

Water Supply Project Eastern and Midlands Region

Statutory Consultation: Response to Submissions Report

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Acronyms and Abbreviations

Acronym	Meaning
AA	Appropriate Assessment
AADT	Annual Average Daily Traffic
ACP	An Coimisiún Pleanála
AI	Artificial Intelligence
AOD	Above Ordnance Datum
BPS	Booster Pumping Station
BPT	Break Pressure Tank
BQE	Biological Quality Element
CBS	Community Benefit Scheme
CEMP	Construction Environmental Management Plan
CIEEM	Chartered Institute of Ecology and Environmental Management
CLO	Community Liaison Officer
CIS	Common Implementation Strategy
CPO	Compulsory Purchase Order
CRU	Commission for Regulation of Utilities
CWBPMP	Construction Waste and Byproduct Management Plan
DHLGH	Department of Housing, Local Government and Heritage
DMRB	Design Manual for Roads and Bridges
ECOW	Ecological Clerk of Works
Eflow	Environmental Flow
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
EU	European Union
FCV	Flow Control Valve
FOAR	Final Options Appraisal Report
FRA	Flood Risk Assessment
GDA	Greater Dublin Area
GDPR	General Data Protection Regulation
GEP	Good Ecological Potential
GES	Good Ecological Status
GHG	Greenhouse Gas
GWDTE	Groundwater Dependent Terrestrial Ecosystems
GWS	Group Water Scheme
HEFS	High-End Future Scenario

Acronym	Meaning
HEPA	High-Efficiency Particulate Air
HGV	Heavy Goods Vehicle
HMWB	Heavily Modified Water Body
HSE	Health Service Executive
IAQM	Institute of Air Quality Management
IFI	Inland Fisheries Ireland
INNS	Non-Native Invasive Species
IPC	Integrated Pollution Control
ISEP	Institute of Sustainability and Environmental Professionals
KER	Key Ecological Receptor
LAWPRO	Local Authority Waters Programme
LiDAR	Light Detection and Ranging
LLO	Land Liaison Officer
m ³ /s	cubic metres per second
MMaRC	Motorway Maintenance and Renewal Contractor
MRFS	Mid-Range Future Scenario
NHA	Natural Heritage Area
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
NSL	Noise Sensitive Location
NTA	National Transport Authority
NVMP	Noise and Vibration Management Plan
NWRP	National Water Resources Plan
OCC	Offaly County Council
OPW	Office of Public Works
OWP	Options Working Paper
PBR	Potential Bat Roost
Proposed Project	Water Supply Project Eastern and Midlands Region
PPV	Peak Particle Velocity
pNHA	Proposed Natural Heritage Area
POAR	Preliminary Options Appraisal Report
PWS	Public Water Scheme
PWWC	Passive Wedge-Wire Cylinder
REAC	Register of Environmental Actions and Commitments
RBMP	River Basin Management Plan
RSA	Road Safety Audit
RWI&PS	Raw Water Intake and Pumping Station
RWRP	Regional Water Resource Plan

Acronym	Meaning
RWRM	Raw Water Rising Mains
SAC	Special Area of Conservation
SCI	Special Conservation Interest
SEA	Strategic Environmental Assessment
S.I.	Statutory Instrument
SID	Strategic Infrastructure Development
SPA	Special Protection Area
SWMP	Surface Water Management Plan
TFEU	Treaty on the Functioning of the European Union
THM	Trihalomethane
TII	Transport Infrastructure Ireland
TMP	Traffic Management Plan
TPR	Termination Point Reservoir
uPVC	Unplasticised Polyvinyl Chloride
WFD	Water Framework Directive
WSIAR	Water Status Impact Assessment Report
WSP	Water Supply Project
WSPS	Water Services Policy Statement
WSSP	Water Services Strategic Plan
WTP	Water Treatment Plant
WwTP	Waste Water Treatment Plant
ZoI	Zone of Influence

1. Introduction

1. Uisce Éireann (hereafter referred to as the Applicant) acknowledges receipt of the letter sent by An Coimisiún Pleanála (ACP) on 09 April 2026, in respect to the Strategic Infrastructure Development (SID) planning application for approval for the proposed Water Supply Project Eastern and Midlands Region (hereafter referred to as the Proposed Project), under ACP reference number 323980.
2. The letter from ACP invited the Applicant to make a submission, as follows:

