An Bord Pleanála

Inspector's Report ABP 320869-24

Development	Interim flood relief scheme to pump water from Lough Funshinagh and discharge to Cross River.
Location	Carrick, Co. Roscommon
Local Authority	Roscommon County Council
Type of Application	Application for approval made under Section 177 (AE) Planning and Development Act 2000 (local authority development requiring appropriate assessment).
Prescribed Bodies	Inland Fisheries Ireland DAU, Department of Housing, Local Government and Heritage
Observer	Rose Burke
Date of Site Inspection	03/12/24
Inspector	Pauline Fitzpatrick

Contents

1.0 Introduction

1.1. Roscommon County Council is seeking approval under Section 177AE of the Planning and Development Act, 2000, as amended, for an interim flood relief scheme to pump water from Lough Funshinagh and to discharge to Cross River in the townland of Carrick. Lough Funshinagh is a Special Area of Conservation.

1.2. Section 177AE of the Planning and Development Act 2000, as amended, requires that where an appropriate assessment is required in respect of development by a local authority, the authority shall prepare an NIS, and the development shall not be carried out unless the Board has approved the development with or without modifications. Section 177V of the Act requires that the appropriate assessment shall include a determination by the Board as to whether or not the proposed development would adversely affect the integrity of a European site, and the appropriate assessment shall be carried out by the Board before consent is given for the proposed development.

2.0 Proposed Development

2.1. The proposed scheme is located within and immediately to the southwest of Lough Funshinagh. The development corridor runs from the intake pipe within the lough south-westwards for approx. 2.7km to the outfall location on Cross River. The intake pump will be placed within the lough and connected to two diesel-powered hydraulic pump units located on a purpose built compound in an agricultural field near the edge of the lough. The overground pipeline will run through agricultural fields and traverse under 3 no. roads (R362, L2013 and a private access road adjacent to the R362) to the outfall point at Cross River.

2.2. The scheme consists of:

- Floating unit located within Lough Funshinagh, 25 metres from the shore, which will house two hydraulically driven submersible pumps with a series of removable fish screens,
- Floating pontoon to provide access from the shore to the pump unit,

- Compound (c. 1,150 sq.m. in area) on the lake shore to accommodate 2 no. hydraulic power units to provide power for the submersible pumps and 4 no. 3,000 litre diesel fuel tanks,
- 2,450 metre long overground pipe system from the floating pontoon to the outfall at Cross River consisting of 2 no. parallel 300mm diameter flexible hoses 2,135 metres long joined with a manifold to 315 metres of 500 mm diameter rigid pipe,
- Ducting of the flexible pipes under a private access road, under R362 regional road and under L2013 local road. The crossings will consist of 2 no. parallel 600mm diameter pipes,
- An outfall system to control the flow into Cross River consisting of a flow diffuser and rock armour.

2.3. The lough, a turlough historically known for its fluctuations in water level, fills during the winter months and drains in the summer with the extent of water levels varying according to climatic conditions. Flooding events have been happening on a continuous and seasonal basis since the extreme winter of 2009/2010 with the events worsening over time. The aim of the interim measures is to extract a sufficient volume of water from the lough that will mitigate the possible increase in level prior to developing a permanent scheme, and to limit peak water level to a level that will allow the flood risk to the properties around the lake to be successfully managed. The interim flood relief scheme will be in place for a period of 24 months. Pumping will be undertaken only when the water level in the lough is above 67.5mOD and at a flow rate not exceeding 300 litres per second (l/s)

2.4. The application is accompanied by:

- Cover Letter
- Project Overview Report
- Environmental Impact Assessment Screening Report
- Chief Executive's Order – EIA Screening Determination
- Construction Environmental Management Plan
- Archaeological Impact Assessment

- Screening for Appropriate Assessment and Natura Impact Statement
- Water Framework Directive Compliance Report
- Ecological Impact Assessment
- Engineering Report
- Drawings
- Copies of public notices and letters to prescribed bodies

3.0 Site Location and Description

3.1. Lough Funshinagh is located in the townlands of Ballagh, Carrick, Carrickbeg, Inchiroe, Gortfree, Kildruney, Lisfelim, Lysterfield and Rahara c.12km to the north-west of Athlone and is to the west of Lough Ree.

3.2. The proposed development is located within and immediately to the south-west of the lough. The lands in the vicinity are generally in agricultural use, largely used for grazing. The village of Curraghboy is c. 1.7km to the south-west of the lough with one off housing prevalent along the local road network.

3.3. The nearest accesses to the lough at its south-western end are via private access tracks off the R362. The northern most access track terminates at a two storey dwelling and associated farm buildings immediately to the west of the proposed onshore compound location. The southern access track would appear to have previously terminated near the original lough shore, but which is now blocked off with the final stretch of track underwater on day of inspection. This access serves two dwellings; two storey Carrick House and associated farm buildings and a newer, single storey dwelling to the north of same in proximity to other farm buildings. Both dwellings occupy localised elevated positions. The track also originally provided access to the above referenced 2 storey dwelling which is served by the northern access.

3.4. The lands to the west and south which the pipe route is to cross from the proposed outfall location are low lying with water at surface level noted throughout. A series of drains full of water were noted on the lands immediately to the north of Carrick

House (other side of access track). The access track has been raised close to its junction with the R362, most likely to ensure access during flood events.

3.5. The route of the proposed pipe crosses regional road R362 and then runs parallel to field boundaries before crossing local road L2013 to the north-west of Curraghboy village. It then runs alongside a number of field boundaries to the proposed outfall location at Cross River.

4.0 Planning History

4.1. I am not aware of any previous planning applications on the site.

5.0 Legislative and Policy Context

5.1. Relevant legislative provisions

5.1.1. **The EU Habitats Directive (92/43/EEC):** This Directive deals with the Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union. Article 6(3) and 6(4) require an appropriate assessment of the likely significant effects of a proposed development on its own and in combination with other plans and projects which may have an effect on a European Site (SAC or SPA).

5.1.2. **European Communities (Birds and Natural Habitats) Regulations 2011:** These Regulations consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in CJEU judgements. The Regulations in particular require in Reg 42(21) that where an appropriate assessment has already been carried out by a 'first' public authority for the same project (under a separate code of legislation) then a 'second' public authority considering that project for appropriate assessment under its own code of legislation is required to take account of the appropriate assessment of the first authority.

5.1.3. **National nature conservation designations:** The Department of Culture, Heritage and the Gaeltacht and the National Parks and Wildlife Service are responsible for the designation of conservation sites throughout the country. The three main types of designation are Natural Heritage Areas (NHA), Special Areas of Conservation

(SACs) and Special Protection Areas (SPAs) and the latter two form part of the European Natura 2000 Network.

Lough Funshinagh is a SAC

5.1.4. **EU Water Framework Directive (2000/60/EC) as amended**: This Directive established a legislative framework for the protection of all waters (incl. rivers, lakes, estuaries, coastal waters and groundwater) and their dependent wildlife and habitats. It requires member states to protect and improve water quality in all waters so that they achieve good ecological status by 2015 (extended to 2027). It requires the preparation and regular review of River Basin Management Plans.

5.1.5. **EU Directive on the Assessment and Management of Flood Risks (2007/60/EC)**: was transposed into Irish law under SI No.122 of 2010, and it requires Member States to assess watercourses and coastlines at risk from flooding, to map flood extent, assets and humans at risk, and to take adequate measures to reduce this flood risk. Implementation is being co-ordinated with the EU Water Framework Directive and the current River Basin Management Plans by the OPW.

5.1.6. **Planning and Development Acts 2000 (as amended):** Part XAB of the Planning and Development Acts 2000-2017 sets out the requirements for the appropriate assessment of developments which could have an effect on a European site or its conservation objectives.

- 177(AE) sets out the requirements for the appropriate assessment of developments carried out by or on behalf of local authorities.
- Section 177(AE) (1) requires a local authority to prepare, or cause to be prepared, a Natura impact statement in respect of the proposed development.
- Section 177(AE) (2) states that a proposed development in respect of which an appropriate assessment is required shall not be carried out unless the Board has approved it with or without modifications.
- Section 177(AE) (3) states that where a natura impact assessment has been prepared pursuant to subsection (1), the local authority shall apply to the Board for approval and the provisions of Part XAB shall apply to the carrying out of the appropriate assessment.

- Section 177(V) (3) states that a competent authority shall give consent for a proposed development only after having determined that the proposed development shall not adversely affect the integrity of a European site.
- Section 177AE (6) (a) states that before making a decision in respect of a proposed development the Board shall consider the NIS, any submissions or observations received and any other information relating to:
    - The likely effects on the environment.
    - The likely consequences for the proper planning and sustainable development of the area.
    - The likely significant effects on a European site.

5.2. Policy and Guidelines of Relevance

National Policy

5.2.1. **National Planning Framework, 2018-2040**: This plan sets out a high-level strategic plan for shaping the future growth and development to 2040. It seeks to develop a region-focused strategy to manage growth and environmentally focused planning at a local level. Note: Draft Revised NPF published November 2024

5.2.2. **National Development Plan, 2021-2030**: This plan underpins the National Planning Framework 2018-2040, and it sets a framework for investment priorities which includes expenditure commitments to secure a wider range of Strategic Investment Priorities. Under Strategic Outcome 8 (Transition to a Low Carbon & Climate Resilient Society) it allocated c.€940 million to flood defences and outlined several investment actions relating to flood risk management. The National Adaptation Framework (Planning for a Climate Resilient Ireland) seeks to address current and future risks associated with climate change.

5.2.3. **Climate Action Plan 2024**: This plan seeks to tackle climate breakdown and achieve net zero greenhouse gas emissions by 2050. It identifies several risks as a result of climate change including rising sea-levels, extreme weather, further pressure on water resources and food production systems, and increased chance and scale of river and coastal flooding.

5.2.4. **Flood Risk Management Climate Change Sectoral Adaptation Plan, 2018**: This plan considers the impacts of climate change on flooding and flood risk as well as on flood risk management. It sets out a long-term goal for adaptation in flood risk management, along with a set of objectives and adaptation actions aimed at achieving those objectives. 21 no. adaptation actions have been identified under each adaptation objective across the areas of activity in flood risk prevention, protection and preparedness and resilience, as well as in further research and capacity building.

5.2.5. **Strategic Flood Risk Assessment Report – Ireland 2040**: undertook a Strategic Flood Risk Assessment of the National Policy Objectives (NPO) within the Ireland 2040 Our Plan – National Planning Framework.

5.2.6. **River Basin Management Plan for Ireland 2022-2027**: has been published under the WFD and is the third cycle of such plans for Ireland. It seeks to protect, improve and sustainably manage the water environment to achieve good water quality in rivers, lakes, estuaries & seas.

5.2.7. **National Flood Policy, 2004**: builds on the Arterial Drainage (Amendment) Act 1995 which permits the OPW to implement localised flood relief schemes to co-ordinate the management of flood risk in Ireland.

5.2.8. **The Planning System and Flood Risk Management, 2009**: seek to avoid inappropriate development in areas at risk of flooding and avoid new developments increasing flood risk elsewhere. They advocate a sequential approach to risk assessment and a justification test.

5.2.9. **National Biodiversity Action Plan, 2024**: sets out actions through which a range of government, civil & private sectors will undertake to achieve Ireland's 'Vision for Biodiversity' and follows on from the work of the previous National Biodiversity Action Plans. It lays out a framework for Ireland's national approach to biodiversity, ensuring that efforts and achievements of the past are built upon, while looking ahead to what can be achieved over the next five years and beyond.

Regional Policy

5.2.10. **Northern and Western Regional Spatial and Economic Strategy 2020**

The RSES supports the delivery of the programme for change set out in the National Planning Framework and the National Development Plan. It sets out a strategic vision and policy objectives for urban and rural areas, people, the economy, the environment, connectivity, amenities and utilities, and it contains a number of Regional Policy Objectives (RPOs) which deal with the compliance with the objectives of the Water Framework Directive, protection and improvement of all waters, and to prioritise investment to reduce the risk of flooding in the urban and rural environment.

Local Policy

5.2.11. **Roscommon County Development Plan 2022**

Policy Objectives ITC 7.51 to ITC 7.56 relate to flooding and flood risk. Of note:

ITC 7.53 – protect and enhance the county's turloughs, lake/river floodplain and wetlands as strategically important green infrastructure which provides space for storage and conveyance of floodwater and enables flood risk to be more effectively managed, subject to normal planning and environmental criteria.

ITC 7.54 – ensure that where flood risk management works take place that the natural and cultural heritage, rivers, streams and watercourses are protected and enhanced.

ITC 7.55 – support the implementation of recommendations in the CFRAM Programme to ensure that flood risk management policies and infrastructure are progressively implemented.

ITC 7.56 – ensure each flood risk management activity is examined to determine actions required to embed and provide for effective climate change adaptation as set out in the *OPW Climate Change Sectoral Adaption for Flood Risk Management* applicable at the time

6.0 Natura Impact Statement

6.1. Roscommon County Council's application for the proposed development is accompanied by a Natura Impact Statement (NIS) which scientifically examines the proposed development and the European Sites. The NIS identifies and characterises the possible implications of the proposed development on the European sites, in view of the site's conservation objectives, and provides information to enable the Board to carry out an appropriate assessment of the proposed works.

6.2. The document provides an overview of the proposed development, the methodology used in its preparation, a screening assessment and the impact statement. It is accompanied by a series of appendices including results of baseline surveys, an ecological impact assessment report, a CEMP and a monitoring report.

7.0 Consultations

7.1. Consultees Circulated

The application was circulated to the following:

- Department of Agriculture, Food and Marine
- DAU, Department of Housing, Local Government and Heritage
- Department of Environment, Climate and Communications
- Inland Fisheries Ireland
- Office of Public Works
- Waterways Ireland
- The Heritage Council
- An Chomhairle Ealaíon
- Fáilte Ireland
- An Taisce
- North West Regional Assembly

- Environmental Protection Agency
- Health Service Executive
- Uisce Eireann

7.2. Reponses Received from Consultees

Responses were received from the following bodies:

7.2.1. Development Applications Unit, Department of Housing, Local Government and Heritage

The submission can be summarised as follows:

Archaeology

- Broadly in agreement with the findings of the Archaeological Impact Assessment.
- Conditions recommended.

Nature Conservation

- A hedgerow restoration plan should be required by way of condition.
- Recommended amendments to the proposed mammal crossing points replacing the proposed 300mm diameter pipes with 600mm diameter pipes consistent with those used in road scheme. Location and spacing of the crossing points to be informed by pre-construction surveys.
- Required continual presence of Ecological Clerk of Works.
- There is no statutory basis on which the NPWS can agree any plans such as environmental management plans, methods statements or similar documents after consent has been granted. Section 7.0 of the Development Management Guidelines for PA's referenced.

7.2.2. Inland Fisheries Ireland

The submission can be summarised as follows:

- It notes that that the Aquatic and Electrofishing survey was carried out under time constraints due to the emergency nature of the proposed operation and

during very low water levels. The distribution of fish, including trout within the Cross River system, would extend further upstream in times of higher water levels and particularly in winter months.

- Cross River is a renowned wild brown trout fishery, with good salmonid habitat found downstream of the outfall location. Salmon have been found in the lower reaches of Cross River in past surveys. The river also holds stocks of bream, roach, hybrids, perch, lamprey and crayfish.
- It is in agreement with the proposed weekly water quality sampling for both the lake and river. Parameters should be as per those tested on 12/08/24 with Total Phosphorus also analysed for Cross River. There should be an added focus on chlorophyll and algal cyanobacterial analysis in the lake, both mid lake and marginal samples. Monitoring results to be made available to IFI once the project is operational.
- Algae noted along the lake's shoreline. It recommends consideration of sand filtration, UV and submerged intake pipes to increased depths with lower light penetration levels. A combination of these or other proven technology would be effective to reduce the risk of transfer of algae and cyanobacteria from the lake to the river.
- Important to continue to survey for the presence of invasive species in the lake. If any found that do not exist in Cross River measures to be introduced to prevent potential transfer. This to be done quarterly.
- It is imperative that no erosion is allowed to take place at the point of river outfall. Rock armour should extend to the proposed high water mark at this location. The length of rock armour required will be dictated by the potential for bank erosion downstream and the rock armour must be extended sufficiently to prevent this. It has concerns that the geotextile alone may not be strong enough to protect the riverbed at the outfall over time. It recommends the use of natural stone material rather than artificial flags to prevent scour of riverbed at this location. It should be embedded slightly below existing bed level.
- The outfall location and arrangement should be reviewed regularly to inspect for erosion and introduce remedial measures if required.

