). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.1. below.

Table 6-1: Targets and attributes associated with nominated site-specific conservation objectives for Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150]

Attribute	Target	Assessment
Habitat distribution	No decline, subject to natural processes.	There will be no decline in habitat area and distribution with the proposed project. The proposed works are located entirely outside of the SAC boundary. The community types subject to conservation will not be affected as a result of the proposed development. Indirect pathways including water pollution that would allow impacts to occur were considered in the design of the proposed project and a range of measures are in place to avoid all water pollution during all phases.
Habitat area	Area stable or increasing, subject to natural processes	
Vegetation composition: typical species	Typical species present, in good condition, and demonstrating typical abundances and distribution	There will be no decline in vegetation composition or distribution with the proposed project.
Vegetation composition: characteristic zonation	All characteristic zones should be present, correctly distributed and in good condition	
Vegetation distribution: maximum depth	Maintain maximum depth of vegetation, subject to natural processes	
Hydrological regime: water level fluctuations	Maintain appropriate natural hydrological regime necessary to support the habitat	There will be no decline or impact in hydrological regime with the proposed project..

Attribute	Target	Assessment
Lake substratum quality	Maintain appropriate substratum type, extent and chemistry to support the vegetation	There will be no decline or impact in lake substratum quality with the proposed project.
Water quality: transparency	Restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency	There will be no impacts on water quality including transparency, nutrients, phytoplankton biomass, phytoplankton compostion, algal biomass or macrophyte status as a result of the proposed development.
Water quality: nutrients	Restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species	
Water quality: phytoplankton biomass	Maintain appropriate water quality to support the habitat, including high chlorophyll a status	
Water quality: phytoplankton composition	Maintain appropriate water quality to support the habitat, including high phytoplankton composition status	
Water quality: attached algal biomass	Restore/maintain trace/absent attached algal biomass (<5% cover)	
Water quality: macrophyte status	Restore good/high macrophyte status	
Acidification status	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes	There will be no impacts on water and sediment pH, alkalinity and cation concentrations quality as a result of the proposed development.
Water colour	Restore/maintain appropriate water colour to support the habitat	There will be no impact on water colour, dissolved organic carbon or turbidity as a result of the proposed development.
Dissolved organic carbon (DOC)	Restore/maintain appropriate organic carbon levels to support the habitat	
Turbidity	Restore/maintain appropriate turbidity to support the habitat	
Fringing habitat: area and condition	Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat	There will be no impact on the condition of the fringe habitat area or condition as a result of the proposed development.

6.1.1.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Mudflats and sandflats not covered by seawater at low tide associated with the Lough Gill SAC, in any phase of development.

6.1.2 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0]

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for Lough Gill SAC (NPWS Version 1, 2021). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.2. below.

Table 6-2: Targets and attributes associated with nominated site-specific conservation objectives for Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]

Attribute	Target	Assessment
Habitat distribution	No decline, subject to natural processes.	There will be no decline in habitat area and distribution with the proposed project. The proposed works are located entirely outside of the SAC boundary. The community types subject to conservation will not be affected as a result of the proposed development. Indirect pathways including water pollution that would allow impacts to occur were considered in the design of the proposed project and a range of measures are in place to avoid all water pollution during all phases.
Habitat area	Area stable or increasing, subject to natural processes.	
Woodland Size	Area stable or increasing.	There will be no decline in woodland size, structure, with the proposed project.
Woodland structure: cover and height	Total canopy cover at least 30%; median canopy height at least 7m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20cm; bryophyte cover at least 4%	
Woodland structure: community diversity and extent	Maintain diversity and extent of community types	
Woodland structure: natural regeneration	Seedlings, saplings and pole age-classes of target species for 91E0* woodlands and other native tree species occur in adequate proportions to	

Attribute	Target	Assessment
	ensure survival of woodland canopy	
Woodland structure: dead wood	At least 19 stems/ha of dead wood of at least 20cm diameter	
Woodland structure: veteran trees	No decline	
Woodland structure: indicators of local distinctiveness	No decline in distribution and, in the case of red listed and other rare or localised species, population size	
Woodland structure: indicators of overgrazing	All five indicators of overgrazing absent	
Vegetation composition: typical species	At least 1 target species for 91E0 woodlands present; at least 6 positive indicator species for 91E0 woodlands present	There will be no decline in vegetation composition or distribution with the proposed project.
Vegetation composition: native tree cover	No decline	
Vegetation distribution: typical species	Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent	
Hydrological regime: flooding depth/height of water table	Appropriate hydrological regime necessary for maintenance of alluvial vegetation.	There will be no decline or impact in hydrological regime with the proposed project.