“The Commission hereby considers it appropriate to invite you to make a submission on the observations received in relation to the application. Please be advised that any response to the Commission’s invitation should not contain any additional reports or supplementary reports and should be confined to the issues raised in the observations received by the Commission.”
3. This Response to Submissions Report (hereafter referred to as this Report), and its supporting appendix (Appendix A), comprise the response of the Applicant to the issues raised in the submissions and observations received by ACP.
4. The Applicant notes that, should ACP consider it necessary, further clarification or information requests on any of the responses provided within this Report can be facilitated by the Applicant. The Applicant reserves its entitlement to further expand on its reply to these issues as may be appropriate at an Oral Hearing which may be held in relation to the planning application for the Proposed Project under ACP reference number 323980.

1.1 Overview of the Statutory Consultation Phase

5. The application for planning approval for the Proposed Project was submitted to ACP on 19 December 2025. The application documentation was placed on display during the period 6 January to 25 February 2026 (a seven-week period). Additionally, the application documentation was made available to view and download on a dedicated website (www.watersupplyproject.ie).
6. Prescribed bodies, the general public, landowners and other interested parties were able to make submissions / observations on:
 - The implications of the Proposed Project for proper planning and sustainable development;
 - The likely effects on the environment of the Proposed Project, if carried out; and
 - The likely significant effect of the Proposed Project on the integrity of a European site, if carried out.
7. A total of 114 submissions / observations were received, comprising 17 from prescribed bodies and 97 from general observers.
8. The Applicant is cognisant and appreciative of the time spent by all third parties in preparing these submissions. Each submission has been considered, and the Applicant has sought to ensure that the substantive matters raised in each are appropriately addressed in this Report. The matters raised by a single submission may be addressed in different parts of this Report, and Appendix A - Submissions Identification Table provides a summary of which sections of the Report each submission is addressed under.

1.2 Review of Submissions

9. For ease of reference, a unique identification number has been assigned to each submission. These identification numbers run from WSP_SUB_01 to WSP_SUB_114, as listed in Appendix A of this

Report, together with the name of the observer(s) and the ACP submission ID, as assigned on the letter from ACP, dated 09 April 2026.

10. An initial review of the submissions was undertaken to identify the main issues raised. This process was undertaken using Artificial Intelligence (AI), utilising the ChatGPT tool in a General Data Protection Regulation (GDPR) compliant manner. The tool grouped submissions into themes, based on the overall structure of the planning application documentation, including the various aspects of the Environmental Impact Assessment Report (EIAR) (e.g. planning, consultation, noise and vibration, traffic and transport, air quality etc.). The output of the ChatGPT tool was then manually audited by the Project Team.
11. The purpose of this process was to collate the issues relevant to each specialist / project team member to allow for a more refined analysis to be undertaken. This resulted in each submission undergoing two reviews (the initial theming review and a focused specialist review).
12. This approach allowed for similar types of issues to be grouped together under the relevant topic headings of the EIAR / other documents to provide a comprehensive response overall. This has also enabled the Applicant to respond to the substantive material issues, rather than a line by line response to each and every submission.
13. It is noted that a separate CPO Application (ACP Ref: 323982) has been submitted to ACP and is running in parallel to the SID Application (ACP Ref: 323980) to which this submission relates. Twenty-nine submissions were made in relation to the CPO application and are being addressed separately through the CPO application.

1.3 Response to Submissions

14. A significant number of issues raised in submissions have already been addressed in the Planning Report, EIAR, Natura Impact Statement (NIS) and other supporting documentation submitted to ACP as part of the SID planning application for the Proposed Project. To avoid significant replication of text, the Applicant has addressed the substance of the issues raised and provides references to the relevant sections of the planning application documentation throughout this Report.
15. Many responses cover matters which cut across different chapters, and therefore, cross referencing has been included to sign-post this to the reader. However, this Report in its entirety constitutes the Applicant's response to the submissions and should be considered, as a whole, when identifying the response to any particular matters raised in one the 114 submissions.
16. The Applicant notes that some of the submissions raise issues that are directed towards ACP, and the Applicant is not in a position to respond to same.

1.4 Key Concerns Raised in Submissions

17. The review and consideration of the 114 submissions received identified key areas of concern. These particular concerns and a summary of the Applicant's response are provided in the below sections.

