

5. ASSESSMENT OF POTENTIAL ADVERSE EFFECTS & ASSOCIATED MITIGATION

This Natura Impact Statement presents the data and information on the project and provides an analysis of the potential adverse effects on the aforementioned EU designated sites. Potential adverse effects are assessed in view of best scientific knowledge, on the basis of objective information in relation to the proposed project including the proposed avoidance, reduction and preventive measures that are described in Section 3 above. The following sections provide a review of the potential impact pathways for each of the ‘screened-in’ EU Designated Sites. Mitigation measures for the avoidance of impact are then provided, followed by an assessment of potential effect, post implementation of the mitigation measures.

5.1 Potential for Direct Effects on the European Sites

There will be no direct effects on the QIs of the EU Designated Sites identified in this NIS. The EU Designated Sites are located entirely outside of the proposed development and no evidence of SCI or suitable habitat for these species was recorded during the ecological site survey. No suitable supporting habitat for QI species were recorded within the site and none of the QI habitats were recorded within or adjacent to the site.

5.2 Potential for Indirect Effects on the European Sites During the Construction Phase

Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Qualifying Interests (QIs) and Special Conservation Interests (SCIs) of the following European Sites in the form of deterioration of water quality resulting from pollution associated with the construction and operational phases of the development was identified:

Lough Gill SAC [001976]

Habitats

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

Species

- *Austropotamobius pallipes* (White-clawed Crayfish) [1092]
- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Lampetra planeri* (Brook Lamprey) [1096]
- *Lampetra fluviatilis* (River Lamprey) [1099]
- *Salmo salar* (Salmon) [1106]
- *Lutra lutra* (Otter) [1355]

Ballysadare Bay SAC [000622]

Habitats

- Estuaries [1130]
- Mudflats and sandflats not covered by seawater at low tide [1140]

Species

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

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

Habitats

- Mudflats and sandflats not covered by seawater at low tide [1140]
- Estuaries
- Petrifying springs with tufa formation (Cratoneurion)

Species

- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Lampetra fluviatilis* (River Lamprey) [1099]
- *Phoca vitulina* (Harbour Seal) [1365]

Cummeen Strand SPA [004035]

- [A999] Wetland and Waterbirds]

Ballysadare Bay SPA [004129]

- [A999] Wetland and Waterbirds]

5.2.1 Deterioration of Water Quality

Taking a precautionary approach, a potential pathway for indirect effects on the aquatic Qualifying Interests (QIs) and SCIs was identified, in the form of deterioration of water quality. Potential pathways for pollution effects have been identified via groundwater pathways as described above.

The works have potential, in the absence of mitigation, to impact on water quality and downstream aquatic ecological receptors through pollution generated during the construction and operational phases of the proposed development.

5.2.1.1 Construction Phase Control Measures and Assessment

The works have potential, in the absence of mitigation, to impact on water quality and downstream aquatic ecological receptors through pollutants including hydrocarbons, fuel, cement and sedimentation entering groundwaters during the construction phase. A suite of best practice environmental control and measures have been incorporated into the design of the proposed development to be implemented during the construction phase and are fully described below. Measures for the protection of the environment and water quality have been incorporated into the initial site setup phase, including the installation and management of site compounds, fuel storage areas and material storage areas. Such measures will ensure that there is no potential for water quality deterioration or effects on ecological receptors.

The following best practice mitigation and environmental control measures have been incorporated into the proposed development:

Site Set-up

- 2.5m high hoarding will be erected around the boundaries of the development site. All works will be located within the confines of this fencing
- A site compound will be established within the site boundary. The exact location of the site compound will be established by the contractor.
- Access routes will be clearly marked / identified. Access during construction to any working areas will be restricted to land within the outlined works area.