6.1.2.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) associated with the Lough Gill SAC, in any phase of development.

6.1.3 White-clawed Crayfish (*Austropotamobius pallipes*)

Targets and attributes for the conservation of this species are available in the detailed Conservation Objective document for Lough Gill SAC (NPWS Version 1, 2021). The targets and attributes for this QI have been reviewed and considered in relation to the current development and are described in Table 6.3. below.

Table 6-3: Targets and attributes associated with nominated site-specific conservation objectives for Austropotamobius pallipes (White-clawed Crayfish) [1092]

Attribute	Target	Assessment
Distribution	No reduction from baseline.	There will be no decline in the distribution of the whiteclawed crayfish population for which the SAC has been designated as a result of the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works
Population structure: recruitment	Juveniles and/or females with eggs at least 50% of positive samples taken at appropriate time and methodology	There will be no decline in the population structure and size of the whiteclawed crayfish population for which the SAC has been designated as a result of the proposed development.
Population Size	No reduction from baseline of 0.25	
Negative indicator species	No alien and non-indigenous crayfish species	There will be no direct or indirect introduction of negative indicator species due to the proposed development
Disease	No instances of disease	There will be no direct or indirect introduction of disease due to the proposed development.
River Water quality	At least Q3-4 at all sites sampled by EPA	There will be no reduction or impact on river water quality as a result of the proposed development.
Lake Water Quality	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat	There will be no reduction or impact on lake water quality as a result of the proposed development.
Habitat quality: heterogeneity	No decline from the baseline	There will be no change in habitat heterogeneity or habitat quality as a result of the proposed works.

6.1.3.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Whiteclawed crayfish associated with the Lough Gill SAC, in any phase of development.

6.1.4 *Brook Lamprey (Lampetra planeri)*

Targets and attributes for the conservation of this species are available in the detailed Conservation Objective document for Lough Gill SAC (NPWS Version 1, 2021). The targets and attributes for this QI have been reviewed and considered in relation to the current development and are described in Table 6.4 below.

Table 6-4: Targets and attributes associated with nominated site-specific conservation objectives for Brook Lamprey (Lampetra planeri) [1096]

Attribute	Target	Assessment
Distribution	Access to all watercourses down to first order streams	There will be no direct negative impact on distribution as a result of the proposed works. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Distribution in suitable habitat	Not less than 50% of sample sites with suitable habitat positive for larval brook/river lamprey	
Population structure of larvae	At least three age/size classes of larval brook/river lamprey present	There will be no impact on the population structure or larval density as a result of the proposed works.
Larval lamprey density in fine sediment	Mean density of brook/river larval lamprey in sites with suitable habitat at least 5/m	
Extent and distribution of spawning and nursery habitat	No decline in extent and distribution of spawning and nursery beds	There will be no impact on the extent and distribution of spawning and nursery habitat as a result of the proposed development.

6.1.4.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Brook Lamprey associated with the Lough Gill SAC, in any phase of development.

6.1.5 Sea Lamprey *(Petromyzon marinus)*

Targets and attributes for the conservation of this species are available in the detailed Conservation Objective document for Lough Gill SAC (NPWS Version 1, 2021). The targets and attributes for this

QI have been reviewed and considered in relation to the current development and are described in Table 6.5 below.

Table 6-5: Targets and attributes associated with nominated site-specific conservation objectives for Sea Lamprey (Petromyzon marinus) [1095]

Attribute	Target	Assessment
Habitat distribution: extent of anadromy	Greater than 75% of main stem length of rivers accessible from estuary	There will be no direct negative impact on habitat distribution of sea lamprey as a result of the proposed works. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Annual Run Size	Annual run size should reflect that expected under near-natural conditions	There will be no impacts on the annual run size associated with the proposed development.
Larval lamprey in fine sediment	Larval lamprey present in SAC catchment	There will be no impacts on the larval lamprey in fine sediment as a result of the proposed development.
Extent and distribution of spawning and nursery habitat	No decline in extent and distribution of spawning and nursery beds	There will be no impact on the extent and distribution of spawning and nursery habitat as a result of the proposed development.