- Following cessation of pumping the rock armour at the outfall should be left in place.
- Review of operation of the screens and intake once pumping has commenced.
- Recommends that once the initial levels have been reduced to prevent immediate flooding, the schedule of pumping for maintenance of lake levels in future seasons could be programmed to reduce the risk of potential impacts.
- The volume of water being pumped to Cross River would be expected to have the largest impact in the upper reaches of the river at times of low flow. Pumping rates should be reduced at times of low flow to minimise any potential impacts. This could be managed using the flow gauges to be installed.
- Amendments recommended to CEMP including concrete berm to compound and provision of a location for concrete chute washout at least 15 metres from the nearest watercourse.
- Method statements to be agreed for elements of works including outfall construction, OPW gauge installation, works in the lake, compound and concrete berm construction and instream and/or lake restoration works following end of the scheme.
- All works to adhere with IFI's guidelines.
- Benefits in forming an Environmental Working Group made up of relevant agencies to consider water quality information and other environmental aspects of the operation.

7.3. Public Submissions

1 no. submission was received from Rose Burke, BScEng CEng. The submission, which makes detailed reference to OS and historical documents, can be summarised as follows:

- Neither historical nor evidence on the ground exists to support the claim that Lough Funshinagh is filled predominantly by surface rather than groundwater,

or that surface inflows to the lake include 6 no. surface water streams located on the northern and western shores of the lake

- Streams labelled 2, 3, 4 and 5 are drains. Those numbered nos.1 and 6 could not be located.
- Drains 2 and 4 are the only drains that reach the lake. They are not the primary filling mechanism for the turlough. For centuries the lake filled without assistance from any artificial drains.
- There is no evidence to support the statement that the turlough essentially behaves more as a backed up swallow hole than a typical groundwater fed turlough. Lough Funshinagh is not a lake or a vanishing lake. It is a turlough dependent on groundwater.
- If it is not a real turlough why is it designated as a priority habitat under Annex 1 of the EU Habitats Direction and protected under the EU Water Framework Directive as a 'Groundwater Dependent Terrestrial Ecosystem'.
- Lough Funshinagh would appear to be an outlier regarding the effects of the mid-19th century arterial drainage schemes. Rather than being deprived of groundwater the lough was the receptor of groundwater channelled through the drainage network created c.1846-1884. This increase in groundwater was not beneficial to the turlough. Lough Funshinagh continued to fill in the manner it always had pre the drainage works but now land drainage and flood areas, remote from the turlough, springs and sinking streams are collected in the new drains and discharged into the turlough. At the NW corner of Lough Funshinagh, the drainage network extends westward for over 3.5km. Groundwater from the moderately permeable sub-soil to the west was now able to flow directly into Lough Funshinagh. Today, the drainage network continues to discharge into the turlough. When the net rate of inflow exceeds the net rate of outflow the turlough expands and floods low lying areas.
- The turlough used to reset after events. With the increased head of water it managed to find a release route. A local person living near the swallow hole said the sound of flowing water could be heard when the reset occurred. As long as the turlough had that release valve flooding was not going to occur.

- The Technical Subgroup have been misinformed if their understanding is that the first recorded instance of significant flooding around Lough Funshinagh occurred in 2016. Historical events detailed.
- Boreholes are a concern. They are conduits to act as and create preferential pathways, for groundwater and contaminant movement. The borehole drilling by GSI since the late 1990s cannot be ignored as a factor in the turlough's failure to reset and the shift in its behaviour.
- The boreholes must be decommissioned in accordance with Scottish EPA guidelines.
- By the summer of 2012 the agencies responsible should have been seriously concerned about the situation in Lough Funshinagh to take preventative action. There was overwhelming evidence that the turlough was in serious trouble. With a few exceptions the top of water level in the summer of 2012 exceeded the spring top of water levels of the past sixty years.
- The narrative that the extreme rainfall events of the previous few years was the sole cause of the crisis is not correct or accepted.
- The details given on Cross River are incorrect. It rises from a spring in the townland of Gortnasythe c. 3.7km south east of Lough Funshinagh.
- It is unclear how the entire Cross Drain could be mistaken for a natural watercourse. The straight lines and obtuse angles are not characteristic of a natural watercourse.
- The implication that the farming community and other community groups are responsible for the poor water quality of Lough Funshinagh is incorrect. The blame lies with the agencies charged with its protection who do not understand the hydrology of the turlough.
- The temporary pipeline must be installed as soon as possible with careful monitoring at significantly more locations than proposed in the application. Key areas such as at the confluence of the Corkip drain, the Cross drain and the Cross River need careful attention.
- The permanent pipeline should be reviewed by a panel of experts.

7.4. Applicant's Response to Submissions

The response can be summarised as follows:

Inland Fisheries Ireland

- The seasonal distribution of fish populations within the Cross River is noted. This does not materially impact on any of the design measures or impact assessments completed for the scheme. The proposed operation and mitigation have been designed on the precautionary principle that both trout and brook lamprey are, or could be present, within the entire Cross River.
- Appendix J of the AA/ NIS outlines the water quality monitoring strategy to be undertaken on a weekly basis during the operational phase. All parameters identified in 12/08/24 tests will be monitored.
- Pre-works baseline water quality samples (monthly) will be collected in deeper water at the intake location which will be approximately 25m from the water's edge.
- Pre-works algal (species) samples will be collected (monthly) from the vicinity of the intake location. Three separate samples will be taken: a sub-surface sample at 10cm below the water surface, a sample at the proposed intake depth (800mm below the surface) and a bottom water sample. This sampling approach will help inform any variation in algal species and/or densities within the water column. Complementary chlorophyll A (Chla) samples will also be collected at corresponding depths.
- During operation, the weekly sampling programme will include samples from the edge of the pontoon in the deeper water at the intake structure approximately 25m offshore, to represent the mid lake water regime. Algae (inc. cyanobacteria) will be monitored visually on a weekly basis to check for development of any algal mat occurrence. Algal (species) samples will be collected monthly.
- Algal, Chla and water quality data will be reviewed and shared with IFI. An adaptive monitoring and mitigation approach will be taken where required.

- The pump intake design was developed in consultation with IFI. As the design of the system has evolved, the intake depth has more than doubled, and the intake pipe is now 800mm below surface, at a location in the water column which will have significantly lower light penetration levels. The pump will draw water horizontally and will not give rise to noticeable vertical water movement, minimising impacts on the water near the surface of the turlough. Other water treatment technologies have been considered. It was concluded that using and monitoring sand filtration and UV treatment systems would be significantly more complex, liable to malfunction, and ultimately unsatisfactory and unsuitable for this application. The intake point will be monitored daily for any evidence of algae, including cyanobacteria.
- Monitoring and review of the screen and intake to be carried out.
- The potential to spread algae, including cyanobacteria has been considered in the proposed pumping operation. Algae species blooming within the lentic lake environment are unlikely to thrive in the lotic Cross River. It is noted that the upper reaches of Cross River, i.e. in the vicinity of the discharge location, can be characterised by low flow velocity and stagnation (particularly in periods of low flow) and so there may be a risk of blooms when in periods of non-pumping. It is anticipated based on modelling, that pumping will be continuous and so periods of no flow in the Cross River would be rare.
- Quarterly monitoring of aquatic invasive species in Lough Funshinagh will be undertaken by the Project Ecologist.
- The CEMP will be a live document and will be updated to include the inspections for evidence of siltation. Effective settlement measures will be implemented, as required, based on inspection results. It will be updated to include IFI's requirements relating to concrete use.
- Rock armour at the outfall will be installed to a height of 300mm above the predicted 100-year return period flood level.
- The outfall is fitted with a diffuser which is intended to distribute the pumped flows through multiple openings. Any concentrations of flow/velocity at the outfall will occur within the extent of the rock armour and the intention is that the flow will be uniformly distributed across the channel before discharging to

the unprotected channel. The length of the rock armour has been designed to account for the potential erosion to the bank for the flow through diffuser openings in accordance with the TII Design Standard, DN-DNG-03071, June 2015. Further downstream, the energy threshold is high under natural flow, and the additional pumped flow does not change the energy threshold and associated erosive power significantly.

- In terms of protection of the riverbed it is confirmed that natural stone flags will be laid on geotextile at bed level with the leading and trailing flags sloped down so that they are embedded into and level with the existing channel.
- The daily inspection of the outfall location will include inspection for erosion. If required relevant mitigation measures will be implemented.
- The rock armour may remain in place upon decommissioning, with the agreement of relevant stakeholders.
- It is intended that pumping will be continuous as long as the water level in Lough Funshinagh is above 67.50mOD. The only exceptions to this are (1) when there is essential maintenance of the pumps, and (2) when there are high flows in Cross River. Once the turlough approaches a level of 67.50mOD, a gradual pump shutdown will be planned in advance such that there will be appropriate flows in Cross River at the time of shutdown
- The civil engineering contractor will develop detailed Method Statements in consultation with IFI, based on those included in the Engineering Report.
- The CEMP will be updated to state that the Guidelines on 'Protection of Fisheries during Construction Works In and Adjacent to Waters' will be adhered to.
- Agree to daily checks of plant, machinery and fuel lines.
- The Local Authority would be happy to include IFI in the existing expert working group for the project.

Department of Housing, Local Government and Heritage

- The CEMP will include the location of all archaeological or cultural heritage constraints relevant to the proposed development. Table 2 in the CEMP

highlights the potential impacts to archaeological heritage and the mitigation measures to be implemented in the construction phase.

- A project archaeologist will advise on the necessary aspects of the scheme as the need arises during construction, operation and decommissioning.
- A Hedgerow Restoration Plan will be developed.
- The width of the pipes for the badger crossing points will be revised in the CEMP to specify 600 mm diameter as opposed to 300 mm as previously stated.
- The text in the CEMP will be amended to reflect the requirement for determining the areas of badger access and activity in terms of a pre-construction survey.

Rose Burke

- Many of the channels in the region were cut and deepened as part of arterial drainage works over time. Whether water features are termed ‘streams’ or ‘drains’ they function as the filling mechanism of Lough Funshinagh, and it does not materially affect the scheme design or assessment.
- It appears that the streams/drains function to lower the water-table to improve land drainage, and this water is then discharged directly to the turlough via the streams/drains. So, it is not incorrect to state the lake is fed by surface water. There may also be some groundwater contribution to the lake as baseflow. This is not excluded. It is not material to the assessment and operation of the proposed scheme.
- The hydrology of the turlough will certainly have been influenced by arterial drainage works and the increase in surface water inflows, without any increase in discharge to the swallow holes, will have resulted in an increase in the turlough storage and size. However, this activity significantly predates the monitoring data upon which the modelling and impact assessment is based and, while it is important as a historical context, it is not material to the operation and assessment of the proposed scheme.
- The key factors being communicated in the Conceptual Site Model are that the lake is in hydraulic connection with the regional water table but that there

may be some limitation to that connection due to the underlying low permeability lacustrine sediments and, as a result, the lake remains flooded long after other turloughs in the area have drained.

- Groundwater flow through the epikarst here is not crucial in terms of the persistent flooding dynamics (the swallow hole is the key karst feature in that regard) and, as the epikarst is typically only a few metres thick, at the scale of the CSM would be negligible.
- The location of specific conduits is not known. They are not included as it would suggest a level of knowledge/detail which has not been established.
- The Engineering Report takes due consideration of the geology in this region insofar as it is relevant to the design of the interim scheme. The hydrological analyses were undertaken in accordance with the latest tools available for flood estimation in Ireland. The methodology adopted for flood estimation is based on regression equations which specifically take account of drainage characteristics of the study region. Furthermore, the flow estimates for Cross River were calibrated against the recorded flows on the EPA operated gauge in Summerhill.
- Extensive topographical surveys in this area have been carried out to provide a detailed understanding of the topography and flow paths. This has enabled the design team to confirm that a flow path exists from Lough Funshinagh to the area of land referred to in Carrick/Lysterfield once the flood level reaches approximately 69.30mOD. Furthermore, local authority staff have completed numerous site walkovers and witnessed this flooding mechanism in April 2024. There is no uncertainty in this regard.
- 2016 is the first recorded instance of properties being flooded by the turlough. The scheme is focused on mitigating flood risks in the area over the two year operational period of the scheme.
- While other factors cannot be ruled out, the modelling work presents significant evidence that increased rainfall is the primary driver of increased flooding at Lough Funshinagh.

- As outlined in the engineering report, in the event of high flows in Cross River, the pumps will be shut down with a protocol to be put in place.
- The aim of the WFD assessment is to document the baseline water quality in Lough Funshinagh and highlight potential pressures impacting water quality. The EPA identifies agriculture as a significant pressure on the catchment.
- Uisce Eireann records that the Lisbrock Water Treatment plant uses a groundwater source. Although there is likely a groundwater link between Lough Funshinagh and Lisbrock, it is not relevant to the interim flood relief scheme. The interim scheme involves pumping water to Cross River. Once the pumped water enters the river it will flow along the channel before entering the River Shannon. Any flow which may be lost to ground along this watercourse will be minimal and negligible in the context of Lisbrock Water Treatment Plant, and there is no associated risk to drinking water quality.
- The GSI groundwater borehole database is a compilation of borehole information submitted by a range of external organisations. GSI did not drill the boreholes referred to, nor is it responsible for their management. Boreholes are not a concern with regard to groundwater flooding. The risk of disturbing groundwater flow paths in the karst environment surrounding Lough Funshinagh by drilling a borehole is negligible.

8.0 **EIA Screening**

8.1. Having regard to the provisions of Schedule 5 of the Planning and Development Regulations, 2001, I note the following:

Part 1,

8.2. *(11) Groundwater abstraction or artificial groundwater recharge schemes, where the annual volume of water abstracted or recharged is equivalent to or exceeds 10 million cubic metres.*

8.2.1. The proposed development comprises the abstraction of water that is above the surface. The scheme does not come within this project class.

8.3. *12(a) Works for the transfer of water resources between river basins, where this transfer aims at preventing possible shortages of water and where the amount of water transferred exceeds 100 million cubic metres per year.*

12 (b) In all other cases, works for the transfer of water resources between river basins, where the multi-annual average flow of the basin of abstraction exceeds 2,000 million cubic metres per year and where the amount of water transferred exceeds 5 per cent of this flow.

8.3.1. Lough Funshinagh and Carrick River are within the same river basin. The scheme does not come within this project class.

Part 2

8.4. *1 (c) Development consisting of the carrying out of drainage and/or reclamation of wetlands where more than 2 hectares of wetlands would be affected.*

8.4.1. As per Article 5 (1) of the P & D Regulations wetlands is defined as 'natural or artificial areas where biogeochemical functions depend notably on constant or periodic shallow inundation or saturation by standing or flowing fresh, brackish or saline water'.

8.4.2. Section 2 of the Identification Guide and Field Survey Manual for Irish Wetland Types[1] states that turloughs should be considered wetlands. On this basis Lough Funshinagh can be considered a wetland. As the aim of the proposed works is to pump water from the lough to address flooding of adjoining lands when the lough level exceeds 67.5mOD which is materially above the historical natural turlough level, it will not result in draining the wetland. On this basis I submit that the scheme does not come within this project class.