Pollution Prevention

- All fuel and chemicals will be stored in designated areas, with deliveries of hazardous materials supervised.
- Oils/Fuels/Hazardous Wastes will be stored in bunded areas or in bunded containers.
- In the case of spills or discharges, remedial action will be taken as soon as possible in accordance with company procedures.
- Use of silt fences and silt bags to contain surface water run-off from the site.
- Control of spoil and other materials to prevent spillage.
- All site plant will be inspected at the beginning of each day prior to use. Defective plant shall not be used until the defect is satisfactorily fixed. All major repair and maintenance operations will take place off site.
- Vehicles will never be left unattended during refuelling. Only dedicated trained and competent personnel will carry out refuelling operations and plant refuelling procedures shall be detailed in the contractor's method statements.
- Fuels, lubricants and hydraulic fluids for equipment used on the site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment.
- All fuels, lubricants and hydraulic fluids will be stored at the site compound. The storage area will contain a small bund lined with an impermeable membrane in order to prevent any contamination of the surrounding soils and vegetation.
- Potential impacts caused by spillages etc. during the construction phase will be reduced by keeping spill kits and other appropriate equipment on-site.
- All drainage arrangements will be determined in consultation with the Local Authority
- Surface water as arising during excavation works will be discharged to the surface water system. Sediment control will be implemented where surface water is contaminated with silt.
- Water contaminated with silt will not be allowed to enter a watercourse or drain as it can cause pollution.
- All parts of the drainage system will be protected from construction runoff to prevent silt clogging the system and causing pollution downstream. Measures to prevent this include soil stabilisation, early construction of sediment management basins, channelling run-off away from watercourses and surface water drains and erosion prevention measure.
- During construction, any surfaces which are intended to enable infiltration must be protected from compaction. This includes protecting from heavy traffic or storage materials.
- SuDS will be constructed in line with manufacturer's guidelines / best practice methods.
- Following construction, subsoil that has been compacted during construction will be broken up prior to the re-application of topsoil to reinstate the natural infiltration performance of the ground.

Measures to avoid the release of cement-based material during construction

- Pouring of cement-based materials for works will only be carried out in dry conditions.
- Pumped concrete will be monitored to ensure there is no accidental discharge.
- Mixer washings and excess concrete will not be discharged directly into the drainage network.
- Washout from concrete trucks will be contained or prohibited on site.

Measures to avoid effects associated with the disposal of wastewater

- A self-contained port-a-loo with an integrated waste holding tank will be used at the site compounds, maintained by the providing contractor, and removed from site on completion of the construction works;
- No wastewater will be discharged on-site during either the construction or operational phase.

Waste Management

- A site waste management plan will be produced for this project. This will include a waste forecast identifying options for reuse, recycling and avoidance of landfill and to record actual waste.

- All works carried out as part of these works will comply with all Statutory Legislation including the Waste Management Act & Local Government (Water Pollution) Acts, and the contractor will co-operate in full with the Environmental Section of the Local Authority.
- All waste will be collected in skips and the site will be kept tidy and free of debris at all times.
- Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or recycling.
- All construction waste materials will be stored within the confines of the site, prior to removal from the site to a licenced waste facility.

Environmental Monitoring

- The contractor will assign a member of the site staff as the environmental officer with the responsibility for ensuring the environmental measures prescribed in this document are adhered to. Any environmental incidents or non-compliance issues will immediately be reported to the project team.

5.2.1.2 **Operational Phase Control Measures and Assessment**

The operational phase of the proposed project will result in the production of foul sewage and storm/surface water runoff. If not adequately treated, there is potential for impacts on water quality of the downstream European Sites via wastewater and storm/surface water discharged from the Site.

5.2.1.2.1 **Preventative measures to avoid impacts on water quality**

Best practice environmental control measures have been incorporated in the design of the development and are described in the following subsections. Indirect effects during the operational stage of the development are not anticipated. As described in the Civil Design Report (Jennings O'Donovan & Partners, 2022) (attached as in Appendix A of the AA Screening Report, itself included as Appendix 1 of this NIS.) *'It is proposed to direct the foul sewer from the development to the existing foul sewer network in the adjoining Ardcairn estate at the north-western boundary of the proposed site. This existing network serves the Ardcairn estate located to the north of the proposed site. The proposed foul sewer will discharge under gravity to the existing Ardcairn foul network. It is proposed to discharge the storm networks into two separate soakaways, one located in the central amenity area and the other located within the northern public pocket park. One soakaway is to serve the northwest of the development and another soakaway to serve the South and East of the development.'*

'The maximum pipe diameter for the drainage system is to be 450mm, with a maximum and minimum gradient such that all velocities fall within the limits of 0.75 and 2.5m/sec as set out in the "Code of Practice for Wastewater Infrastructure" by Irish Water.'