1.4.1 Alternative Source

18. Submissions raised concerns that there are multiple viable alternatives to supplying Dublin with additional water that have not been adequately or fairly assessed, making the proposed Shannon pipeline unnecessary and environmentally damaging.

19. The Applicant acknowledges that many of the submissions raise concerns over the abstraction from the River Shannon and identify alternative options for a new supply of drinking water. These options have been considered at a strategic level within the National Water Resources Plan (NWRP) including the Regional Water Resources Plan – Eastern and Midlands (the Eastern and Midlands Plan) and were subject to Strategic Environmental Assessment. These alternatives have not been re-considered as part of the Proposed Project for the reasons set out in Chapter 5 – Consideration of Reasonable Alternatives of this report.

1.4.2 Leakage Reduction

20. Significant concern was raised in submissions Dublin's water supply problem should be addressed first by repairing and upgrading the existing water network rather than pursuing large-scale new abstractions such as the Shannon pipeline.
21. The approach to meeting the need for water in the Eastern and Midlands Region as set out in the NWRP including the Eastern and Midlands Plan includes ambitious leakage reduction targets. Consequently, leakage reduction is being undertaken in parallel, and in addition, to the Proposed Project. However, an additional supply of drinking water is needed even accounting for leakage reduction targets. Therefore, the Applicant does not agree that leakage reduction is an alternative option to the Proposed Project rather it is an entirely separate and necessary measure to the Proposed Project, neither measure will affect each other but are needed from an overall supply perspective as set out in the Eastern and Midlands Plan.

1.4.3 Peak Abstraction

22. Many of the submissions raised inter-related comments on the peak capacity of the Proposed Infrastructure, the risk that the abstraction could be increased in the future and placing limits or conditions on the peak abstraction.
23. The maximum abstraction would be controlled by the Abstraction Licence and additionally by the Planning Permission, (which is based on the EIAR which assesses a maximum abstraction of 300Mld), if granted.
24. The proposed infrastructure has been designed to deliver 300Mld of drinking water with an appropriate level of resilience to allow for maintenance and repair activities.
25. The Applicant can confirm that there is no intention to abstract more than 300Mld of raw water from the Parteen Basin, and the peak abstraction could not be increased without applying for additional consents and completing any environmental assessments necessary for such consent.

1.4.4 Impact of the Proposed Abstraction on Water Levels and Hydrological modelling

26. Many of the submissions raised inter-related comments on the modelling that has been undertaken and the effect on the relevant water bodies including the Lower River Shannon, Parteen Basin and Lough Derg.
27. The term Old River Shannon is used in reference to the minimum compensation flow that needs to be passed downstream from the Parteen Basin. The Lower River Shannon refers more widely to the lower catchment of the River Shannon.
28. In response a stand alone chapter has been included in this report, Chapter 11 (Water (Hydrological Modelling and Water Levels)), to address these matters together.

1.4.5 Assessment of Low Flow and Drought Conditions

29. Submissions raised concern about inadequate assessment of low flow or drought conditions in the EIAR. Concerns that the EIAR is based on an assessment of the effect of the Proposed Project on the average flow in the River Shannon and that the effect on low flows / drought flows have not been assessed.
30. A full assessment of the effect of the Proposed Project abstraction has been undertaken reported in full in the EIAR, including but not limited to:
- EIAR Chapter 8 (Biodiversity);
 - EIAR Chapter 9 (Water);
 - EIAR Appendix A9.1 (Abstraction Assessment); and
 - EIAR Annex A (Hydrological Modelling Report) to Appendix A9.1.