8.5. *(10)(f)(ii) Canalisation and flood relief works, where the immediate contributing sub-catchment of the proposed works (i.e. the difference between the contributing catchments at the upper and lower extent of the works) would exceed 100 hectares or where more than 2 hectares of wetland would be affected or where the length of river channel on which works are proposed would be greater than 2 kilometres.*

8.5.1. I refer to the definition of wetland as detailed above.

[1] Irish Ramsar Wetlands Committee, 2018

8.5.2. The proposed development consists of flood relief works. The threshold for wetlands and the length of river channel on which works are proposed are not exceeded. Given the localised nature of the works at Lough Funshinagh and the established groundwater link between the lough and Cross River within the same catchment the contributing catchment threshold is not exceeded. The project, whilst not meeting the stated parameters, could be considered subthreshold for this class of project.

8.5.3. 10(j) Installation of overground aqueducts which would have a diameter of 1,000 millimetres or more and a length of 500 metres or more.

8.5.4. There is no definition of aqueduct in the Planning and Development Regulations or EU Directive. In summary an aqueduct can be defined as a conduit for conducting water. The term is used for any system of pipes, ditches, canals, tunnels and other structures used for this purpose. The project comprises of two pipes 300mm diameter pipes with a length of approx. 2,130 metres from the lough to a point 160 metres south of the L21013 road followed by a single 500mm diameter pipe 320 metres in length to the outfall pipe. The project, whilst not meeting both parameters of the threshold (pipe diameter and distance), could be considered subthreshold for this class of project.

8.6. *(10)(I) Groundwater abstraction and artificial groundwater recharge schemes not included in Part 1 of this Schedule where the average annual volume of water abstracted or recharged would exceed 2 million cubic metres.*

8.6.1. The proposed development comprises the abstraction of water that is above the surface. The scheme does not come within this project class.

(10)(m) Works for the transfer of water resources between river basins not included in Part 1 of this Schedule where the annual volume of water abstracted or recharged would exceed 2 million cubic metres.

Lough Funshinagh and Carrick River are within the same river basin. The scheme does not come within this project class.

8.7. *EIA Screening - Conclusion*

8.7.1. On the basis of the above I submit that the development is of a class of project, but subthreshold, namely flood relief scheme (Part 2 10(f) (ii)) and aqueduct (Part 2 10(j)).

8.7.2. Schedule 7A Information is provided in the Environmental Impact Assessment Screening report and I refer to the screening determination in the Appendix attached to this report. I conclude that there is no real likelihood of significant effects on the environment and, therefore, an EIAR is not required.

9.0 Assessment

The assessment will be undertaken in three parts as per the requirements of Section 177AE as follows:

- The likely consequences for the proper planning and sustainable development of the area
- The likely effects on the environment
- The likely significant effects on European Sites

9.1. The likely consequences for the proper planning and sustainable development of the area

Principle and Need for Proposed Development

9.1.1. Lough Funshinagh, a turlough historically known for its fluctuations in water levels, fills during the winter months and drains in the summer with the extent of water levels varying according to climatic conditions. Analysis indicates that the lake is surface water fed, mainly from 6 no. stream streams located on the northern and western shores of the lake and, as there are no outflowing rivers or streams, it discharges to ground.

9.1.2. There have been a number of flood events where the lake's water levels have risen beyond historical records. Since the severe weather events in the winters of 2015/2016 the lough has exceeded its previous maximum water levels four times during separate winters requiring Roscommon County Council to raise roads at three locations to maintain access and implement continuous over-pumping to protect residential and agricultural properties. In its analysis the Lough Funshinagh Technical Subgroup (consisting of experts from GSI, NPWS, Trinity College and South East Technological University) considers that there has been a substantial

shift in the hydrological operation at the lake post the 2016 flood event towards higher flood levels. I refer the Board to the two reports in Appendix A of the Engineering Report.

9.1.3. The winter of 2023/2024 again saw a significant flooding event with inundation of an estimated 500 hectares of land. During this period the lake overtopped the hill at its southwest corner in the townland of Carrick and flowed into a nearby depression adjacent to R362 regional road. To date two properties have been made unhabitable by the flood waters with Roscommon County Council providing flood defences for 8 no. dwellings and maintaining access to 2 no. properties at risk.

9.1.4. In brief, the flooding events and its effects have worsened over time and, at this juncture, have fundamentally changed the physical extent of the lake. As recorded on the 1891 OS 25" map the lake had a level of 63.89mOD. The level has increased from 67.00mOD in 2009 to 69.37mOD on 16/04/24. As per the GSI onsite gauge the water level at the lake on 16/09/24 was 68.23mOD which is the highest water level recorded for the lake at this time of year, a period when the lake is normally at its lowest level.

9.1.5. Analysis undertaken in May/June 2024 indicates that the natural flow path for water overtopping Lough Funshinagh at its south-west corner would be in a southerly direction through the village of Curraghboy. Water would then continue to flow southwards to Cross River which is approx. 500 metres south of the village. Cross River is located c.2.5 km southwest of Lough Funshinagh and flows downstream for c. 22km until it discharges into the River Shannon, c. 2km south of Athlone, Co. Westmeath. Based on previous records consultants estimate that there is a high probability that the lake could reach a level of 69.60mOD by spring 2025. There is also a medium probability that the lake could rise to 69.95mOD which would cause flooding in the village of Curraghboy at an average rate of 600 litres per second.

9.1.6. The applicant gives a detailed response to the submission by Rose Burke. Ms Burkes' submission contests the details provided with the application pertaining to the turlough dynamics and flooding. The applicant in its response reiterates that watercourses function as the filling mechanism for the lough with many having been cut and deepened as part of arterial drainage works over time. The applicant also refutes what Ms. Burke considers to be shortcomings in the Conceptual Site Model.

It acknowledges that the model is a simplification of reality whose purpose is to communicate the pertinent aspects of the hydrogeological setting and is considered appropriate. It also reiterates that the hydrogeological modelling undertaken by the technical subgroup presents significant evidence that increased rainfall is the primary driver of increased flooding at the lake. It also states that the risk of disturbing groundwater flow paths in the karst environment surrounding the lough by drilling boreholes is negligible and, whilst decommissioning of boreholes is good practice, it would not address groundwater flood.

9.1.7. I consider that the reports and documentation prepared in support of the application, including from the Lough Funshinagh Technical Sub Group, provide for a level of detail which allows for a proper assessment of the proposed development including an appropriate level of detail as to the mechanisms governing the flooding of the lough. As noted, the objective of the proposed development is to address the flood risk until a permanent solution has been developed, only, and that no alterations/modifications to drainage into the lough is proposed. Thus, the historical review of drainage works as provided is noted and, whilst useful in terms of historical context, is not material to the assessment and operation of the proposed scheme before the Board for assessment. I note that Ms. Burke has no objection to the proposed development and recommends the implementation of the scheme as a matter of urgency.

9.1.8. The aim of the interim measures is to extract a sufficient volume of water from the lough so as to limit the peak water level over the short term to a level that will allow the flood risk to properties in the vicinity of the lough, including the village of Curraghboy, to be successfully managed. The interim pumping system proposed will broadly replicate the overflow mechanism and flow path which is predicted could occur in the near future. It is proposed for the period covering the design and implementation of a permanent scheme.

9.1.9. Pumping is proposed for a period of up to 24 months to be undertaken only when the water level in the lough exceeds 67.5mOD. Pumping rates will be adjusted based on the receiving Cross River flow conditions. The rationale for selecting a level of 67.50mOD is that this is above the pre-2016 ‘normal’ maximum flood level indicated by the Lough Funshinagh Technical Subgroup (2024) and GSI (2016) and I refer the Board to the two reports of the technical subgroup on the modelling and analysis of

the flood levels dated June and July 2024 included in Appendix A of the Engineering Report.

9.1.10. The maximum flow rate of 300 l/s was determined following modelling of a range of pumping regimes so as not to have negative effects on the topography or riparian zone of Cross River or impact on the downstream lands or community. It is half of the calculated average net overflow rate of 619 l/s and would provide a significant reduction to the uncontrolled rates and volumes.

9.1.11. The intake pump system will be placed within the lough and connected to two diesel-powered hydraulic pump units (HPUs) located in a purpose built compound in an agricultural field near the edge of the lough. The design and location of the compound has been chosen to eliminate the risk of inundation of the tanks and pumping machinery with all plant and machinery to be above the peak flood height of March 2024 69.37mOD. The compound will be constructed without excavating the existing ground. The overground pipeline will run through agricultural fields and traverse under 3 no. roads (R362, L2013 and a private access road adjacent to the R362) to the outfall point at Cross River.

9.1.12. Once in place the interim scheme will be monitored with a focus on water levels at the lake shore. Currently, hourly readings of the lough's water level are being recorded and monitored daily by GSI. The pumping control system will be remotely monitored by Roscommon County Council and, if required, the pumping flow rates will be adjusted or shut off.

9.1.13. The flow in Cross River will be monitored at three locations by OPW hydrometric gauges at 15-minute intervals for the duration of the interim scheme. One location is an existing EPA flow gauge, Summerhill Station (26221), located approximately 13.7 km downstream from the pipeline outfall. An additional two hydrometric gauges will be installed and operated by the OPW, one at Curraghboy approximately 0.9 km downstream of the pipeline outfall and one at Atteagh approximately 5.2 km downstream of the pipeline outfall. Cross River flow rate will be monitored continuously. Should the trigger flows (2-year return period flow) be reached pumping would stop.

9.1.14. A permanent scheme comprising of transferring of water from the lough to Lough Ree is currently being investigated which, itself, would be subject to assessment and consent via the appropriate statutory processes.

9.1.15. I consider that the need for the project has been adequately demonstrated and its scope justified and, subject to compliance with development plan policy objective ITC 7.54 which seeks to ensure that where flood risk management works take place that the natural and cultural heritage, rivers, streams and watercourses are protected and enhanced, the principle of the development of acceptable. It would also be compatible, in principle with EU, national and regional land use, planning, environmental and climate change policy as set out in the documents summarised in sections 5.1 to 5.3 above.

9.1.16. A condition limiting the duration of the permission to the two year period as sought is considered appropriate in the interests of clarity.

Residential Amenity

9.1.17. The primary function of the proposed development is to protect both residential and agricultural lands and to safeguard public safety. I note that no observations from residents in the vicinity of the proposed development were received.

9.1.18. The effect of construction noise on sensitive receptors in the immediate vicinity of the site will be temporary due to the limited nature of the construction works with best practice construction methods to be employed. Construction hours are to be between 07:00 and 19:00, Monday to Friday, and 07:00 to 16:00 on Saturdays.

9.1.19. The operation of the proposed scheme will involve the use of diesel-hydraulic power packs within the onshore compound which are anticipated to generate noise levels of up to 76 dBA (at 7 m from the pump infrastructure). A 4 metre high solid noise barrier will surround the power packs, however their complete enclosure is not possible due to the operational ventilation and cooling requirements of the pumps. The nearest dwelling to the compound is approx. 35 metres to the west (within the same landholding).

9.1.20. The EIA Screening Report makes reference to a 3D model used to assess the potential impact on noise sensitive receptors with the embedded mitigation included (acoustic screen). Predicted noise levels show that there is the potential for adverse

noise impacts at the nearest receptor. The local authority proposes to offer alternative accommodation for the duration of the project should it be required. A copy of the results of the said model has not been provided with the application documentation

9.1.21. In view of the purpose of the proposed development, the wider public benefit and interim nature of the works, the temporary increase in noise levels at the nearest dwelling is acceptable and I consider that the matter of noise and placement of the said noise model on the file as part of the public record can be appropriately addressed by way of condition.

9.2. The likely effects on the environment

9.2.1. Having regard to the nature and scale of the proposed development, I consider that the main environmental effects to be assessed, other than those covered under appropriate assessment are as follows:

- Water Framework Directive
- Ecology and Biodiversity
- Cultural heritage

Water Framework Directive (WFD)

Overview

9.2.2. All new developments in Ireland that may have an impact on the water environment are required to comply with the objectives of the WFD, under the European Communities (Water Policy) Regulations 2003 S.I. No. 722/2003 (as amended). This includes ensuring that no changes occur that cause a deterioration of the ecological status of any water body, and that the development does not prevent the achievement of the future status objectives of any water body. Water body status deterioration can occur because of deterioration of any of the quality elements that make up the overall status (e.g. biological, physio-chemical, or hydromorphological elements for surface waters) even where this does not result in a lowering of overall water body status.

9.2.3. The application is accompanied by a Water Framework Directive Compliance Report prepared by Ove ARUP & Partners Ireland Ltd. on behalf of the applicant, Roscommon County Council. In summary, the report sets out the WFD assessment methodology, stage 1 screening, stage 2 scoping and stage 3 detailed assessment. It concludes that provided the mitigation measures identified in the report are incorporated into the construction methodology and final scheme design, the scheme is WFD compliant.

Stage 1 Screening

9.2.4. The proposed development is described in section 3.1 of the WFD Compliance Report and is as summarised in section 2 of this report.

9.2.5. The screening stage identified the groundwater waterbody, river waterbodies and protected areas which are hydrologically connected to the site.

9.2.6. Of those identified 1 no. waterbody - Shannon (Upper)_120 (site code IE_SH_26S021800) was screened out on the basis that its status would not be compromised having regard to the waterbody spatial scale, the nature and extent of the development and anticipated duration of the proposed development.

9.2.7. I note that the mitigation measures proposed for the construction phase of the development have been considered at the screening stage and comprise of best practice measures which are known to be effective, and which will prevent any impact to water bodies during the construction stage. I, therefore, screen out the construction phase from further assessment.

9.2.8. I agree with the conclusions of the stage 1 screening and the identified waterbodies brought forward to the Stage 2 Scoping.

9.2.9. The Board is advised that Lough Funshinagh is not a designated WFD lake waterbody.

Stage 2 Scoping

9.2.10. 4 no. WFD river water bodies, 1 no. WFD groundwater body and 7 no. protected areas were brought forward for scoping.

I note the following:

9.2.11. WFD Groundwater Body:

Code	Name	Description	Area (km2)	WFD Status 2016-2021	WFD Risk
IE_SH_G_091	Funshinagh	Karstic	565.28	Good	Not at risk

9.2.12. Having regard to the waterbody's spatial scale, the insignificant effect of the proposed development in terms of size and scale, and absence of in combination effects the WFD groundwater body was scoped out from further assessment.

9.2.13. Surface water bodies:

The length of Cross River is designated under the WFD as four WFD river waterbodies:

Code	Name	Area (km2)	WFD Status 2016-2021	WFD Risk
IE_SH_26C100060	CROSS (ROSSCOMMON)_010	42.7	Moderate	At risk
IE_SH_26C100200	CROSS (ROSSCOMMON)_020	37.4	Moderate	At risk
IE_SH_26C100300	IE_SH_26C100300	6.5	Moderate	At risk
IE_SH_26D100400	CROSS (ROSCOMMON)_040	13.9	Moderate	At risk

9.2.14. The proposed scheme has possible direct and indirect effects on the hydromorphological/physico-chemical supporting elements, biological quality elements and chemical status of the four WFD river water bodies.

9.2.15. Of the 7 no. protected area (European Sites) that are hydrologically connected the following 4 no. are scoped out

- River Shannon and River Fergus Estuaries SPA
- Lough Derg (Shannon) SPA
- Lough Derg North-east Shore SAC
- Lower River Shannon SAC

9.2.16. Having regard to the separation distances from the proposed development of in excess of 50km, I would concur with the conclusion that the conservation objectives of the said protected sites would not be compromised.

9.2.17. The following three protected sites were identified for further assessment

- Lough Funshinagh SAC
- The Middle Shannon Callows SPA
- River Shannon Callows SAC

Stages 1 and 2 – Screening and Scoping Conclusions

9.2.18. Based on my examination of the WFD Compliance Report and supporting information (including the Ecological Impact Assessment Report and NIS), the scale of the proposed development and likely effects, separation distances and functional relationship between the proposed works and the WFD waterbodies and Protected Sites, I conclude that a Stage 3 assessment is required for WFD waterbodies Cross River - IE_SH_26C100060, IE_SH_26C100200, IE_SH_26C100300 and IE_SH_26D100400 and 3 no. protected areas IE0000611, IE0004096 and IE0000216.