6.1.5.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Sea Lamprey associated with the Lough Gill SAC, in any phase of development.

6.1.6 River Lamprey (*Lampetra fluviatilis*)

Targets and attributes for the conservation of this species are available in the detailed Conservation Objective document for Lough Gill SAC (NPWS Version 1, 2021). The targets and attributes for this QI have been reviewed and considered in relation to the current development and are described in Table 6.6 below.

Table 6-6: Targets and attributes associated with nominated site-specific conservation objectives for River Lamprey (Lampetra fluviatilis) [1099]

Attribute	Target	Assessment
Distribution	Access to all watercourses down to first order streams	There will be no direct negative impact on distribution as a result of the proposed works. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water
Distribution in suitable habitat	Not less than 50% of sample sites with suitable habitat positive for larval brook/river lamprey	

Attribute	Target	Assessment
		pollution during the construction and operational stage of the proposed works.
Population structure of larvae	At least three age/size classes of larval brook/river lamprey present	There will be no impact on the population structure or larval density as a result of the proposed works.
Larval lamprey density in fine sediment	Mean density of brook/river larval lamprey in sites with suitable habitat at least 5/m^2	
Extent and distribution of spawning and nursery habitat	No decline in extent and distribution of spawning and nursery beds	There will be no impact on the extent and distribution of spawning and nursery habitat as a result of the proposed development.

6.1.6.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI River Lamprey associated with the Lough Gill SAC, in any phase of development.

6.1.7 Salmon (*Salmo salar*)

Targets and attributes for the conservation of this species are available in the detailed Conservation Objective document for Lough Gill SAC (NPWS Version 1, 2021). The targets and attributes for this QI have been reviewed and considered in relation to the current development and are described in Table 6.7 below.

Table 6-7: Targets and attributes associated with nominated site-specific conservation objectives for Salmon (Salmo salar) [1106]

Attribute	Target	Assessment
Distribution: extent of anadromy	100% of river channels down to second order accessible from estuary	There will be no impact on distrubance as a result of the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Adult spawning fish	Conservation Limit (CL) for each system consistently exceeded	There will be no reduction in adult spwaing fish , salmon fry abundance, out-migrating smolt abundance or the number and distribution of redds as a result of the propsed development.
Salmon fry abundance	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 minutes sampling	

Attribute	Target	Assessment
Out-migrating smolt abundance	No significant decline	
Number and distribution of redds	No decline in number and distribution of spawning redds due to anthropogenic causes	
Water quality	At least Q4 at all sites sampled by EPA	There will be no reduction in water quality as a result of the proposed developement.

6.1.7.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Salmon associated with the Lough Gill SAC, in any phase of development.

6.1.8 Otter (*Lutra lutra*)

Targets and attributes for the conservation of this species are available in the detailed Conservation Objective document for Lough Gill SAC (NPWS Version 1, 2021). The targets and attributes for this QI have been reviewed and considered in relation to the current development and are described in Table 6.8 below.

Table 6-8: Targets and attributes associated with nominated site-specific conservation objectives for Otter (Lutra lutra) [1355]

Attribute	Target	Assessment
Distribution	No significant decline	There will be no decline on the species distrubtion as a result of the proposed works. There is no suitable habitat available to otter within the area of the proposed works locations. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Extent of terrestrial habitat	No significant decline. Area mapped and calculated as 193.91ha along river banks/ lake shoreline/around ponds	There will be no reduction to the terrestiral habitat extent.

Attribute	Target	Assessment
Extent of freshwater (river) habitat	No significant decline. Length mapped and calculated as 80.38km	There will be no reduction to the freshwater (river) habitat extent.
Extent of freshwater (lake) habitat	No significant decline. Area mapped and calculated as 353.39ha	There will be no reduction or alteration to the freshwater (lake) habitat extent as a reult of the proposed works.
Couching sites and holts	No significant decline.	There will be no reduction in holt or couching sites as a result of the proposed works.
Fish biomass available	No significant decline	There will be no changes to the fish biomass available to otter as a result of the proposed development.
Barries to connectivity	No significant increase.	There will be no changes to the connectivity between communting routes used by Otter as a result of the proposed development.