1.4.6 Reduction in the Statutory Minimum Compensation Flow down the Old River Shannon

31. A large number of the submissions raised concerns about the effect of the Proposed Project on the Old River Shannon, and the minimum statutory compensation flow of 10m³/s. Multiple responses have referred to a 30% reduction in the minimum statutory compensation flow down the Old River Shannon as being the impact which should have been modelled and assessed. These submissions are based on the abstraction for the Proposed Project (a maximum of 3.47m³/s) resulting in an equivalent reduction from the minimum statutory compensation flow of 10m³/s which would be a 30% reduction to 6.53m³/s.
32. It is not correct that there would be a 30% reduction in the minimum statutory compensation flow during a drought event. This is because ESB and the Applicant have acknowledged that maintaining the minimum statutory compensation flow is a requirement (this is set out in the Draft Water Abstraction Document submitted as part of the Strategic Infrastructure Development Planning Application documents).
33. As set out in Hydrological Modelling Report (Annex A to Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) the EIAR) in Table 2.1 the operating rules included within the model maintain the statutory minimum compensation flow and consequently, the supply of water for the Proposed Project abstraction would be met by the following:
- In normal (non-drought / non-flood) conditions ESB maintains the minimum compensation flow down the Old River Shannon and the abstraction for the Proposed Project would be facilitated from management of the water being used in power generation.
34. In a drought or flood scenario the abstraction for the Proposed Project will be met from water storage within the Parteen Basin. The hydrological modelling has demonstrated that water levels can be maintained above the required minimum level, whilst meeting the statutory minimum compensation flow during a drought equivalent to the worst drought on record, allowing for future climate change, with the Proposed Project in operation at its peak abstraction, based on historic and current operating principles.

1.4.7 Future Change to the in the Statutory Minimum Compensation Flow down the Old River Shannon

35. Many of the submissions that raise concerns over the impact on the Lower River Shannon assert that the assessment has not adequately addressed the likelihood that the statutory minimum compensation flow will change in the future. The assessment does not assume that the historic origin of the 10 m³/s statutory minimum compensation flow is determinative for Water Framework Directive (WFD)/Habitats Directive compliance. Instead, the assessment is based on the current statutory flow regime, which is

legally binding and forms part of the existing hydrological baseline for the affected water bodies. ESB maintains this minimum compensation flow under its statutory obligations, and the Proposed Project will not alter, constrain or influence these requirements.

36. The WFD requires that a proposed activity must not cause deterioration in the status of any affected water body or prevent the achievement of environmental objectives.
37. The Water Status Impact Assessment Report (WSIAR) therefore evaluates whether the abstraction could affect the ecological or chemical status of the relevant water bodies given the actual flow regime that will continue to operate, including the statutory compensation flow and the fish pass flow. The assessment does not rely on the 10 m³/s flow being ecologically optimal; rather, it evaluates whether the Proposed Project would introduce any additional pressure that could worsen conditions relative to the existing baseline.
38. The hydrological modelling tests the system under varying scenarios, including normal, flood and drought conditions – the latter two being when ecological sensitivity is most prevalent, potentially.
39. The results demonstrate that the abstraction does not give rise to hydrological changes of a magnitude capable of causing deterioration of any WFD quality element or compromising the achievement of Good Ecological Status or Good Ecological Potential. The WSIAR appropriately assesses the Proposed Project against the current statutory flow regime and demonstrates that the abstraction will not cause deterioration or impede the achievement of WFD objectives.
40. Under the Habitats Directive, a proposed plan or project shall not be authorised where it would adversely affect, or risk adversely affecting, the integrity of a site, including by undermining the conservation objectives established to secure the attainment or maintenance of the favourable conservation status of the relevant qualifying interest
41. The Natura Impact Statement (NIS) assesses, on the basis of the same modelling outputs, whether the proposed abstraction would impede the attainment of the European site's (Lower River Shannon Special Area of Conservation (SAC)) conservation objectives, and demonstrates that the abstraction will not prevent the achievement of those objectives necessary to secure the recovery and maintenance of the favourable conservation status of the relevant qualifying interests.
42. These assessments also inform the conclusions of the EIAR which has to account for future changes in the baseline.
43. Any future baseline regime would be decided at a programmatic level, through the River Basin Management Plan (RBMP), national policy or a regulatory process, and is independent of the Proposed Project.
44. The overall conclusion of all the assessments is that the abstraction does not limit or prejudice the State's ability to revise compensation flows in the future to achieve a more naturalised flow regime, if this were required.

1.4.8 Potential Impact of the Proposed Abstraction on Habitats and Species

45. Submissions raised concerns about the potential impact of the proposed abstraction on habitats and species as the proposed abstraction at Parteen Basin lies within the Lower River Shannon SAC and the wider Natura 2000 network and presents a serious risk of significant, potentially irreversible ecological harm.
46. Potential impacts associated with the proposed abstraction during the Operational Phase of the Proposed Project are assessed in Chapter 8 (Biodiversity) of the EIAR and in the NIS. The assessments considered a range of potential impacts, including hydrological changes, the introduction or spread of invasive non-native species (INNS), disturbance or displacement of fauna, pollution risks, and potential mortality risks.