9.2.19. It is therefore reasonable to conclude on the basis of the information on the file, which I consider adequate in order to issue a screening and scoping determination, that the proposed development would not cause a deterioration of the ecological status and would not prevent the achievement of the future status objectives of Groundwater Body IE_SH_G_091, Waterbody IE_SH_26S021800 and Protected Areas IE0004077, IE0004058, IE0002241 and IE0002165, and that a stage 3 assessment is not required for same.

Stage 3 – Assessment

Overview

9.2.20. Section 5 of the report sets out a detailed assessment for Cross River (WFD river water bodies IE_SH_26C100060, IE_SH_26C100200, IE_SH_26C100300 and IE_SH_26D100400) and the 3 no. protected areas (European Sites) IE0000611, IE0004096 and IE0000216.

Cross River

9.2.21. In terms of the assessment of the WFD waterbodies, the headings as set out in Annex V of the WRD are followed and grouped as follows:

- Morphology: river depth and width; river bed structure
- Hydrology: quantity and dynamics of flow
- Physico-chemical supporting elements: Thermal conditions; Oxygenation; Salinity; Acidification; Nutrient conditions; and
- Biological quality elements: Phytoplankton; Macrophytes and phytobenthos; Benthic invertebrate fauna; Fish fauna.

9.2.22. Aquatic and water quality baseline assessments are based on samples at 7 no. locations along Cross River with 1 no. located upstream of the proposed outfall to act as a control. Site No.2 is at the proposed outfall location. This survey work is supplemented by EPA samples at 4 no. stations. The assessment of potential changes in hydrological processes in watercourses affected by the proposed scheme is underpinned by hydrological modelling, the methodology of which is set out in the Engineering Report accompanying the application. The modelling assesses the potential impacts that the proposed scheme would have on the hydrological function of Lough Funshinagh and Cross River. It informs the assessment and conclusions of the WFD Compliance Report.

9.2.23. The Board is advised that baseline samples for Lough Funshinagh are set out in Appendix B (titled *Water Quality Assessment for Cross River*).

Hydromorphology

9.2.24. Cross River has a length of approx. 20km rising from groundwater springs c. 2.8km south-west of Lough Funshinagh and discharging into the River Shannon c. 2.5km south of Athlone. The watercourse has been artificially straightened and re-sectioned for agricultural purposes and its natural lateral and longitudinal connectivity has been gradually reduced which has impacted the flow of water and sediments to downstream habitats as well as to surrounding peatlands.

9.2.25. The watercourse has a bed gradient of 0.1%, with the upper channel being steeper at a gradient of about 0.3% compared to the lower channel at a gradient of about 0.07%. Both are low gradients.

9.2.26. The current stream power for natural flow is 18.96W/m^2 at the outfall location increasing to 82.5W/m^2 further downstream. The potential energy expenditure with the proposed pumping at the outfall and midpoint is calculated to be 28.50W/m^2 which is below the 35W/m^2 high energy threshold for erosion. The proposed additional flow does not change the high energy threshold as recorded downstream with a change in potential expenditure with proposed pumping in the order of 3 W/m^2. The outfall is fitted with a diffuser which is intended to distribute the pumped flows through multiple openings. Any concentrations of flow/velocity at the outfall will occur within the extent of the rock armour and the intention is that the flow will be uniformly distributed across the channel before discharging to the unprotected channel.

9.2.27. In terms of river habitat the assessments undertaken indicate that the upper reaches of Cross River have been extensively modified (historically straightened and deepened), resulting in a channel with typically poor hydromorphology. Siltation and eutrophication pressures from adjoining agricultural land are a threat to biological water quality. Relatively low summer flows and natural bed calcification further reduced the quality of aquatic habitats in the upper reaches. The increase in water flows and volumes between survey sites Site 4 and Site 5, coupled with the retention of more natural characteristics in the middle and lower reaches (albeit still often deepened), resulted in better quality aquatic habitats which supported a number of high conservation value aquatic species.

9.2.28. Site assessment using the River Hydromorphology Assessment Technique (RHAT) methodology (NIEA10, 2014) suggests the river typology for the upper reaches of Cross River (i.e. above site 3) is ‘pool riffle glide’. This morphology is characterised by low to moderate gradient channel beds. Sediment is predominantly gravel, with patches of cobbles and sand. Flow types are made up of riffle sections interspersed with pools and glides. The lower reaches of the watercourse are ‘lowland meandering’, which is characterised by low to no gradient lowland streams with smooth flow and fine substrates.

Geohydrology and Hydrology

9.2.29. The water depth at site 2 (proposed outfall) is 0.357 metres with freeboard to bank 2.07 metres. At site 7 (at Shannon River) the water depth is 2.25 metres with freeboard to bank 0.36 metres.

9.2.30. A high flow analysis for Cross River was estimated along the 20km length, with adjustments made for the influence of the Shannon River at the downstream outlet. The analysis indicated that pumped flow into Cross River would increase water levels by approximately 110mm at the outfall location (i.e. site 2). As the freeboard to bank is 2.07m the channel can accommodate this increase. At the outlet to the Shannon River (i.e. Site 7) there will be no notable change due to the pumped flow.

9.2.31. A low flow analysis for Cross River was estimated along the 20km length, with adjustments made for the influence of Shannon River (both Qmed and Q95). At site 2 (outfall location), the addition of the proposed pumped flow, which is in the order of magnitude of double the low flow conditions, corresponds to an increase in water depth of 0.141m for a 95%ile low flow and 0.101m in for the 50%ile low flow. At site 7 the addition of the proposed pumped flow corresponds to an increase in water depth of 0.022m for a 95%ile low flow and 0.047m for the 50%ile low flow and has no significant effect on flows.

Water Quality and Biological limits

9.2.32. A trend analysis of the details on the EPA water quality database was conducted which was supplemented by samples taken in August 2024. EPA does not monitor Lough Funshinagh as it is not a designated WFD lake waterbody. Water quality samples were taken at Lough Funshinagh on 11/06/21 *(sic)* and 12/08/24.

Thermal Conditions

9.2.33. It is expected that lake water will have a higher temperature than river water. Average annual surface water temperatures recorded in Cross River ranged from between 13-13.7°C in summer months (April to September) and 8.4-8.9°C in winter months (October to March).

Oxygenation conditions

9.2.34. Assessment of the EPA dataset indicated that Cross River DO concentrations ranged from between 4mg/l to 13.25 mg/l, the latter which surpasses the moderately polluted rivers upper limit.

9.2.35. The August baseline samples show lower BOD concentrations when compared to the average EPA datapoints. BOD levels were low (≤1.1mg O2/l) with all sites meeting the high status threshold of ≤1.3mg O2/l as set out under the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. No. 77/2019). The baseline samples COD concentrations are smaller than the maximum Urban Waste Water Treatment Directive threshold of 125mg O_2/l. The baseline sample DO concentrations were within acceptable limits for salmonids.

Salinity

9.2.36. The recorded electrical conductivity results at each sample location along the river ranged from between 266 µS/cm to 609 µS/cm (as recorded at the same station in 2009). The conductivity at the 2024 sample sites were also within an acceptable range within both the river and lake. Lough Funshinagh has a lower conductivity than the river samples (mean 332.3µS/cm).

Acidifcation

9.2.37. Each of the reported pH results for all EPA stations did not exceed the adopted screening criteria range of between pH 6 to pH 9 as set out in the EC Directive 2006/44/EC for the protection of fish in salmonid and cyprinid waters. The pH reflected the calcareous influences of the site. Lough Funshinagh had a higher pH than the river samples with a mean of 8.2.

9.2.38. The pH levels at the 2024 sample sites were within an acceptable range within the river and lake (see Table 5.8).

Nutrient Conditions

9.2.39. The total N values found in the EPA stations analysed vary from 0.091 to 4.532. The concentration of total phosphorus was recorded only 8 times between three of the stations in the years 2007, 2015 and 2017 with all samples recorded exceeding the P concentration limit for both high and good ecological status as required by the WFD.

9.2.40. The maximum orthophosphate concentrations recorded were between 0.147 mg/l and 0.188 mg/l, surpassing the criteria of the Surface Water Regulations, but not the ones established by the Directive 2006/44/EC limits. In most stations, the average orthophosphate concentrations recorded remained below the Surface Water Regulations and Directive 2006/44/EC limits, except for monitoring location RS26C100400 which, with an average of 0.022 mg/l P, exceeded the Surface Water Regulations orthophosphate limits for high status waterbodies.

9.2.41. Total oxidised nitrogen (TON) in Cross River were within normal parameters for a lowland river, ranging from 0.636 to 1.561 mg/l (Figure 5.18). All sampling sites met the good status targets for total ammonia (i.e. $\leq$ 0.040mg N/l) as set out in the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 with levels of unionised ammonia low across the site ($\leq$ 0.0001). Low levels of Molybdate Reactive Phosphorus (MRP) were recorded (i.e. $\leq$ 0.011mg P/l) and complied with the Surface Water Regulations (S.I. 77 of 2019) good status target for rivers of $\leq$0.035mg P/l.

9.2.42. The orthophosphate PO4-P baseline levels recorded in Lough Funshinagh are between <0.01 and 0.036 with Molybdate Reactive Phosphorus less than <0.001 mg P/l. The level of total phosphorus (mean 0.048mg P/l) did not meet the good status threshold as required in the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. 77/2019) (i.e., good status is ≤0.025mg P/l).

9.2.43. Baseline samples of the lough give a total ammonia of between 0.007 and 0.021 mg N/l with unionised ammonia also low (0.001).

9.2.44. Whilst S.I. 77/2019 sets no specific boundary conditions for nitrate in lakes, EPA assessment of high-quality water (riverine) sources has set boundary conditions of 0.8 mg/l NO3-N for high quality waters and 1.8 mg/l NO3-N for good quality waters (O'Boyle et al., 2019). Levels in baseline Lough Funshinagh samples may be considered good overall (mean 0.027 mg/l N).

Assimilative Capacity Assessment

9.2.45. The baseline water quality monitoring from August 2024 for the 7 sites along Cross River and 3 sites at Lough Funshinagh were used to assess the Waste Assimilative Capacity (WAC) of Cross River for the proposed pumped water from Lake

Funshinagh. Additional parameters were taken from the EPA monitoring stations. No upstream monitoring stations were available for the river. River flow data was taken from the low flow analysis (i.e. 50% and 95%ile flow) for the outfall location and a site upstream of the outfall. The maximum flow rate from the proposed pumped flow will be 300l/s, with a worst-case scenario of continuous pumping over a 24-hour period. The maximum daily flow volume to the Cross River will be 25,920 m^3/day.

9.2.46. I note the following:

- Cross River at the proposed outfall has assimilative capacity for nutrients, including nitrate, nitrite, orthophosphate and ammonia and other parameters chloride, boron, copper, BOD5 and selenium for both 95%ile and 50%ile scenarios.
- The river has assimilative capacity for conductivity in both 95%ile and 50%ile scenarios.
- The proposed lough discharge would have no discernible effect for nitrate, and nitrite, conductivity, and chloride.
- The background concentration for manganese in the watercourse is above the acceptable limit for manganese in both the 95%ile and 50%ile scenarios and, therefore, does not have assimilative capacity.
- There appears to be a discrepancy in Table 5.9 of the report. In same its states that there is no data available for orthophosphate and ammonia for the lake. I refer the Board to Appendix B attached to the compliance report which provides tables of the sampling results at the lake undertaken on 11/06/21 (*sic)* and 12/08/24 in which results of orthophosphate as PO4-P, Molybdate Reactive Phosphorus (MRP) and ammonia sampling are provided. I also note Table 1 of Appendix J attached to the Screening for Appropriate Assessment and Natura Impact Assessment Report which consolidates the data for the river and lough providing the water quality baseline for both across a range of parameters and, which is stated, will underpin the water quality monitoring throughout the operational phase of the proposed scheme. Again,

- details are provided on MRP and ammonia. On the basis of this information it can be determined that the proposed discharge from the lough will not have a discernible effect on the river in terms of orthophosphate and ammonia.

Biological Quality

9.2.47. None of the sample sites achieved greater than Q3-4 moderate status. A low diversity of fish species was recorded during the electro-fishing survey.

9.2.48. There will be an increase in flow in the order of magnitude of double the current low flow conditions in the river with detail provided to support the conclusion that the channel has enough capacity for additional flow. As noted above additional energy will be dissipated by the design of the rock armour and geotextile with any erosion localised at the outfall. All the indicators that indicate ecological status are within the relevant thresholds/limits. Fish pass will be maintained.

Hydrologically connected Protected Areas

Lough Funshinagh SAC

9.2.49. I refer the Board to the baseline sampling results as set out in the sections above.

9.2.50. During the aquatic sampling no Annex I habitats were recorded. Indicator species of '3180 turloughs' or '3270 Rivers with muddy banks with Chenopodion rubri p.p.and Bidention p.p. vegetation' were not identified in surveys, predominantly due to the above average flood levels present in Lough Funshinagh during summer 2024.

Middle Shannon Callows SPA and River Shannon Callows SAC

9.2.51. The groundwater dependant habitats within the Shannon Callows SAC include Molinia Meadows [6410], Alkaline fens [7230] and Alluvial forests [91EO]. These habitats are all downstream of Cross River confluence to the Shannon River. Alluvial forests [91EO] require periodic flooding along river and lake floodplains. Alkaline fens [7230] require high groundwater levels which are at or above the ground surface for a large proportion of the year. Alkaline Fens also require water with natural levels of iron, magnesium and calcium, poor in nutrients (where phosphorus is the limiting factor) and relatively rich in calcium.

9.2.52. The Special Qualifying Interests features of the Middle Shannon Callows are whooper swan (Cygnus cygnus), wigeon (Anas penelope), corncrake (Crex crex), golden plover (Pluvialis apricaria), lapwing (Vanellus vanellus) black-tailed godwit

(Limosa limosa), black-headed gull (Chroicocephalus ridibundus) and Wetland and Waterbirds [A999].

9.2.53. As noted previously the pumped water will have no discernible impact on River Shannon flows downstream.

Assessment

Waterbodies

9.2.54. I refer the Board to Table 5.12 which sets out the WFD Significance test (rivers). The following summarises the conclusions for the 4 no. waterbodies that comprise Cross River (IE_SH_26C100060, IE_SH_26C100200, IE_SH_26C100300 and IE_SH_26D100400)

WFD supporting element	WFD elements	All practical mitigation measures in place	Relevance to RBMP
Hydromorphological supporting element	Hydrology: quantity and dynamics of flow	Stage 3 assessment of high and low flow conditions at the proposed outfall indicate that there will be an increase in flow in the order of magnitude of double the current low flow conditions.	The river waterbody is in a moderate condition, with existing hydromorphology (channel and bank modification) and agricultural pressure (nutrients).
	Hydrology: connection to groundwaters	No significant connection to groundwater	
	River continuity	Fish passage to be maintained at proposed outfall location.	
	Morphology: river depth and width	Existing hydromorphology condition is poor. Stage 3 assessment of high flow conditions	

		within river waterbody indicate limited change to water level.	
	Morphology: river bed structure, substrate.	Stage 3 assessment indicates stream power of proposed pumped flow is below the erosion threshold.	
Physico-chemical supporting elements	Thermal conditions	Water quality monitoring plan to monitor that temperature in river does not exceed EU Directive limits at IE_SH_26C100060 & IE_SH_26C100300 and does not change more than 1.5C at IE_SH_26C100200 and IE_SH_26C100400	
	Oxygenation Salinity Acidification	Water quality monitoring plan to monitor that parameters do not exceed EU Directive limits	
	Nutrient conditions	Cross River has capacity for L.Funshinagh nutrients. Water quality monitoring plan to monitor that nutrient conditions in river does not exceed EU Directive limits.	

Biological quality elements	Phytoplankton Macrophytes and Phytobenthos Benthic invertebrate Fauna Fish fauna	Q-values were below 'good' status. Design of the outfall location allows for fish passage. Current flow with proposed pumped flow is below the erosive threshold. The impact to the biological quality is expected to be low.	