6.1.8.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Otter associated with the Lough Gill SAC, in any phase of development.

6.1.9 Determination on Potential Adverse Effects Lough Gill SAC

Based on the above review of the individual Qualifying Interests and following implementation of best practice and mitigation measures described in Section 3 of this report, it can be concluded, in view of best scientific knowledge and based on objective information, that the Proposed Project will not adversely affect this SAC.

6.2 Ballysadare Bay SAC [000622]

The potential for adverse residual effects on each of the individual Qualifying Interests that were identified as being at risk of potential effects in the AA Screening Report is assessed in this section in view of the Conservation Objectives of those habitats and species.

6.2.1 Estuaries [1130]

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for the Ballysadare Bay SAC (NPWS Version 1, 2013). The targets and attributes

for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.9. below.

Table 6-9: Targets and attributes associated with nominated site-specific conservation objectives for Estuaries [1130]

Attribute	Target	Assessment
Habitat Area	The permanent habitat area is stable or increasing, subject to natural processes	There will be no decline in habitat area, habitat distribution or typical species associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Community extent	Maintain the extent of the Zostera-dominated community, subject to natural processes	There will be no impact on community extent, structure of the Zostera-dominated community as a result of the proposed development.
Community structure: Zostera density	Conserve the high quality of the Zostera-dominated community, subject to natural processes	
Community distribution	Conserve the following community types in a natural condition: Intertidal sand with Angulus tenuis community complex; Muddy sand to sand with Hediste diversicolor, Corophium volutator and Peringia ulvae community complex; Fine sand with polychaetes community complex; Sand with bivalves, nematodes and crustaceans community complex; Intertidal reef community complex; Subtidal reef community complex	There will be no decline in distribution of Intertidal fine sand with Angulus tenuis community complex; Muddy sand to sand with Hediste diversicolor, Corophium volutator and Peringia ulvae community complex; Fine sand with polychaetes community complex; Sand with bivalves, nematodes and crustaceans community complex; Intertidal reef community complex; Subtidal reef community complex as a result of the proposed works.

6.2.1.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Estuaries associated with the Ballysadare Bay SAC, in any phase of development.

6.2.2 Mudflats and sandflats not covered by seawater at low tide [1140]

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for the Ballysadare Bay SAC (NPWS Version 1, 2013). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.10. below.

Table 6-10: Targets and attributes associated with nominated site-specific conservation objectives for Mudflats and sandflats not covered by seawater at low tide [1140]

Attribute	Target	Assessment
Habitat Area	The permanent habitat area is stable or increasing, subject to natural processes.	There will be no decline in habitat area associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Community Extent	Maintain the extent of the Zostera-dominated community, subject to natural processes	There will be no impact on community extent, structure of the Zostera-dominated community as a result of the proposed development.
Community structure: Zostera density	Conserve the high quality of the Zostera-dominated community, subject to natural processes	
Community Distribution	Conserve the following community types in a natural condition: Intertidal sand with Angulus tenuis community complex; Muddy sand to sand with Hediste diversicolor, Corophium volutator and Peringia ulvae community complex	There will be no decline in distribution of Intertidal sand with Angulus tenuis community complex; Muddy sand to sand with Hediste diversicolor, Corophium volutator and Peringia ulvae community complex as a result of the proposed works.

6.2.2.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Mudflats and sandflats not covered by seawater low tide associated with the Ballysadare Bay SAC, in any phase of development.

6.2.3 Harbour Seal (*Phoca vitulina*) [1365]

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for the Ballysadare Bay SAC (NPWS Version 1, 2013). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.11. below.

Table 6-11: Targets and attributes associated with nominated site-specific conservation objectives for Harbour Seal [1365]

Attribute	Target	Assessment
Access to suitable habitat	Species range within the site should not be restricted by artificial barriers to site use.	There will be no decline in access to suitable habitat as a result of the proposed development.

		Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Breeding behaviour	Conserve breeding sites in a natural condition.	The proposed development will not affect breeding, moult or resting sites. Indirect pathways including water pollution that would allow impacts to occur were considered in the design of the proposed project and a range of measures are in place to avoid all water pollution during works.
Moulting behaviour	Conserve moult haul-out sites in a natural condition.	
Resting behaviour	Conserve resting haul-out sites in a natural condition.	
Disturbance	Human activities should occur at levels that do not adversely affect the harbour seal population at the site	The proposed development will not cause disturbance to this species. No resting or breeding sites were identified within or adjacent to the development site.

6.2.3.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Harbour Seal associated with the Ballysadare Bay SAC, in any phase of development

6.2.4 Determination on Potential Adverse Effects Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC

Based on the above review of the individual Qualifying Interests and following implementation of best practice and mitigation measures described in Section 3 of this report, it can be concluded, in view of best scientific knowledge and based on objective information, that the Proposed Project will not adversely affect this SAC.

6.3 Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC [000627]

The potential for adverse residual effects on each of the individual Qualifying Interests that were identified as being at risk of potential effects in the AA Screening Report is assessed in this section in view of the Conservation Objectives of those habitats and species.

6.3.1 Mudflats and sandflats not covered by seawater at low tide [1140]

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC (NPWS Version 1, 2013). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.12. below.

Table 6-12: Targets and attributes associated with nominated site-specific conservation objectives for Mudflats and sandflats not covered by seawater at low tide [1140]

Attribute	Target	Assessment
Habitat Area	The permanent habitat area is stable or increasing, subject to natural processes.	There will be no decline in habitat area associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Community Extent	Maintain the extent of the *Zostera*-dominated community and the *Mytilidae*-dominated community complex, subject to natural processes.	There will be no impact on community extent, structure of the Zostera-dominated or the *Mytilidae*-dominated community complex community as a result of the proposed development.
Community structure: Zostera density	Conserve the high quality of the *Zostera*-dominated community, subject to natural processes	
Community structure: *Mytilus edulis* density	Conserve the high quality of the *Mytilidae*-dominated community complex, subject to natural processes	
Community Distribution	Conserve the following community types in a natural condition: Intertidal sand with Angulus tenuis community complex; Muddy sand to sand with *Hediste diversicolor*, *Corophium volutator* and *Peringia ulvae* community complex.	There will be no decline in distribution of Intertidal sand with *Angulus tenuis* community complex; Muddy sand to sand with *Hediste diversicolor*, *Corophium volutator* and *Peringia ulvae* community complex as a result of the proposed works.

6.3.1.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Mudflats and sandflats not covered by seawater low tide associated with the Ballysadare Bay SAC, in any phase of development.

6.3.2 Estuaries [1130]

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC (NPWS Version 1, 2013). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.13. below.

Table 6-13: Targets and attributes associated with nominated site-specific conservation objectives for Estuaries [1130]

Attribute	Target	Assessment
Habitat Area	The permanent habitat area is stable or increasing, subject to natural processes	There will be no decline in habitat area, habitat distribution or typical species associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Community extent: Hectares	Maintain the extent of the Zostera-dominated community and the Mytilidae-dominated community complex, subject to natural processes	There will be no alteration to the *Zostera*-dominated community or the *Mytilidae*-dominated community complex as a result of the proposed development. .
Community structure: Mytilus edulis density	Conserve the high quality of the Mytilidae-dominated community complex, subject to natural processes	
Community distribution	Conserve the following community types in a natural condition: Intertidal fine sand with *Peringia ulvae* and *Pygospio elegans* community complex; Estuarine mixed sediment to sandy mud with *Hediste diversicolor* and oligochaetes community complex; Fine sand with *Angulus* spp. and *Nephtys* spp. community complex; Sand to mixed sediment with amphipods community; Intertidal reef community.	There will be no decline in distribution of Intertidal fine sand with *Peringia ulvae* and *Pygospio elegans* community complex; Estuarine mixed sediment to sandy mud with *Hediste diversicolor* and oligochaetes community complex; Fine sand with *Angulus* spp. and *Nephtys* spp. community complex; Sand to mixed sediment with amphipods community; Intertidal reef communities as a result of the proposed works.

6.3.2.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Estuaries associated with the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC, in any phase of development.