- 47. The hydrological model demonstrates there would be no significant effect on water levels and the flow regime either upstream or downstream of the Proposed Project, therefore, the proposed abstraction would not have any likely significant effect on habitats and species within Parteen Basin and the wider River Shannon catchment.
- 48. None of the potential direct or indirect impacts associated with the Proposed Project would affect the conservation objectives of any of the qualifying interest habitats or species of the Lower River Shannon SAC. Mitigation measures are included to ensure the retention and protection of qualifying interest habitats, to ensure that the structural integrity and functioning of the habitats within the SAC are not affected during the Construction Phase or Operational Phase.
- 49. While no adverse effects on the integrity of the Lower River Shannon SAC are predicted, some minor residual effects on biodiversity have been identified. However, these residual effects are limited in scale and extent and would not significantly affect the ecological structure, function, or overall biodiversity value of Parteen Basin. The integrity and conservation objectives of the Lower River Shannon SAC would also remain fully maintained, and the site will continue to support its qualifying habitats and species in a favourable condition.

1.4.9 Adequacy of the Findings of the Appropriate Assessment

- 50. Across a wide range of general observer submissions, there is broad and consistent concern that the Appropriate Assessment (AA) for the Proposed Project fails to meet the strict requirements of Article 6(3) of the Habitats Directive. The Applicant does not agree with the concerns raised.
- 51. The Applicant has prepared an NIS in accordance with the provisions of Part XAB of the Planning and Development Act, 2000 (as amended), to support the competent authority in undertaking an Appropriate Assessment (AA) of the Proposed Project. The NIS was informed by the best available scientific knowledge and data and included a comprehensive and robust scientific examination of the potential implications of the Proposed Project for European sites in view of their conservation objectives, in accordance with Article 6(3) of the Habitats Directive.
- 52. The assessment considered the potential for ex-situ effects, including impacts arising via hydrologically/hydrogeologically connected pathways, as well as impacts on species and supporting habitats located outside designated European sites, where such habitats are functionally linked to the conservation objectives of European sites. It further assessed the potential for in-combination effects with other plans and projects, having regard to the conservation objectives and ecological requirements of relevant SACs and Special Protection Areas (SPAs). The NIS applied the precautionary principle throughout and evaluated the Proposed Project in light of clearly defined conservation objectives for each European site. Where potential pathways for impact were identified, mitigation measures were incorporated into the design, construction, and operation of the Proposed Project to avoid or reduce adverse effects on the integrity of European sites.
- 53. The Proposed Project does not give rise to adverse effects on the integrity of the European site, either alone or in-combination with other plans or projects. The assessment demonstrates that the proposal does not undermine the conservation objectives of the site, nor does it result in deterioration of the structure or function of qualifying habitats or the conservation status of qualifying species.
- 54. Accordingly, the competent authority is provided with sufficient information to undertake an AA and to reach a reasoned conclusion, as required under Article 6(3) of the Habitats Directive. The findings of the NIS and EIAR demonstrate that the Proposed Project complies fully with the requirements of the Habitats Directive and the Birds and Natural Habitats Regulations, and that no derogation under Article 6(4) is required.

1.4.10 Adequacy of the Water Framework Directive Assessment

55. Submissions raised concerns regarding compliance with the WFD, the adequacy of the assessment undertaken, and the application of specific WFD requirements. The Applicant does not agree with the concerns raised.
56. The Applicant considers that the Proposed Project is fully compliant with the WFD and that a comprehensive and proportionate WFD compliance assessment has been carried out and presented in the Water Status Impact Assessment Report (WSIAR) and the wider EIAR. The assessment applies the correct legal test under Article 4(1) of the WFD, examining whether the Proposed Project may cause deterioration in the status of any surface water or groundwater body, or jeopardise the achievement of good status or good ecological potential. This assessment takes account of baseline conditions, project design parameters, mitigation measures and relevant hydrological scenarios. The WSIAR evaluates potential effects on surface water and groundwater receptors and Annex V quality elements, including lakes, and is informed by detailed hydrological modelling presented in EIAR Appendix A9.1 – Abstraction Assessment. That modelling includes assessment of low-flow and drought conditions and demonstrates that predicted changes in flows and water levels are extremely small and within the natural and operational variability of the system.
57. The WFD compliance assessment in the WSIAR focuses on project-related effects and realistic pathways of impact, including consideration of indirect and cumulative effects where relevant. The assessment demonstrates that the Proposed Project will not affect the status of a water body or any Annex V quality element and therefore the Proposed Project does not require reliance on the derogation mechanisms under Articles 4(6) or 4(7) of the WFD.
58. The absence of a separate Article 4(7) assessment reflects correct application of the Directive. The legal requirement is not to demonstrate that deterioration could never occur in any hypothetical circumstance, but to show, on the basis of objective evidence and regulatory controls, that deterioration and prevention of Good Ecological Status or Good Ecological Potential will not occur. That test has been met as documented in the WSIAR for the Proposed Project.