9.2.55. Having regard to the baseline water quality data available for both Cross River and Lough Funshinagh (as provided in Appendix C) I consider that there is sufficient information to allow for a proper assessment and which provides a reference against which proposed water quality monitoring plan can be assessed.

9.2.56. As noted previously the purpose of the proposed development is to provide flood relief to residential and agricultural lands in the area of Lough Funshinagh and to alleviate the threat of flooding to the village of Curraghboy. It is a temporary, interim measure with an alternative, permanent solution being investigated comprising the transfer of water from Lough Funshinagh to Lough Ree and which will be subject to detailed assessment.

Protected Areas

9.2.57. *Lough Funshinagh SAC* is currently not achieving its QIs due to high water levels and reduction in water levels may improve the condition of the habitat. Having regard to the baseline water quality data available for Lough Funshinagh (as provided in Appendix C) the proposed water quality monitoring plan is acceptable.

9.2.58. *Middle Shannon Callows SPA and River Shannon Callows SAC*. The SCIs and QIs of the European Sites will not be impacted by the proposed pumped flow. The proposed water quality and water level monitoring in Cross River is acceptable.

Water Framework Directive - Conclusion

9.2.59. I have assessed the Lough Funshinagh Interim Flood Relief Scheme and considered the objectives as set out in Article 4 of the Water Framework Directive to protect and,

where necessary, restore surface & ground waterbodies in order to reach good status (meaning both good chemical and good ecological), and to prevent deterioration. Having considered the nature, scale and location of the project I consider that it is reasonable to conclude on the basis of objective information that the proposed development will not result in a risk of deterioration of any waterbody (rivers, lakes, groundwaters, transitional and coastal) either on a temporary or permanent basis.

Ecology and Biodiversity

9.2.60. The application is accompanied by a Natura Impact Statement (NIS) which examines the relationship between the proposed works and European sites, and an Ecological Impact Assessment (EcIA) report. I refer the Board to the appropriate assessment in section 9.3 below.

Cross River

9.2.61. I refer the Board to my assessment in terms of the WFD set out above. As noted the section of the river at the proposed outfall is highly modified as it has been historically straightened and deepened. Having regard to the details provided in support of the application including the WFD Compliance Report and hydraulic modelling results, I consider that the applicant has adequately demonstrated that Cross River has capacity to support the additional water from the proposed scheme, that the pumped flows would have an insignificant impact on flood levels and would not increase the frequency or severity of natural flood conditions downstream. Therefore, habitats downstream are not considered to be at risk of habitat loss, directly or indirectly from the proposed scheme either during construction, operation or decommissioning stages.

9.2.62. At the outfall location a geotextile layer will cover the riverbed and extend up the side of the riverbanks on both sides to protect the integrity of the riverbed from potential erosion from the outflow. To further protect the riverbed from erosion, natural flag stones will be installed slightly below the existing bed level at the outfall location. The geotextile and natural flag stones will extend over a length of 10 metres centred on the outflow locations (5 metres upstream and 5 metres downstream). The geotextile will be held in place by rock armour which consists of 200kg rocks approx.

0.5 metre in diameter, up to the proposed high-water mark. The central part of the riverbed will remain at its existing level so as not to impede fish passage.

9.2.63. The water from the outfall pipe will run onto the rock armour on the north (left) bank which will dissipate the energy of the flow and allow it to enter the river in a controlled manner without causing erosion. Regular monitoring is to be undertaken. The applicant has confirmed that the design has taken into consideration the concerns of IFI and confirms that the geotextiles, natural flag stones and rock armour can be retained in place. I note the recommendation as set out in Section 6.3 of the WFD Compliance Report that a fluvial geomorphologist and ecologist supervise installation and mitigation at the outfall location. I recommend that this be required by way of condition.

9.2.64. Aquatic surveys were carried out at 7 no. locations along Cross River, 1 no. being upstream of the proposed outfall site. Brown trout, lamprey, gudgeon, three-spined stickleback and non-native roach were recorded. Lamprey is of international importance and, having regard to the precautionary principle, is assessed as possibly belonging to the population which is a qualifying interest of the Lower River Shannon SAC in excess of 70km downstream. In order to avoid undue repetition I refer the Board to the appropriate assessment in section 9.3 below.

9.2.65. The constraints in terms of the electrofishing survey work undertaken during low water levels are acknowledged and that the seasonal distribution of fish populations could extend further upstream in time of higher water levels. In its response to IFI's submission the applicant confirms that the proposed operation and mitigation has been designed on the precautionary principle that both trout and brook lamprey are, or could be present, within the entire Cross River.

9.2.66. Fish translocation is proposed during the construction phase. A fish translocation method statement is to be prepared with the works overseen by a suitably qualified ECoW. Avoidance of the close season for salmon (October to June) is unlikely and a derogation will be required for in-stream works during this period. In view of the urgency of the works and objectives to protect residential and agricultural land and public health this is considered acceptable.

9.2.67. White clawed crayfish were recorded to be present downstream. As the measures to be employed during the construction phase are known to prevent siltation or

pollution of watercourses, no impact is anticipated during the construction and decommissioning phases. The proposed works to prevent erosion and dissipate energy at the outfall location as previously described will protect against reduced water quality and increased siltation downstream.

Lough Funshinagh

9.2.68. As noted previously Lough Funshinagh is a turlough and a SAC with 2 no. qualifying interest habitats. To avoid undue repetition I will address this in the appropriate assessment in section 9.3 below.

9.2.69. The installation of the floating container will result in temporary disturbance for the 2 year operational period but is not considered significant in view of the size of the lough and available habitat. The noise and vibration during the one month construction phase is also not a material concern in the context of the extent of available habitat.

9.2.70. The water quality monitoring strategy is set out in Appendix J of the NIS with the applicant confirming that all parameters identified in the tests undertaken on the 12/08/24 will be undertaken. It is also proposed to undertake water quality samples in deeper water at the intake location given this is the location from which water will be pumped with ongoing consultation with IFI as part of the adaptive monitoring plan as committed to in the Operational Phase Water Monitoring Plan.

9.2.71. Water from the lough will enter the pump pontoon via a 10mm aperture fish screen with a net area of $2m^2$ such that the approach velocity of the water entering the fish screen will be a maximum of 150mm/s at a flow rate of 300l/s. It is anticipated that juvenile fish will be able to swim against the current at this velocity and not get entrained to the mesh.

9.2.72. In response to IFI's submission and concerns regarding risk of transfer of algae and cyanobacteria the applicant notes that the submergence depth of the intake pipe has more than doubled from the 200mm-300mm as originally proposed to 800mm. There will be lower light penetration levels and the vertical water movement on surface/near surface will be minimised by the fact that the pump will draw water horizontally. It is proposed to monitor the intake point daily for evidence of algae including cyanobacteria.

9.2.73. As recorded, the non-native Canadian pondweed was recorded at Lough Funshinagh. The above detailed mesh screen on the intake pump system will prevent large fragments of the habitat being pumped to the Cross River with the project ecologist to check weekly for the species at the intake and outfall points.

Terrestrial Habitats

9.2.74. The location of the proposed compound on the lake shore is in agricultural use with the route of the pipeline to the R362 along a private access track and low lying agricultural lands largely used for grazing. The route then crosses the R362 and runs along agricultural lands to local road L2013 which it crosses to then cross agricultural lands to its outfall at Cross River. The field boundaries are largely delineated by hedgerows and stone walls. The habitat recorded is of local importance (lower and higher value).

9.2.75. The footprint of the compound, which is to be kept to a minimum, does not entail any excavation works. Save for the road crossings the pipeline is to be laid overland and, as far as possible, to run parallel to field boundaries. A stock proof fence delineating the 5 – 7 metre wide corridor is proposed. The proposal will entail the direct loss of small sections of hedgerows (width of 5 metres) where field boundaries are traversed so as to allow a tractor/excavator to move through and the pipeline to be laid. Mature trees are to be avoided. The Ecological Clerk of Works to be retained for the construction phase of the project would oversee these removal works. The applicant proposes their reinstatement following the decommissioning of the project, and in its response to the comments from the DAU, accedes to the preparation of a hedgerow restoration plan.

9.2.76. Best practice biosecurity measures are to be implemented to ensure against the introduction/spread of invasive species.

Fauna

9.2.77. Badgers were recorded in the vicinity of the site with setts to the south and northwest of Lough Funshinagh. Further evidence of badger was recorded in the habitat running along Cross River. The scheme allows ramps over the pipes and for pipes to allow badger cross through the stockproof fence at 100 metre intervals at locations in proximity to the identified badger setts and wherever the pipe crosses a field boundary. The applicant accepts the DAU's recommendation to increase the

pipe size from 300mm to 600mm in line with the requirements for road schemes. The department also recommends the confirmation of the location of the ramps and pipes following a pre-construction badger survey. Again the applicant accedes to this recommendation with the wording in the CEMP to be modified accordingly. A badger survey is to be undertaken a year into operation to confirm whether any new setts have been established and whether the ramps and pipe locations need to be reviewed.

9.2.78. Otter is a qualifying interest of a number of European Sites subject of appropriate assessment in section 9.3. To avoid undue repetition I refer the Board to my assessment thereunder.

9.2.79. The limited extent of hedgerow to be lost to facilitate the works, which will be temporary in duration, would not have a significant impact on habitat loss for pine martin.

9.2.80. No specific survey work was undertaken for bats with the species recorded in the breeding bird survey dawn surveys with roost potential noted in mature trees, dead trees and old stone buildings around the lough. Cross River is likely to be used for foraging and commuting bats. Having regard to the nature and limited extent of the works with localised noise and vibration impacts to a range of not more than 50 metres from the pumps, no material concerns regarding disturbance are anticipated. Trees in the vicinity of the compound are to be assessed for potential roosts and should any be found a disturbance licence may be required. Construction and operational stage lighting details are to be reviewed by a suitably qualified ecologist and are to follow the guidelines set out in Bats and Artificial Lighting GN08/23 and designed to minimise glare and light onto adjacent habitats. No trees are proposed to be felled along the pipe route or at the outfall location at Cross River, therefore impacts on potential for bat roosts can be ruled out.

9.2.81. Due to the construction period of a month and localised extent of works any disturbance during this period would be limited and temporary. The delivery of fuel by tankers every fourth day during the operational phase is not anticipated to generate any significant disturbance as it would emulate background levels of the agricultural machinery that operate daily around Lough Funshinagh. It is anticipated

species would be habituated to the movement of machinery such as tractors and excavators over short periods.

Avifauna

9.2.82. In terms of the survey works undertaken and reported in the EcIA the limitations encountered during the breeding and wintering bird surveys are detailed in section 4.5.3, including issues arising from access due to high water levels and visibility available at time of surveys. Notwithstanding, it is concluded that the surveys are sufficient to inform the baseline for the area and to allow for an impact assessment.

9.2.83. Lough Funshinagh is noted as an important site for wintering and breeding waterfowl and supports several bird species which are designated Annex I bird species as per the Birds Directive. Its proximity to Special Protection Areas is noted. Dedicated wintering bird surveys were carried out between November 2023 and March 2024 with golden plover, lapwing, wigeon, teal and black headed gulls the most abundant species. The breeding bird surveys carried out between April and June 2024 recorded 19 no. species.

9.2.84. Having regard to the limited scale and extent of the works proposed with the construction period anticipated to take one month and an operational period 2 years with fuel tankers anticipated every four days, is not anticipated to generate any significant disturbance. It is anticipated species would be habituated to the movement of machinery such as tractors and excavators over short periods. Any impact on avifauna would be limited. There is abundant alternative suitable habitat within the unaffected areas of the lough and within surrounding wetland habitats.

Ecology and Biodiversity - Conclusion

9.2.85. On the basis of the information provided I am satisfied that subject to the proposed mitigation measures to be implemented during the construction, operational and decommissioning phases, including water quality monitoring and oversight of works by an ECoW, project ecologist and fluvial geomorphologist, that the proposed development would not have a significant adverse impact on ecology and biodiversity.

Cultural Heritage

9.2.86. The application is accompanied by an Archaeological Impact Assessment Report in which it is noted that there are 33 recorded archaeological sites within the 1km buffer area of the proposed scheme. The nearest is site ref. R0048-182 (ringfort) c. 30 metres from the pipeline route with a cluster of sites to the west of the proposed outfall location at Cross River. I refer the Board to Figure 8 in the assessment report.

9.2.87. Save for the undergrounding of the pipe under the local and regional roads and the private access no below ground excavation works are proposed with the pipe to be enclosed by stock proof fencing with fence posts typically having a maximum below ground depth of approx. 600mm. I note the measures incorporated into the scheme design where the pipeline is within the zone of influence of recorded monument ref. R0024-182, namely the fence is to be located 3 metres away from the field boundary next to the ringfort and the pipe is to be laid over matting approx. 15 metres from the boundary.

9.2.88. The riverbanks are to be protected from erosion by a geotextile layer and rock armour and the riverbed is to be protected from scour by the placement of flag stones on the geotextile on the riverbed. This section of the river has been heavily modified.

9.2.89. Given that the proposed scheme will not bring Lough Funshinagh levels below 67.5m AOD which is above what historically have been considered ‘normal levels’ no impacts to underwater archaeology are considered to be likely.

9.2.90. Archaeological monitoring is proposed to either side of the public roads where excavation works are proposed and the proposed works at the proposed outfall at Cross River.

9.2.91. I note that the DAU has no objection to the proposal subject to conditions.

9.2.92. I therefore conclude that sufficient detail has been provided to support the view that the proposed scheme will not give rise to concerns regarding cultural heritage.

9.3. The likely significant effects on European sites

9.3.1. The areas addressed in this section are as follows:

- Compliance with Articles 6(3) of the EU Habitats Directive
- The Natura Impact Statement
- Appropriate Assessment

Compliance with Articles 6(3) of the EU Habitats Directive

9.3.2. The Habitats Directive deals with the Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union. Article 6(3) of this Directive requires that any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. The competent authority must be satisfied that the proposal will not adversely affect the integrity of the European site.

The Natura Impact Statement

9.3.3. The application is accompanied by a NIS which describes the proposed development, the project site and the surrounding area. The NIS contains a stage 1 screening assessment which concludes that a stage 2 appropriate assessment is required. The NIS outlines the methodology used for assessing potential impacts on the habitats and species within several European Sites that have the potential to be affected by the proposed development. It predicts the potential impacts for these sites and their conservation objectives, it suggests mitigation measures, assesses in-combination effects with other plans and projects and it identifies any residual effects on the European sites and their conservation objectives.

9.3.4. The NIS was informed by the following studies, surveys and consultations:

- A desk top study,
- An examination of aerial photography and maps,
- Field surveys of the proposal site and surroundings including habitat surveys, aquatic surveys, bird surveys and mammal surveys,

- Technical assessments relating to water quality, hydrology and fluvial geomorphology,
- Consultations with the National Parks and Wildlife Service and Inland Fisheries Ireland.

9.3.5. The report concluded that, subject to the implementation of best practice and the recommended mitigation measures, the proposed development would not result in adverse effects, alone or in-combination, on the integrity of Lough Funshinagh SAC, Lough Ree SAC, the River Shannon Callows SAC and the Lower River Shannon SAC, including in respect of their qualifying features that were scoped in for AA.

9.3.6. Having reviewed the NIS and the supporting documentation, I am satisfied that it provides adequate information in respect of the baseline conditions, clearly identifies the potential impacts, and uses best scientific information and knowledge. Details of mitigation measures are provided, and they are summarised in Section 6 of the NIS. I am satisfied that the information is sufficient to allow for appropriate assessment of the proposed development (see further analysis below).

Appropriate Assessment

9.3.7. I consider that the proposed development of temporary flood alleviation measures is not directly connected with or necessary to the management of any European site.

9.3.8. Having regard to the information and submissions available, nature, size and location of the proposed development and its likely direct, indirect and cumulative effects, the source pathway receptor principle and sensitivities of the ecological receptors, the following European Sites are considered relevant to include for the purposes of initial screening for the requirement for stage 2 appropriate assessment on the basis of likely significant effects.