6.3.3 Petrifying springs with tufa formation (*Cratoneurion*) [7220]

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC (NPWS Version 1, 2013). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.14. below.

Table 6-14: Targets and attributes associated with nominated site-specific conservation objectives for Petrifying springs with tufa formation (Cratoneurion) [7220]

Attribute	Target	Assessment
Habitat Area	Area stable or increasing, subject to natural processes	There will be no decline in habitat area and distribution associated with the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Habitat distribution	No decline	
Hydrological regime: height of water table; water flow	Maintain appropriate hydrological regimes	There will be no alteration to the hydrological regime, height of water table and water flow as a result of the proposed development. .
Water quality	Maintain oligotrophic and calcareous conditions	There will be no impact or alteration in water quality associated with the proposed development.
Vegetation composition: typical species	Maintain typical species	There will be no impact or alteration in vegetation composition associated with the proposed development.

6.3.3.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Petrifying springs with tufa formation (Cratoneurion) associated with the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC, in any phase of development.

6.3.4 Sea Lamprey (*Petromyzon marinus*)

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC (NPWS Version 1, 2013). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.15. below.

Table 6-15: Targets and attributes associated with nominated site-specific conservation objectives for Sea Lamprey [1095]

Attribute	Target	Assessment
Distribution: extent of anadromy	No barriers for migratory life stages of lamprey moving from freshwater to marine habitats and vice versa	There will be no direct negative impact on habitat distribution of sea lamprey as a result of the proposed works.

Attribute	Target	Assessment
		Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.

6.3.4.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Sea Lamprey associated with the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC, in any phase of development.

6.3.5 River Lamprey (*Lampetra fluviatilis*)

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC (NPWS Version 1, 2013). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.16. below.

Table 6-16: Targets and attributes associated with nominated site-specific conservation objectives for River Lamprey [1099]

Attribute	Target	Assessment
Distribution: extent of anadromy	No barriers for migratory life stages of lamprey moving from freshwater to marine habitats and vice versa	There will be no direct negative impact on habitat distribution of sea lamprey as a result of the proposed works. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.

6.3.5.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI River Lamprey associated with the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC, in any phase of development.

6.3.6 Harbour Seal (*Phoca vitulina*)

Targets and attributes for the conservation of this habitat are available in the detailed Conservation Objective document for the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC (NPWS Version 1, 2013). The targets and attributes for this habitat have been reviewed and considered in relation to the current development and are described in Table 6.17. below.

Table 6-17: Targets and attributes associated with nominated site-specific conservation objectives for Harbour Seal [1365]

Attribute	Target	Assessment

Access to suitable habitat	Species range within the site should not be restricted by artificial barriers to site use.	There will be no decline in access to suitable habitat as a result of the proposed development. Indirect pathways that would allow impacts to occur via water pollution were considered in the design of the proposed development and a range of measures, outlined in Section 5 of this report, are in place to avoid all water pollution during the construction and operational stage of the proposed works.
Breeding behaviour	Conserve breeding sites in a natural condition.	The proposed development will not affect breeding, moult or resting sites. Indirect pathways including water pollution that would allow impacts to occur were considered in the design of the proposed project and a range of measures are in place to avoid all water pollution during works.
Moulting behaviour	Conserve moult haul-out sites in a natural condition.	
Resting behaviour	Conserve resting haul-out sites in a natural condition.	
Disturbance	Human activities should occur at levels that do not adversely affect the harbour seal population at the site	The proposed development will not cause disturbance to this species. No resting or breeding sites were identified within or adjacent to the development site.

6.3.6.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Harbour Seal associated with the Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC, in any phase of development.

6.3.7 Determination on Potential Adverse Effects Cummeen Strand/Drumcliff Strand (Sligo Bay) SAC

Based on the above review of the individual Qualifying Interests and following implementation of best practice and mitigation measures described in Section 3 of this report, it can be concluded, in view of best scientific knowledge and based on objective information, that the Proposed Project will not adversely affect this SAC.

6.4 Cummeen Strand SPA [004035]

The potential for adverse residual effects on each of the individual Qualifying Interests that were identified as being at risk of potential effects in the AA Screening Report is assessed in this section in view of the Conservation Objectives of those habitats and species.