1.4.11 Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth

59. Submissions raised concerns about the potential for the reduction of water levels resulting from the proposed abstraction to result in increased pollution concentration and the promotion growth of toxic algae as well as the impacts of Algae Blooms on human health.
60. Findings from the water quality modelling, which are reported in EIAR Appendix A9.1 (Abstraction Assessment), as well as Annex B of Appendix A9.1 (Water Quality Modelling Report) show that across all modelled scenarios, which included climate change, predicted changes in water quality were minimal and within the natural variability of the system. The modelling indicates that the change in water quality introduced by the operation of the Proposed Project would have a neutral effect on water quality in Lough Derg and Parteen Basin compared with the baseline water quality conditions. Given the neutral effect on water quality, which includes nitrate and orthophosphate levels (which are key nutrients in the formation of algal bloom), the Proposed Project would not cause occurrence or worsen the occurrence of harmful algal blooms.

1.4.12 Development Contributions and Bonds

61. Offaly and Tipperary County Council both made submissions looking for a condition requiring the Applicant to provide a bond for road reinstatement and specific development contributions. In relation to the bonds, ACP does not have the power to provides these conditions when granting planning

permission in respect of SID development under section 37A to J of the Planning and Development Acts. For SID development if damage is caused to roads, by any person, local authorities may recover the costs of repair under various sections of the Roads Act 1993 and the Water Services Act 2014. See Guidelines for Managing Openings in Public Roads 2017 at [guidelines-for-managing-openings-in-public-roads.pdf](#).

62. In relation to the development contributions, section 48 of the Planning and Development Act 2000 (as amended) (the “Planning Act”) enables a planning authority, when granting an ordinary planning permission under section 34, to include conditions requiring the payment of a development contribution. This contribution goes towards funding infrastructure or facilities which will be provided for, or, on behalf of the local authority and that will benefit the local area. This does not ordinarily apply to applications made under a section 37E as these are projects that are by their nature deemed to be of strategic or economic importance to the State or region.
63. In the case of Tipperary, they have requested that Class 17 and Class 18 (levy on abstraction) be applied to the Proposed Project. The Applicant does not believe there is justification or rationale to apply this contribution for a number of reasons, which are more particularly set out in Chapter 3 (Planning) and Chapter 21 (Material Assets) of this report. As set out therein there is no financial burden on Tipperary associated with the Proposed Project or no authority in planning law for charging abstractors for abstracting water. The Applicant submits that its Community Benefit Scheme submitted with the SID planning application will propose a more equitable and proportionate utilisation of limited public taxpayers’ money.
64. In relation to Offaly County Council’s submissions, they propose a levy of €100,000 per kilometre for the Shannon pipeline, which in the Applicant’s view is disproportionate. Offaly County Council has not set out the basis for the contribution levied in its Scheme and it seems this is targeting a single project to be carried out by an identified and specified developer, i.e. the Applicant.