European site (SAC/SPA) Qualifying Interests

European Site (SAC/SPA)	Qualifying Interests	Distance
Lough Funshinagh SAC (site Code 00611)	Turloughs [3180] Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation [3270]	Part of proposed development within SAC

Lough Croan Turlough SAC (site code 000610)	Turloughs [3180]	4km to west No hydrological connection. Located in different groundwater body
Ballynamona Bog and Corkip Lough SAC (site code 002339)	Turloughs [3180] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150] Bog woodland [91D0]	4km to southwest Within same groundwater body but no hydrogeological link. Located to the south of Cross River. Local flow from the SAC is towards the river to the north and east.
Lough Ree SAC (site Code 000440)	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150] Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120]	5km to east May be linked via groundwater Within 18km range of Otter

	Alkaline fens [7230] Limestone pavements [8240] Bog woodland [91D0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Lutra lutra (Otter) [1355]	
Four Roads Turlough SAC (site code 001637)	Turloughs [3180]	8km to west No hydrological connection. Located in different groundwater body
River Shannon Callows SAC (site code 000216)	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510] Alkaline fens [7230] Limestone pavements [8240] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Lutra lutra (Otter) [1355]	14km downstream Hydrological link via Cross River

Lower River Shannon SAC (site code 002165)	Sandbanks which are slightly covered by sea water all the time [1110] Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Coastal lagoons [1150] Large shallow inlets and bays [1160] Reefs [1170] Perennial vegetation of stony banks [1220] Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Mediterranean salt meadows (Juncetalia maritimi) [1410] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	76km downstream Hydrological link via Cross River

	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Salmo salar (Salmon) [1106] Tursiops truncatus (Common Bottlenose Dolphin) [1349] Lutra lutra (Otter) [1355]	
Lough Croan Turlough SPA (site code 004139)	Shoveler (Anas clypeata) [A056] Golden Plover (Pluvialis apricaria) [A140] Greenland White-fronted Goose (Anser albifrons flavirostris) [A395] Wetland and Waterbirds [A999]	4km to north-west No hydrological connection. Construction works temporary in duration (1 month). Operational noise levels would be below levels of disturbance. The natural range of the species is not being reduced

		and there is sufficiently large habitat to maintain the populations on a long-term basis
Lough Ree SPA (site code 004064)	Little Grebe (Tachybaptus ruficollis) [A004] Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Teal (Anas crecca) [A052] Mallard (Anas platyrhynchos) [A053] Shoveler (Anas clypeata) [A056] Tufted Duck (Aythya fuligula) [A061] Common Scoter (Melanitta nigra) [A065] Goldeneye (Bucephala clangula) [A067] Coot (Fulica atra) [A125] Golden Plover (Pluvialis apricaria) [A140] Lapwing (Vanellus vanellus) [A142] Common Tern (Sterna hirundo) [A193] Wetland and Waterbirds [A999]	5.5km to the east. No hydrological connection. Construction works temporary in duration (1 month). Operational noise levels would be below levels of disturbance. The natural range of the species is not being reduced and there is sufficiently large habitat to maintain the populations on a long-term basis.

Four Roads Turlough SPA (site code 004140)	Golden Plover (Pluvialis apricaria) [A140] Greenland White-fronted Goose (Anser albifrons flavirostris) [A395] Wetland and Waterbirds [A999]	8km to west No hydrological connection. Construction works temporary in duration (1 month). Operational noise levels would be below levels of disturbance. The natural range of the species is not being reduced and there is sufficiently large habitat to maintain the populations on a long-term basis.
River Suck Callows SPA (site code 004097)	Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Golden Plover (Pluvialis apricaria) [A140] Lapwing (Vanellus vanellus) [A142] Greenland White-fronted Goose (Anser albifrons flavirostris) [A395] Wetland and Waterbirds [A999]	10km to the west No hydrological connection. Construction works temporary in duration (1 month). Operational noise levels would be below levels of disturbance.

		The natural range of the species is not being reduced and there is sufficiently large habitat to maintain the populations on a long-term basis.
Middle Shannon Callows SPA (site code 004096)	Whooper Swan (Cygnus cygnus) [A038] Wigeon (Anas penelope) [A050] Corncrake (Crex crex) [A122] Golden Plover (Pluvialis apricaria) [A140] Lapwing (Vanellus vanellus) [A142] Black-tailed Godwit (Limosa limosa) [A156] Black-headed Gull (Chroicocephalus ridibundus) [A179] Wetland and Waterbirds [A999]	15km to south east Construction works temporary in duration (1 month) with localised effects Operational noise levels would be below levels of disturbance. The natural range of the species is not being reduced and there is sufficiently large habitat to maintain the populations on a long-term basis.
Mongan Bog SPA (site code 004017)	Greenland White-fronted Goose (Anser albifrons flavirostris) [A395]	20km to south east No hydrological connection

		No record of SCI on site.

9.3.9. Based on my examination of the NIS report and supporting information (including the Ecological Impact Assessment Report and Water Framework Directive Compliance Report), the NPWS website, aerial and satellite imagery, the scale of the proposed development and likely effects, separation distance and functional relationship between the proposed works and the European sites, their conservation objectives, the site specific characteristics, the species specific characteristics and requirements (including habitat preference, diet and foraging distances) and taken in conjunction with my assessment of the subject site and the surrounding area, I conclude that a stage 2 appropriate assessment is required for the following 4 no of the 13 no. European sites referred to above.

- Lough Funshinagh SAC (00611)
- Lough Ree SAC (000440)
- River Shannon Callows SAC (000216)
- Lower River Shannon SAC (02165)

9.3.10. The remaining 8 no. sites can be screened out from further assessment because of the scale of the proposed works, the nature of the conservation objectives, qualifying and special conservation interests, the separation distances and the lack of a substantive linkage between the proposed works and the European sites. It is therefore reasonable to conclude on the basis of the information on the file, which I consider adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on European Site Nos 000610, 002339, 001637, 004139, 004064, 004140, 004097, 004096 and 004017 in view of the sites' conservation objectives and a stage 2 appropriate assessment is not therefore required for these sites.

9.3.11. No measures designed or intended to avoid or reduce any harmful effects on a European Site have been relied upon in this screening exercise.

Relevant European sites

Lough Funshinagh SAC (site code 00611)

9.3.12. The lake, which is underlain by Carboniferous limestone, is classified as a turlough because it fluctuates to a significant extent every year and occasionally dries out entirely (approximately two to three times every ten years). In most years, however, an extensive area of water persists. This is filled with vegetation, providing excellent breeding habitat for wildfowl, and the site is designated a Wildfowl Sanctuary.

9.3.13. The proposed development is partially located within the SAC.

Lough Funshinagh SAC (site code 00611)	
Qualifying Interests and Conservation Objective Restore (**R**) Maintain (**M**)	Potential for Significant Effect Attributes and Targets: (NPWS - Conservation Objectives)
Turloughs (**M**)	**YES** Habitat area (stable at c.378.3ha or increasing); Habitat distribution (no decline); Hydrological regime (maintained); Soil type (maintain variety, area, extent and nutrient status); Physical bare ground (sufficient wet bare ground); Chemical processes (maintain appropriate calcium carbonate deposition rate); Water quality (maintain); Active peat formation (maintain); Vegetation composition (vegetation zonation/mosaic characteristic of site); Structure (sward height); Typical species (maintain); Fringing habitats area; Turlough woodland (diversity and structure).
Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation (**M**)	**YES** Habitat area (stable); Habitat distribution (no decline); Hydrological regime (maintained); Soil type (maintain area, extent and nutrient status); Physical bare ground (sufficient wet bare ground); Chemical processes (maintain appropriate calcium carbonate deposition

	rate); Water quality (maintain); Vegetation composition (sensitive and high conservation value vegetation communities/units and zonation/mosaic characteristics); Typical species (maintain); fringing habitats area.

Lough Ree SAC (site code 00440)

9.3.14. Lough Ree is situated in an ice-deepened depression in Carboniferous limestone on the River Shannon system between Lanesborough and Athlone. The site spans Counties Longford, Roscommon and Westmeath. Some of its features (including the islands) are based on glacial drift. It has a very long, indented shoreline and hence has many sheltered bays. Although the main habitat, by area, is the lake itself, interesting shoreline, terrestrial and semi- aquatic habitats also occur. There is a population of otter around the lake.

Lough Ree SAC (site code 00440)	
Qualifying Interests and Conservation Objective Restore (**R**) Maintain (**M**)	Potential for Significant Effect Attributes and Targets: (NPWS - Conservation Objectives)
Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation (**R**)	**NO** - Lough Funshinagh has water levels that exceed the norm. The proposed scheme will draw down the water level closer to its natural state. This will not have an effect on the wider groundwater body given its area of 354 km^2 in comparison to the area of Lough Funshinagh at 3.7km^2. The proposed scheme is anticipated to only incur localised and temporary changes to groundwater. Therefore, groundwater dependent habitats are not anticipated to be at risk of
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	
Active raised bogs [7110]	

Degraded raised bogs still capable of natural regeneration [7120] (**R**) Bog woodland [91D0] (**R**)	a likely significant effect from the proposed scheme through groundwater pathways. Significant effects can be ruled out.
Alkaline fens [7230] (**M**)	
Limestone pavements [8240] (**M**) Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] (**R**)	**NO** - Terrestrial habitats upstream of the proposed development. Significant effects can be ruled out.
Lutra lutra (Otter) [1355] (**M**)	**YES** – within 18km territory range of species Distribution (no decline); Extent of terrestrial habitat mapped and calculated as 330.6ha (no decline); Extent of freshwater habitat (river) mapped and calculated as 22.km (no decline); Extent of freshwater habitat mapped and calculated as 2097.4ha (no decline); Couching sites and holts (no decline); Fish biomass available (no decline); Barriers to connectivity (no increase).

Lower River Shannon SAC (site code 02165)

9.3.15. This is a very large site stretching along the Shannon valley from Killaloe in Co. Clare to Loop Head/ Kerry Head, a distance of some 120 km. The site encompasses the Shannon, Feale, Mulkear and Fergus estuaries, the freshwater lower reaches of the River Shannon (between Killaloe and Limerick), the freshwater stretches of much of the Feale and Mulkear catchments and the marine area between Loop Head and

Kerry Head. Rivers within the sub-catchments of the Feale the Mulkear are within the designated site.

Lower River Shannon SAC (site code 002165)	
Qualifying Interests and Conservation Objective Restore (**R**) Maintain (**M**)	Potential for Significant Effect Attributes and Targets: NPWS Conservation Objectives
Sandbanks which are slightly covered by sea water all the time [1110] (**M**) Estuaries [1130] (**M**) Mudflats and sandflats not covered by seawater at low tide [1140] (**M**) Coastal lagoons [1150](**R**) Large shallow inlets and bays [1160] (**M**) Reefs [1170] (**M**) Perennial vegetation of stony banks [1220] (**M**) Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] (**M**) Salicornia and other annuals colonising mud and sand [1310] (**M**) Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] (**R**)	**NO** - in view of separation distance with the SAC approx. 90km downstream of the proposed scheme Given the length of Cross River from the point of scheme and the separation distances to the mapped locations of the QIs downstream and the projected flow rates of no more than 300 l/s any potential for pollution during the construction and decommissioning phases would be highly localised and would be rapidly dispersed and dissolved thereby insignificant upon reaching the SAC. As per the Engineering Report the Cross River has ample capacity to support the additional water from the proposed scheme. The pumped flows would have an insignificant impact on flood levels and would not increase the frequency or severity of natural flood conditions downstream. Therefore, habitats downstream are not considered to be at risk of habitat loss, directly or indirectly from the proposed scheme either during construction, operation or decommissioning stages. Significant effects can be ruled out.

Mediterranean salt meadows (Juncetalia maritimi) [1410] (**R**) Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] (**M**) Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] (**M**) Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] (**R**) Bottle Nose Dolphin (**M**)	
Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] (**R**)	**NO** – within different catchment in County Clare. Significant effects can be ruled out.
Petromyzon marinus (Sea Lamprey) [1095] (**R**)	**NO** - As the lower River Shannon ascends into the Upper River Shannon there are a number of physical structures (weirs, culverts, dams) which limit the upstream movement of fish species. Therefore, these aforementioned QI species are ruled out for further assessment. Significant effects can be ruled out.

Lampetra planeri (Brook Lamprey) [1096] (**M**)	**YES** - juvenile brook/river lamprey ammocoetes were identified at sampling point S2.
Lampetra fluviatilis (River Lamprey) [1099] (**M**)	Distribution (access to all water courses down to 1st order stream); Juvenile population structure (at least 3 age/size groups present); Juvenile density in sediment (at least 2/m^2); Extent of distribution and spawning habitat (no decline); Availability of juvenile habitat (more that 50% samples sites positive).
Salmo salar (Salmon) [1106] (**R**)	**NO** - As the lower River Shannon ascends into the Upper River Shannon there are a number of physical structures (weirs, culverts, dams) which limit the upstream movement of fish species. Therefore, these aforementioned QI species are ruled out for further assessment. Significant effects can be ruled out.
Lutra lutra (Otter) [1355] (**R**)	**NO** – outside territorial range of QI Significant effects can be ruled out.

River Shannon Callows SAC (site code 000216)

9.3.16. The River Shannon Callows is a long and diverse site which consists of seasonally flooded, semi-natural, lowland wet grassland, along and beside the river between the towns of Athlone and Portumna. It is approximately 50 km long and averages about 0.75 km wide (reaching 1.5 km wide in places). Along much of its length the site is bordered by raised bogs (many, but not all, of which are subject to large-scale harvesting), esker ridges and limestone-bedrock hills. The soils grade from silty alluvial to peat. This site has a common boundary, and is closely associated, with two other sites with similar habitats, River Suck Callows and Little Brosna Callows.

River Shannon Callows SAC (site code 000216)	
Qualifying Interests and Conservation Objective Restore (**R**) Maintain (**M**)	Potential for Significant Effect Attributes and Targets: NPWS Conservation Objectives
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] (**R**) Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510] (**R**) Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] (**M**)	**NO** The results of hydraulic modelling have concluded that through both low and high flow estimations, there will be no significant effects to the flow on Cross River or receiving River Shannon. Flood risk will not be increased through the proposed scheme at either the upper or lower sections of the reach. The addition of the pumped water will have an insignificant impact on flood levels and will not increase the frequency or severity or flooding in the callows. Water quality sample results of Lough Funshinagh and Cross River show little difference in parameters deducing that both waterbodies are relatively similar in physiochemical and biological make-up. Therefore, the degradation of habitat through water quality changes arising from the proposed scheme does not exist. Given the length of Cross River from the point of scheme discharge to the Shannon Callows (approx. 15km), the separation distance to the mapped locations of the QIs downstream and the projected flow rates of no more than 300 l/s any potential for pollution during the construction and decommissioning phases would be highly localised and would be rapidly dispersed and dissolved thereby insignificant upon reaching the SAC. Significant effects can be ruled out.
Alkaline fens [7230] (**M**)	

Limestone pavements [8240] (**M**)	**NO** – Terrestrial Habitat Significant effects can be ruled out.
Lutra lutra (Otter) [1355](**M**)	**YES** – potential use of Cross River for commuting purposes. Within 18km territorial range of species. Distribution (no decline), Extent of terrestrial habitat mapped and calculated as 282.1ha (no decline); Extent of freshwater habitat (river) mapped and calculated as 146.7km (no decline); Couching sites and holts (no decline); Fish biomass available (no decline); Barriers to connectivity (no increase).

9.3.17. **Potential direct and indirect effects:** The proposed development would be located within a European Site however it is not relevant to the maintenance of any European Sites.

9.3.18. There is potential for direct and indirect effects on Lough Funshinagh QI habitat species arising from the works required to facilitate the proposed development and from water pollution during the construction, operational and decommissioning phases arising from unmitigated release of sediments and accidental spillage of hydrocarbons from machinery and the proposed fuel tanks. The uncontrolled introduction of invasive species from works vehicles could give rise to the colonisation of habitats by invasive species, with resultant impacts on the attributes and targets for the QI species, in the absence of mitigation.