The foul drainage for the entire development will be collected throughout the site in the foul pipe network and will then discharge by gravity to the existing foul network in the adjoining Ardcairn estate at the north-western boundary of the proposed site. The typical specification of the proposed pipes are detailed in Appendix C of the Civil Design Report. Details of the development's foul drainage network are shown on drawing 6665-JOD-XX-DR-C-700-001, included in Appendix A of the Civil Design Report. In accordance with the recommendations from the Irish Water Code of Practice for Wastewater Infrastructure, a wastewater flow rate of 150 litres/person/day was assumed.

'An IW Pre-connection enquiry form was submitted to Irish Water in relation to the proposed development on the 20th of September 2021, for the required Water and Wastewater Connections. On the 11th of February 2022 the Feasibility response to the pre-connection enquiry was received, advising that the proposed connections to the Irish Water networks can be facilitated at this moment in time.'

According to the Civil Design Report *'The water main has been designed in accordance with the Code of Practice for Water Infrastructure. A 110mm OD PE connection is proposed to be made to the existing water main located in the Cairn Road as shown on drawing 6665-JOD-XX-ZZ-DR-C-700-002,*

included in Appendix A of the Civil Design Report. A 50mm PE connection will be made to each dwelling/unit.

According to the Civil Design Report ‘The proposed storm network will discharge surface water run-off to two separate proposed soakaways, one located in the central amenity area and the other located within the northern public pocket park. It is proposed that all storm water generated by the site will gravity flow to the each of the proposed soakaways via a Class 1 Klargestor Bypass separator or similar. For the soakaway located within the central amenity area it is proposed to use a Class 1 Klargestor NSBE015 Bypass separator or similar. For the soakaway located in the within the northern public pocket park it is proposed to use a Class 1 Klargestor NSBP004 Bypass separator or similar. This can also be seen on drawing 6665-JOD-XX-ZZ-DR-C-700-001, included in Appendix A of the Civil Design Report’.

As described in the Civil Design Report ‘Storm water run-off from the internal roads, parking bays and footpaths will be collected by precast concrete gullies including lockable cast iron grating and frames connected to a piped system. Surface water run-off from roof areas will be collected via downpipe connections to the main network. Gullies are located as shown on the drawings included in Appendix A of the Civil Design Report. Gullies are positioned in accordance with the ‘Recommendations for Site Development Works’. Gullies are provided at a minimum rate of one gully per 200m²’.

According to the Civil Design Report ‘The two proposed soakaways are proposed to discharge surface water run-off from the site directly into the ground. The soakaways have been designed according to BRE Digest 365 and TII publications: Design of Soakaways’. The soakaway design calculations are included in Appendix B of the Civil Design Report.

‘A class 1 petrol/oil interceptor is required to be installed before the southern soakaway capable of accommodating a peak flowrate of 150 l/s for this network. A Klargestor Bypass Separator NSBE015 or similar approved is recommended for the South soakaway. A class 1 petrol/oil interceptor is also required to be installed before the Northern soakaway capable of accommodating a peak flowrate of 45 l/s for this network. A Klargestor Bypass Separator NSBP004 or similar approved is recommended for the Northern soakaway’

In relation to flood risk, the overview provided in the Civil Design Report (Jennings O’Donovan & Partners, 2022) concludes the following: ‘According to the Sligo Flood Risk Map, there are no noted major flooding events in close proximity to the proposed site. Therefore, it can be determined that there are no risks of flooding of adjacent lands/schemes as a result of this proposed development. All available maps of the area for the proposed development including latest OPW maps have been reviewed’. The Catchment Flood Risk Assessment and Management (CFRAM) map for the Sligo area has also been included in Appendix F of the Civil Design Report.

The above measures robustly block any potential impact pathway between the proposed project any downstream EU designated sites during the operational phase.

5.2.1.3 Decommissioning

The proposed project is considered to be permanent. Therefore, no effects with regard to decommissioning are anticipated.