6.4.1 Wetland and Waterbirds [A999]

Targets and attributes for the conservation of this SCI habitat are available in the detailed Conservation Objectives for Cummeen Strand SPA (NPWS, 2013) and are described in Table 6.18 below.

Table 6-18: Targets and attributes associated with site specific conservation objectives for wetlands [A999] (NPWS 2013)

Attribute	Target	Assessment
Habitat area	The permanent area occupied by the wetland habitat should be stable and not significantly less than 1732 hectares, other than that occurring from natural patterns of variation	A suite of best practice measures have been incorporated into the project design to avoid and minimize potential impacts caused by degradation in water quality. Taking into consideration the preventative measures to avoid impact, it can be concluded that the proposed development will not result in any impacts which could adversely affect the extent of wetland habitat area.

6.4.1.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Wetland and Waterbirds associated with the Cummeen Strand SPA in any phase of development.

6.4.2 Determination on Potential Adverse Effects Cummeen Strand SPA

Based on the above review of the individual Qualifying Interests and following implementation of best practice and mitigation measures described in Section 3 of this report, it can be concluded, in view of best scientific knowledge and based on objective information, that the Proposed Project will not adversely affect this SPA.

6.5 Ballysadare Bay SPA [004129]

The potential for adverse residual effects on each of the individual Qualifying Interests that were identified as being at risk of potential effects in the AA Screening Report is assessed in this section in view of the Conservation Objectives of those habitats and species.

6.5.1 Wetland and Waterbirds [A999]

Targets and attributes for the conservation of this SCI habitat are available in the detailed Conservation Objectives for Ballysadare Bay SPA (NPWS, 2013) and are described in Table 6.19 below.

Table 6-19: Targets and attributes associated with site specific conservation objectives for Wetlands and Waterbirds [A999] (NPWS 2013)

Attribute	Target	Assessment
Habitat area	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2130 hectares, other than that occurring from natural patterns of variation	A suite of best practice measures have been incorporated into the project design to avoid and minimize potential impacts caused by degradation in water quality. Taking into consideration the preventative measures to avoid impact, it can be concluded that the proposed development will not result in any impacts which could adversely affect the extent of wetland habitat area.

6.5.1.1 Determination on potential for adverse effects

Based on the above, it can be concluded, in view of best scientific knowledge and based on objective information and the conservation objectives of the site, that the Proposed Project will not adversely affect the QI Wetland and Waterbirds associated with the Ballysadare Bay SPA in any phase of development.

6.5.2 Determination on Potential Adverse Effects Ballysadare Bay SPA

Based on the above review of the individual Qualifying Interests and following implementation of best practice and mitigation measures described in Section 3 of this report, it can be concluded, in view of best scientific knowledge and based on objective information, that the Proposed Project will not adversely affect this SPA.

6.6 Conclusion of Residual Impact Assessment

Based on the above, in view of best scientific knowledge, on the basis of objective information, the proposed project will not adversely affect any QI/SCI as a result of deterioration in surface water, habitat loss or disturbance during either construction or operation of the proposed project. There is no potential for adverse effect on the identified QIs/SCIs and their associated targets and attributes, or on any European Site. All identified pathways for effect have been robustly blocked through measures to avoid impacts and the incorporation of best practice/mitigation measures into the project design.

Taking cognisance of measures to avoid impacts and best practice/mitigation measures incorporated into the project design which are considered in the preceding section, the Proposed project will not have an adverse effect on the integrity of any European site.

The proposed project will not prevent the QIs/SCIs of European Sites from achieving/maintaining favourable conservation status in the future as defined in Article 1 of the EU Habitats Directive. A definition of Favourable Conservation Status is provided below:

> *'conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory referred to in Article 2;*

The conservation status will be taken as 'favourable' when:

> *'Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and*
>
> *'The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and,*
>
> *'There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.'*

Based on the above, it can be concluded in view of best scientific knowledge, on the basis of objective information that the proposed development will not adversely affect the Qualifying Interests/Special Conservation Interests associated with the following EU sites:

- Lough Gill SAC [001976]
- Ballysadare Bay SAC [000622]
- Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC [000627]

- Cummeen Strand SPA [004035]
- Ballysadare Bay SPA [004129]