9.3.19. There is the potential for disturbance and/or displacement of otter during the construction, operational and decommissioning phases arising from noise and visual disturbance. The species which has been recorded at Lough Funshinagh is a qualifying interest of Lough Ree SAC and Shannon Callows SAC, both within its territorial range of 18km. The species may use Cross River for commuting and foraging.

9.3.20. There is potential for direct and indirect effects on QI species Brook and River Lamprey in the Lower River Shannon SAC. As the proposed scheme will involve installation of a new discharge to Cross River with associated increases in flows and

the introduction of rock armour to the river banks, there is the potential that changes in habitat and water quality in Cross River may have an impact upon recorded juvenile brook lamprey individuals which may be linked (through ammocoetes drift).

9.3.21. **Potential in-combination effects**: To assess the potential for cumulative effects on the relevant designated Natura 2000 sites, Section 5.7 of the NIS assessed the projects and ongoing activities occurring in the wider landscape for any in combination effects with the proposed development. I consider that with the implementation of specific environmental protection and control measures as outlined below to avoid/negate any potential adverse impacts, there will be no cumulative impacts arising in combination with any other plans or projects which would be of significance in respect to impacts affecting the conservation objectives or integrity of the above referenced European sites.

9.3.22. I have also considered the policies and objectives outlined in the current Roscommon County Development Plan and I consider that the range of environmental and natural heritage policy safeguards proposed in the plan are sufficient to ensure no in combination impacts with the proposal development.

Mitigation Measures

9.3.23. In Design or Embedded Mitigation

- HPDE drainage pipes to be laid on top of the installed geogrid/geotextile prior to placement of stone aggregate at the intake compound to ensure existing drainage regime of the site is maintained.
- Foul drainage from welfare facilities at construction site to be disposed of off-site to an appropriately licensed facility.
- Construction hours to be between 0700 to 1900 Monday to Friday and 0700 to 1600 Saturday.
- Concrete slab and bund to provide 110% storage for the 2 no. double skinned fuel tanks with an additional allowance for 75mm of rainfall accumulation. A sump will be provided at the lowest corner of the slab to enable rainwater to be pumped out at regular intervals during the operational phase.

9.3.24. Construction and Decommissioning Phases

- Ecological Clerk of Works to be retained
- Construction and Environmental Management Plan (CEMP) prepared (see Appendix 1)
- Sediment, Erosion and Pollution Plan (SEPCP) to be embedded within the CEMP.
- Non-native Invasive Species Management Plan (NNISMP) to be embedded within the CEMP.
- Incident Response Plan (IRP) prepared.
- Appropriate staff training.
- Pre-construction walkover of the site by ECoW to confirm that there have been no further evidence of protected species or significant change in conditions on site.
- No direct, untreated point discharge of construction runoff to watercourses or groundwater bodies.
- Silt fences to be installed around lough and along river and inspected 3 times a day.
- Regular monitoring of downstream receptor water quality for sediments and hydrocarbons.
- Where a pollution incident is detected, construction works will be stopped until the source of the construction pollution has been identified and remedied.
- All pollution control measures to be monitored daily.
- Fuelling of machines to be carried out in accordance with OPW Protocols, machines will be kept no less than 50 m away from all watercourses except where necessary for installation and fuelled at a safe location with all machines provided with spill kits.
- Effective spillage procedure to be put in place.
- Waste oils or hydraulic fluids to be collected, stored in appropriate containers and disposed of offsite in an appropriate manner.

- Spill kits to be provided.
- Haul routes to be regularly inspected and maintained to minimise sediment laden run-off.
- Regular inspection and maintenance of all vehicles, plant and equipment.
- Areas of hardstanding to be provided at site access and egress points where possible.
- Appropriate storage of fuel, oils and other chemicals on an impermeable base, surrounded by an impermeable bund, and inspected regularly for leaks. To be located on stable and level ground located away from waterbodies.
- Biosecurity measures for plant, machinery and materials including boats, trailers etc to prevent introduction and spread of invasive species.
- ECoW daily checks of turlough edge in proximity to works to identify if otter present. Will inform personnel when works can commence without causing disturbance to species.
- If lighting required it is to be directional and pointed away from waterbodies.
- Scheduling of instream works in river outside the spawning and early larval development periods.
- Fish translocation, if required, to take place in advance of the geotextile and natural flag stones installation under a section 14 authorisation from Department of the Environment, Climate and Communications by means of electro-fishing under the conditions of the licence.
- Any areas of exposed sediment adjacent to river deemed at risk of erosion during heavy rainfall to be protected using measures such as coir matting until vegetation is able to establish on these surfaces

Operational Phase

- Ecologist to be retained who shall visit the site weekly to review and confirm mitigation measures are being implemented and adhered to and to identify any unforeseen effects.

- Operations Phase Monitoring Strategy has been prepared including water quality and hydrology monitoring of Lough Funshinagh and Cross River (see Appendix J).
- Silt fencing to be retained during the operational period to ensure that any outfalls from the compound including rainwater which will be pumped out through the sump in the lowest corner of the slab will flow overland and through silt fencing. Fencing to be inspected by Ecologist.
- Remote accessed trail camera(s) to be installed in proximity to the pump intake compound to monitor for otters. If evidence of otter is identified this will be reviewed. If obvious sudden avoidance by otter of the pump intake compound is occurring, the Project Ecologist will review behaviour, consider whether this is significant and discuss, as necessary, with relevant NPWS staff as to whether revising pumping hours may be required.
- Nearest soft sediment juvenile lamprey (ammocoete) nursery areas downstream of the geotextile installation and outfall at river to be monitored by the Project Ecologist and fisheries specialist to ensure integrity of soft sediment habitat remains intact during the pumping operation. Should any significant visible changes be observed the pumping regime to be adjusted accordingly to reduce potential impacts such as 'scour out'

Assessment

Lough Funshinagh SAC

Qualifying Interest - Turlough

9.3.25. A site survey of Lough Funshinagh has confirmed that the current extent of the turlough is greater than the mapped extent of the SAC. The habitat surveys found little evidence of indicator species of ‘3180 Turloughs’. Turlough extent is delineated by the extent to which the water regularly rises. The higher than average flood levels present in Lough Funshinagh during summer 2024 made survey for terrestrial indicator species difficult and lack of receding flood levels has meant that all of the turlough habitat at Lough Funshinagh is being negatively impacted by prolonged inundation.

9.3.26. The proposed scheme is anticipated to pump 300 l/s of water on a 24/7 basis out of Lough Funshinagh to limit the peak water levels closer to the pre-2016 historic high levels when the turlough would have been in flood. Therefore, there will be no habitat fragmentation to Lough Funshinagh arising from operation of the scheme.

9.3.27. Construction activities within the SAC will include the installation of a modified steel pump pontoon with four support posts at 100mm diameter driven into the ground and an access pontoon installed via a crane. The footprint of the floating pontoon within the SAC would be 25m^2. The poles are to be placed on the flooded improved agricultural grassland to secure the pontoon in position. This land does not contain any Annex I habitat or habitat of significant ecological importance. The total combined area of the posts would be approx. 300 cm^2. The effects would be localised, temporary and reversible and insignificant in scale with the location of the poles returned to agricultural grassland when the proposed scheme is decommissioned.

9.3.28. There is potential for accidental pollution event(s) during construction, operational and decommissioning stages. The measures to be employed during the construction and decommissioning stages as incorporated into the Construction and Environmental Plan (CEMP) and Sediment, Erosion and Pollution Control Plan (SEPCP) will preclude any adverse impacts on water quality. The proposed scheme design provides for a concrete bund surrounding the diesel generators. There is also the potential for introduction of invasive species during the construction and decommissioning stages. Best practice biosecurity measures are proposed in mitigation.

<u>Qualifying Interest - Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation</u>

9.3.29. The habitat surveys found no evidence of the habitat within the SAC. Due to the increased flood conditions at the lough, the previous extent of the QI habitat no longer exists within Lough Funshinagh SAC. Current water levels exceed the typical growth regime of the habitat. There is the potential that the proposed scheme, through lowering water levels, may improve conditions at Lough Funshinagh for habitat.

9.3.30. No predicted habitat loss, degradation or fragmentation can arise from the proposed scheme when the QI habitat does not exist. Additionally, no impacts arising from an accidental pollution event or introduction/spread of an INNS are anticipated to occur.

Conclusion:

9.3.31. Having regard to the nature and scale the proposed development, I am satisfied that following the implementation of the mitigation measures and any recommended conditions (incl. the management of accidental spills, and the control of invasive species) the proposed works would not have an adverse impact on the habitats or water quality in Lough Funshinagh SAC or introduce invasive species to the waterbody during any of the works. There would be no resultant adverse effects on these QI habitats with respect to their attributes and targets (incl. habitat area, habitat distribution, physical structure, vegetation structure, or vegetation composition).

9.3.32. I am satisfied that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of this European site in light of its conservation objectives (subject to the implementation of mitigation measures outlined above).

Lower River Shannon SAC

Qualifying Interest - Brook Lamprey/River Lamprey

9.3.33. An aquatic survey of the Cross River identified juvenile brook/river lamprey ammocoetes at sampling point S2. In light of impassable downstream barriers on the River Shannon, the individuals recorded at the proposed discharge location would likely be potadromous brook lamprey.

9.3.34. As the proposed scheme will involve installation of a new discharge to Cross River with associated increases in flows and the introduction of rock armour to the river banks, there is the potential that changes in habitat and water quality in Cross River may have an impact upon some juvenile brook lamprey individuals which may be weakly linked (through ammocoetes drift) to the Lower River Shannon SAC.

9.3.35. Any deterioration of biological or chemical water quality or smothering of the riverbed substratum because of siltation, accidental fuel spills or poorly managed in-stream works could have adverse resultant impacts on the QI species. I am satisfied that

the mitigation measures to be incorporated into the construction phase entail best practice measures for the prevention of accidental release of pollutants and to protect water quality.

9.3.36. In the event that juvenile lamprey are considered at risk, or located within the immediate discharge location where the riverbed and banks will be subject to protection measures, they will be translocated to suitable habitat upstream of the discharge during pre-construction electrofishing under licence

9.3.37. **Conclusion:**

9.3.38. I am satisfied that following the implementation of the mitigation measures and any recommended conditions (incl. the management of sediments & accidental spills, and ongoing water quality monitoring), the proposed scheme would not have an adverse impact on fisheries in the Lower River Shannon SAC. There would be no resultant adverse effects on the QI species with respect to their attributes and targets (incl. distribution, population structure & density, extent and distribution of spawning habitat, availability of juvenile habitat, & water quality)

9.3.39. I am satisfied that the proposed development individually or in combination with other plans or projects would not adversely affect the integrity of this European site in light of its conservation objectives (subject to the implementation of mitigation measures outlined above)

Lough Ree SAC and River Shannon Callows SAC

Qualifying Interest - Otter

9.3.40. Otter can have a range in territory of up to 18km with the species recorded at Lough Funshinagh. No couching sites or holts were observed at the seven sampling locations along Cross River. Riverbanks closer to the discharge area were considered to be unsuitable for couching and holt sites however, more suitable habitat for the species is present closer to the Shannon Callows. Spraints were recorded under road bridges over Cross River at sites S5 and S6 downstream of the proposed outfall.

9.3.41. Construction and decommissioning are anticipated to give rise to temporary and localised disturbance effects such as noise and visual disturbance through the presence of machinery and personnel both at Lough Funshinagh and Cross River.

9.3.42. Daily inspections of Lough Funshinagh shore are to be undertaken by the ECoW during construction and decommissioning stages who will inform personnel when works can commence without causing disturbance to otter. Deliveries by way of fuel tankers every fourth day is not anticipated to generate any significant disturbance as it would emulate background levels of the agricultural machinery that operate daily around Lough Funshinagh. It is anticipated the species would be habituated to the movement of machinery such as tractors and excavators for short periods.

9.3.43. Remote accessed trail camera(s) are to be installed in proximity to the pump intake compound to monitor for otters during the operational phase. If evidence of otter is identified this will be reviewed. If obvious sudden avoidance by otter of the pump intake compound is occurring, the Project Ecologist will review behaviour, consider whether this is significant and discuss, as necessary, with relevant NPWS staff as to whether revising pumping hours may be required.

9.3.44. Any deterioration of water quality in Cross River because of proposed works and resultant impacts on the availability of fish biomass for otter could have an adverse impact on the QI species. However, I am satisfied that following the implementation of the mitigation measures (incl. the measures to protect water quality & hence the availability of prey species) the proposed development would not have an adverse impact on otter. Therefore, there would be no resultant adverse effects on this QI species respect to its attributes and targets (incl. distribution, extent of terrestrial & freshwater habitats, couching sites & holts, and availability of fish biomass or connectivity).

9.3.45. **Conclusion:**

9.3.46. I am satisfied that the proposed development individually or in combination with other plans or projects would not adversely affect the integrity of these European sites in light of their conservation objectives (subject to the implementation of mitigation measures outlined above).

Residual Effects/Further Analysis

9.3.47. None identified

NIS Omissions

9.3.48. None noted.

Suggested Conditions

9.3.49. Application of mitigation measures are expressly provided for in the schedule of conditions below

9.3.50. I refer the Board to the WFD Compliance Report recommendation for the retention of a suitably qualified fluvial geomorphologist to oversee the works at the proposed outfall location.

Appropriate Assessment Conclusions

9.3.51. I consider that it is reasonable to conclude on the basis of the information on the file, which I consider adequate in order to carry out a Stage 2 appropriate assessment, that the proposed development, individually or in combination with other plans and projects would not adversely affect the integrity of the European site nos. 000611, 000440, 000216, and 002165 or any other European site, in view of the sites' Conservation Objectives.

10.0 Recommendation

On the basis of the above assessment, I recommend that the Board approve the proposed development subject to the reasons and considerations below and subject to conditions including requiring compliance with the submitted details and with the mitigation measures as set out in the NIS.

11.0 Reasons and Considerations

Having regard to:

(a) EU Directive on the Assessment and Management of Flood Risks (2007/60/EC)

(b) EU Habitats Directive (92/43/EEC),

(c) EU Water Framework Directive (2000/60/EC), as amended,

(d) European Union (Birds and Natural Habitats) Regulations 2011-2015,

(e) National Biodiversity Action Plan 2023-2020,

(f) the likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the likely significant effects of the proposed development on a European Site,

(g) the conservation objectives, qualifying interests for the Lough Funshinagh SAC (site code:000611), the Lough Ree SAC (site code: 000440), River Shannon Callows SAC (site code: 000216) and the Lower River Shannon SAC (site code: 002165),

(h) the policies and objectives of the Roscommon County Development Plan, 2022-2028,

(i) the nature and extent of the proposed works as set out in the application for approval,

(j) the information submitted in relation to the potential impacts on habitats, flora and fauna, including the Natura Impact Statement,

(k) the submissions and observations received in relation to the proposed development, and

(l) the report and recommendation of the person appointed by the Board to make a report and recommendation on the matter.

Appropriate Assessment

The Board agreed with and adopted the screening assessment and conclusion carried out in the Inspector's report that Lough Funshinagh SAC (site code:000611), Lough Ree SAC (site code: 000440), River Shannon Callows SAC (site code: 000216) and Lower River Shannon SAC (site code: 002165) are the only European Sites in respect of which the proposed development has the potential to have a significant effect.

The Board considered the Natura Impact Statement and associated documentation submitted with the application for approval, the mitigation measures contained therein, the submissions and observations on file, and the Inspector's assessment. The Board completed an appropriate assessment of the implications of the proposed development for the affected European Sites, namely Lough Funshinagh SAC (site code:000611), Lough Ree SAC (site code: 000440), River Shannon Callows SAC

(site code: 000216) and Lower River Shannon SAC (site code: 002165) in view of the sites' conservation objectives. The Board considered that the information before it was adequate to allow the carrying out of an appropriate assessment. In completing the appropriate assessment, the Board considered, in particular, the following:

i. the likely direct and indirect impacts arising from the proposed development both individually or in combination with other plans or projects,

ii. the mitigation measures which are included as part of the current proposal, and

iii. the conservation objectives for the European Sites.

In completing the appropriate assessment, the Board accepted and adopted the appropriate assessment carried out in the Inspector's report in respect of the potential effects of the proposed development on the integrity of the aforementioned European Sites, having regard to the site's conservation objectives.

In overall conclusion, the Board was satisfied that the proposed development, by itself or in combination with other plans or projects, would not adversely affect the integrity of the European Sites, in view of the sites' conservation objectives.

Proper Planning and Sustainable Development/Likely effects on the environment

It is considered that, subject to compliance with the conditions set out below, the proposed development would not have significant negative effects on the environment or the community in the vicinity, would not give rise to a risk of pollution, would not be detrimental to the visual or landscape amenities of the area, would not seriously injure the amenities of property in the vicinity, would not adversely impact on the cultural and archaeological heritage, would not interfere with the existing land uses in the area and would not interfere with traffic safety. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

12.0 **Conditions**

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, as amended by the details received by An Bord Pleanála on the 10th day of December 2024, except as may otherwise be required in order to comply with the following conditions. Where any mitigation measures set out in the Natura Impact Statement and Water Framework Directive Compliance Report or any conditions of approval require further details to be prepared by or on behalf of the local authority, these details shall be placed on the file and retained as part of the public record.

   Reason: In the interest of clarity and the proper planning and sustainable development of the area and to ensure the protection of the environment.

2. This approval is for a period of 24 months from the date of the commissioning of the proposed development after which time the use shall cease and the structures shall be removed from the site, unless a separate grant of approval has first been made for the continuation of the use and maintenance of the associated structures.

   Reason: To define the terms of the permission and to cater for orderly development of the area. To permit the Board to re-assess the situation in light of the circumstances at this time.

3. The mitigation and monitoring measures identified in the Natura Impact Statement and Water Framework Directive Compliance Report submitted with the application and in the applicant's submission received by An Bord Pleanála on the 10th day of December 2024, shall be implemented in full. Prior to the commencement of development, details of a time schedule for implementation of mitigation measures and associated monitoring shall be prepared by the local authority and placed on file and retained as part of the public record.

Reason: In the interest of protecting the environment, the protection of European Sites and in the interest of public health.

4. A suitably qualified ecologist and fluvial geomorphologist shall be retained by the local authority to oversee the site set up and construction, operation and decommissioning of the proposed development and implementation of mitigation measures. The ecologist and fluvial geomorphologist shall be present during the works. Upon completion of works, an ecological and fluvial geomorphology report of the site works shall be prepared by the appointed ecologist and fluvial geomorphologist and be kept on file as part of the public record.

   Reason: In the interest of nature conservation and biodiversity.

5. Prior to the commencement of development, the local authority, or any agent acting on its behalf, shall prepare in consultation with the project ecologist and relevant statutory agencies, a finalised Construction Environmental Management Plan (CEMP), incorporating all mitigation measures indicated in the Natura Impact Statement, Ecological Impact Assessment Report, Water Framework Directive Compliance Report and the applicant's submission received by An Bord Pleanála on the 10th day of December, 2024 and demonstration of proposals to adhere to best practice and protocols. The CEMP shall include:

   a. location and extent of silt fencing to be installed on site,
   b. specific proposals as to how the measures outlined in the CEMP will be measured and monitored for effectiveness,
   c. location of the site and materials compounds including areas identified for storage of construction waste,
   d. location of areas for construction site offices and staff facilities,
   e. details of appropriate mitigation measures for noise, dust and vibration and monitoring of such levels.

A record of daily checks that the works are being undertaken in accordance with the CEMP shall be maintained on file as part of the public record.

Reason: In the interest of protecting the environment and the European Site.

6. Prior to commencement of operation the following details shall be maintained on file as part of the public record:

   (i) the results of the 3D noise model and predicted operational noise levels at the nearest sensitive receptor,

   (ii) details of the proposed rehousing of residents, if necessary, during the operational phase of the development.

   Reason: In order to protect adjoining residential amenity.

7. The following nature conservation requirements shall be complied with:

   a. Prior to the commencement of development, details of measures to protect fisheries and water quality of Cross River shall be outlined and placed on file. Full regard shall be had to Inland Fisheries Ireland's published guidelines for construction works near waterways (Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters, 2016). A programme of water quality monitoring shall be prepared in consultation with the contractor, the local authority and relevant statutory agencies and the programme shall be implemented thereafter.

   b. No instream works shall be undertaken without prior consultation with Inland Fisheries Ireland.

   c. A programme of water quality monitoring of Lough Funshinagh shall be prepared in consultation with the contractor, the local authority and relevant statutory agencies and the programme shall be implemented thereafter.

d. A Hedgerow Restoration Plan shall be prepared prior to the decommissioning phase.

Reason: In the interests of biodiversity and nature conservation.

8. (a) The finalised Construction Environment Management Plan (CEMP) shall include the location of any and all archaeological or cultural heritage constraints relevant to the proposed development as set out in 'Lough Funshinagh Interim Flood Relief Scheme Archaeological Impact Assessment' and by any subsequent archaeological investigations associated with the project. The finalised CEMP shall clearly describe all identified likely archaeological impacts, both direct and indirect and all mitigation measures to be employed to protect the archaeological or cultural heritage environment during all phases of site preparation and construction activity.

(b) A Project Archaeologist shall be appointed to oversee and advise on all aspects of the scheme from detailed, post-consent, design, through inception to completion

Reason: To ensure the continued preservation [either in situ or by record] of places, caves, sites, features or other objects of archaeological interest.

9. The Local Authority and any agent acting on its behalf shall ensure that all plant and machinery used during the works should be thoroughly cleaned and washed before delivery to the site to prevent the spread of hazardous invasive species and pathogens.

Reason: In the interest of the proper planning and sustainable development of the area and to ensure the protection of the European sites.

I confirm that this report represents my professional planning assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence, directly or indirectly, the exercise of my professional judgement in an improper or inappropriate way.

Pauline Fitzpatrick
Senior Planning Inspector

December 2024

Appendix - EIA Screening Determination

A. CASE DETAILS		
An Bord Pleanála Case Reference	**ABP 320869 -24**	
Development Summary	**Interim Flood Relief Works Lough Funshinagh, Carrick, Co. Roscommon**	
	Yes / No / N/A	**Comment (if relevant)**
1. Was a Screening Determination carried out by the PA?	**Yes**	EIA not required
2. Has Schedule 7A information been submitted?	**Yes**	
3. Has an AA screening report or NIS been submitted?	**Yes**	AA Screening Report and NIS
4. Is a IED/ IPC or Waste Licence (or review of licence) required from the EPA? If YES has the EPA commented on the need for an EIAR?	**No**	
5. Have any other relevant assessments of the effects on the environment which have a significant bearing on the project been carried out pursuant to other relevant Directives – for example SEA	**Yes**	Water Framework Directive Compliance Report submitted

B. EXAMINATION	Briefly describe the nature and extent and Mitigation Measures (where relevant) (having regard to the probability, magnitude (including population size affected), complexity, duration, frequency, intensity, and reversibility of impact) **Mitigation measures** –Where relevant specify features or measures proposed by the applicant to avoid or prevent a significant effect.	Is this likely to result in significant effects on the environment? Yes/ No/ Uncertain
1. Characteristics of proposed development (including demolition, construction, operation, or decommissioning)		
1.1 Is the project significantly different in character or scale to the existing surrounding or environment?	The works required are small in scale entailing an intake pump in the lough, a pontoon, a small on shore compound housing pump units and an overground pipe through agricultural fields and under 2no. public roads and a private access road. Limited ground works and excavation are required and are restricted to the road crossings. All hedgerows and stone walls required to be removed to allow for the pipe will be replanted/rebuilt following its decommissioning.	**No**
1.2 Will construction, operation, decommissioning or demolition works cause physical changes to the locality (topography, land use, waterbodies)?	The compound will be constructed without excavating the existing ground. A combination of geogrid and geotextile will be placed over the vegetation on the existing surface within the footprint of the compound. A minimum thickness of 450 mm of imported stone (Class 6F or similar) will be placed on top of the geogrid and	**No**

	geotextile. The total footprint of the hardstand area at the will be c.1,150 m^2. No excavation works or vegetation required at the outfall location. A geotextile will cover the riverbed with rock armour to be used to hold the geotextile in place. Rock armour to be built up around the ends of the diffuser tee. Limited ground works and excavation are required and are restricted to the road crossings. The pumping will not lower the level of Lough Funshinagh, and by extension the groundwater level, below its normal range of fluctuation. On this basis there are no likely significant impacts on groundwater levels and flow. Maximum flow of 300 l/s of water to be discharged to Cross River. The hydraulic modelling along Cross River suggests the flooding of the Shannon Callows is driven by the River Shannon and not Cross River. There will be no significant change to the river levels and flooding regime of Cross River in the Shannon Callows area.	
1.3 Will construction or operation of the project use natural resources such as land, soil, water, materials/minerals or energy, especially resources which are non-renewable or in short supply?	No such materials required.	**No**
1.4 Will the project involve the use, storage, transport, handling or production of substance which would be harmful to human health or the environment?	The 4 no. double skinned diesel fuel tanks within the compound are to be within a reinforced concrete bund with upstand walls which will contain any fuel in the case of a spillage or leak.	

1.5 Will the project produce solid waste, release pollutants or any hazardous / toxic / noxious substances?	All waste arising in the construction and decommissioning phases to be managed in accordance with the provisions of the Waste Management Act, 1996, as amended, and to contribute to achieving the objectives set out in the Waste Action Plan for a Circular Economy. The following are the expected wastes to be generated during the decommissioning phase: • Concrete from HPU bund and Paladin post bases to be removed to a licensed facility • Geotextiles/ geogrid to be taken to licensed facility and reused following confirmation of acceptability • Stone aggregate to be taken to licensed facility and reused following confirmation of acceptability • Fencing (posts, wire and paladin) to be gather for re-use • Rock amour to be taken to licensed facility • Pipeline to be gather and re-used where possible	**No**
1.6 Will the project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	Best practice measures for prevention of accidental release of pollutants during construction and decommissioning phases set out in submitted CEMP. Appropriate storage and bunding of fuel within compound during operational phase as detailed above.	**No**

1.7 Will the project cause noise and vibration or release of light, heat, energy or electromagnetic radiation?	Minor noise impacts anticipated during construction and decommissioning phases. Construction anticipated to take 4 weeks. The hydraulic power packs are to be enclosed by a 4 metre high solid noise barrier. There is potential noise effects during operation at the nearest residence. Rehousing to be offered to the residents of the said dwelling for the duration of the scheme.	**No**
1.8 Will there be any risks to human health, for example due to water contamination or air pollution?	Some dust and noise during construction and decommissioning phases. Best practice measures set out in CEMP accompanying the application. The discharge of water from Lough Funshinagh to Cross River could potentially lead to a deterioration in water quality in either or both water bodies. A detailed assessment has been undertaken and suitable mitigation is proposed to ensure significant effects will not result. A water quality monitoring programme is proposed for the operational phase to monitor ongoing water quality.	**No**
1.9 Will there be any risk of major accidents that could affect human health or the environment?	The proposed development is proposed to temporarily alleviate the flooding associated with the lough.	

1.10 Will the project affect the social environment (population, employment)	The purpose of the project is to address the impacts of flooding on agricultural lands and dwellings in the vicinity. Minor disruptions to road users arising from works during construction and decommissioning phases.	
1.11 Is the project part of a wider large scale change that could result in cumulative effects on the environment?	No. The proposed development will be decommissioned on commissioning of permanent solution.	**No**
10. Location of Proposed Development		
2.1 Is the proposed development located on, in, adjoining or have the potential to impact on any of the following: - European site (SAC/ SPA/ pSAC/ pSPA) - NHA/ pNHA - Designated Nature Reserve - Designated refuge for flora or fauna - Place, site or feature of ecological interest, the preservation/conservation/ protection of which is an objective of a development plan/ LAP/ draft plan or variation of a plan	Lough Funshinagh is an SAC. Application accompanied by AA Screening Report and NIS. Cross River discharges into the River Shannon at the Shannon Callows SAC.	**No**
2.2 Could any protected, important or sensitive species of flora or fauna which use areas on or around the site, for example: for breeding, nesting, foraging, resting, over-wintering, or migration, be affected by the project?	Ecological Impact Assessment Report accompanying the application and summarised in the Schedule 7A information. The lough and surrounding small lakes and wetlands support a range of wintering and breeding bird species including qualifying interests of nearby SPAs.	**No**

	Otter and 2 no. badger setts recorded at the lake. Considered likely that bat roosts present around the lake. Pine martin recorded. Aquatic non-native species Canadian Pondweed recorded on lake. Otter spraints recorded along Cross River. Brook Lamprey recorded at location of discharge to river. Brown trout identified downstream and known to access upstream. White clawed crayfish noted on lower reaches of river. Best Practice measures during construction and decommissioning phases as set out in CEMP including use of silt fences. Implementation of all guidance outlined in Section 7.3 of the EcIA Report and in CEMP. Monitoring of flow of Cross River at 3 no. locations by OPW hydrometric gauges. Weekly water quality testing during construction and operational phases Ecological Clerk of Works to be appointed. Brook lamprey at outfall location to be translocated to a suitable site upstream. Scheduling of instream works outside brook lamprey spawning season and salmonid close season. Derogation to be sought if works to be undertaken in these periods. Mammal passage provision	

	Controls will be put in place to allow the pumping to be reduced or stopped if adverse effects are identified at flow gauges or as a result of water chemistry testing. As such, water quality impacts on Cross River, downstream designated sites, and aquatic species, such as white clawed crayfish, will be mitigated. A 10mm aperture fish screen with a net area of $2m^2$ through which water will enter the container within the lough will prevent fish and invasive macrophytes being sucked into the container. A repeat badger survey to be carried out after the first year of operation so that position of badger pipes and ramps can be reviewed.	
2.3 Are there any other features of landscape, historic, archaeological, or cultural importance that could be affected?	The application is accompanied by Archaeological Impact Assessment Report and is summarised in the Schedule 7A information. There are 33 recorded sites within the 1km study area. Due to the limited below ground impact, the proposed works will not result in physical impacts to any of the known archaeology located throughout the study area. Archaeological monitoring during construction with preservation in situ proposed as mitigation measures.	**No**
2.4 Are there any areas on/around the location which contain important, high quality or scarce resources which could be affected by the project, for example: forestry, agriculture, water/coastal, fisheries, minerals?	The purpose of the project to alleviate flooding of adjoining agricultural and residential lands.	**No**

2.5 Are there any water resources including surface waters, for example: rivers, lakes/ponds, coastal or groundwaters which could be affected by the project, particularly in terms of their volume and flood risk?	Water to be pumped to Cross River at a maximum rate of 300 l/s Application accompanied by Water Framework Directive Compliance Report	**No**
2.6 Is the location susceptible to subsidence, landslides or erosion?	No evidence of these risks	**No**
2.7 Are there any key transport routes(eg National primary Roads) on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the project?	The construction and decommissioning phases may cause minor disruption for those that use the local roads and private access road which the pipe is to cross.	**No**
2.8 Are there existing sensitive land uses or community facilities (such as hospitals, schools etc) which could be affected by the project?	The purpose of the project to alleviate the potential adverse impacts on residential and agricultural lands from flooding of the lough	**No**
11. Any other factors that should be considered which could lead to environmental impacts		
3.1 Cumulative Effects: Could this project together with existing and/or approved development result in cumulative effects during the construction/ operation phase?	The proposed development is temporary in duration and would be decommissioned on provision of permanent solution to the flooding of Lough Funshinagh.	**No**
3.2 Transboundary Effects: Is the project likely to lead to transboundary effects?	**No**	

3.3 Are there any other relevant considerations?	**No**	

C. CONCLUSION		
No real likelihood of significant effects on the environment.	**X**	EIAR Not Required
Real likelihood of significant effects on the environment.		EIAR Required

Inspector _____ **Date** _____

Approved (DP/ADP) _____ **Date** _____