1.4.13 Consent Conditions

65. A number of submissions reference consent conditions. The Proposed Project represents one of the most significant infrastructural projects undertaken in the State, spanning an area of approximately 1,233 hectares (ha) across six County Council jurisdictions: Tipperary County Council, Clare County Council, Limerick City and County Council, Offaly County Council, Kildare County Council and South Dublin County Council. As is standard in all planning permissions, certain things will need to be agreed with local authorities prior to commencement of development. In this instance, there are six local authorities to engage with, all with different activities and works potentially taking place at different times. We would ask that the consent conditions inserted in any grant of planning permission, reflect the division of development as set out in the Planning Report submitted with the SID Planning Application; with consent conditions linked to works taking place in the local authority area, rather than a blanket requirement for the entire development.
66. In addition, certain works will span multiple county councils and may take place at different times, for instance, pipeline installation works across Offaly, Kildare and South Dublin. Therefore, we are suggesting a condition which requires a ‘Compliance Framework’ to be submitted by the Applicant, which would set out how and when various pre-commencement documents will be submitted to the relevant local authorities. It would also make sense for there be a mechanism to update the pre-commencement submission if minor updates were required at a later date. We would suggest that this is a prudent approach to a project of this size and scale. Further detail is set out in section 2.9 Overarching Matters.

1.4.14 Statutory Consents

67. A prescribed body submission stated that all statutory consents and licences required to commence construction works on-site shall be obtained prior to works commencing, including but not limited to: Site notices, construction commencement notices, licence to connect to existing utilities (including water) and mains sewers, where required, abstraction and / or discharge licenses, where required, and road opening / closure licences, etc.
68. The Applicant would simply respond to say that given the scale of the Proposed Project and its linear nature it will be carried out in phases. The relevant consents required for the construction work to commence, on a particular phase, will be obtained prior to construction works being undertaken in that Local Authority area.

1.5 Structure of this Report

69. Section 1 (Introduction) of this Report outlines the requirements of ACP, as set out in its letter dated 09 April 2026, the Applicant's approach to reviewing and responding to issues raised in submissions received by ACP, and the structure of the overall response.
70. Chapter 2 to Chapter 27 of this Report include all responses to submissions under the structure of the EIAR and other planning application document topics and this is summarised in Table 1.2. Many responses cover matters which cut across different chapters, and therefore, cross referencing has been included to sign-post this to the reader. However, this Report in its entirety constitutes the Applicant's response to the submissions and should be considered, as a whole, when identifying the response to any particular matters raised in one the 114 submissions.
71. Chapter 2 to Chapter 27 of this Report are structured around three broad sections:
- General matters raised in all general observer and Prescribed Body submissions;
 - Specific matters raised in general observer submissions; and
 - Specific matters raised by Prescribed Bodies.
72. General matters related to broad issues raised by multiple respondents and will include Prescribed Bodies where they have raised general matters that are consistent with other submissions. Specific matters relate to narrow queries or queries raised by only a small number of respondents. Specific matters submitted by Prescribed Bodies relate to matters raised by the Prescribed Bodies which are not covered under the general matters section. The Applicant has responded to the substantive material issues identified rather than a line by line response to each and every submission.

Table 1.1: Structure of this Report

Chapter	Summary of Content
1. Introduction (This chapter)	Overview of this Report
2. Planning	Considers submissions related to Planning Compliance including policy compliance and the community benefit scheme.
3. Overarching Matters	Considers submissions that raised broad, cross cutting topics.
4. Consultation and Communications	Considers submissions related to the adequacy of consultation and engagement matters.
5. Consideration of Reasonable Alternatives	Considers submissions that raised alternatives to the Proposed Project.
6. Proposed Project Description	Considers submissions related to the design of the Proposed Project.
7. Construction and Commissioning	Considers submissions related to the design or components of the works needed to construct and commission of the Proposed Project.

Chapter	Summary of Content
8. Noise and Vibration	Considers submissions related to noise or vibration effects, assessment and mitigation measures.
9. Traffic and Transport	Considers submissions related traffic and transport effects, assessment and mitigation measures.
10. Biodiversity	Considers submissions related to biodiversity effects, assessment and mitigation measures.
11. Water (Hydrological Modelling and Water Levels)	Considers submissions related to assessment and modelling of the Parteen Basin, lough Derg, River Shannon including modelling and drought effects.
12. Water (General)	Considers submissions related to water effects, assessment and mitigation measures (other than those addressed in Chapter 11).
13. Soils, Geology and Hydrogeology	Considers submissions related to soils, geology and hydrogeology effects, assessment and mitigation measures.
14. Agriculture	Considers submissions related to agricultural effects, assessment and mitigation measures.
15. Air Quality	Considers submissions related to air quality effects, assessment and mitigation measures.
16. Climate	Considers submissions related to climate effects (including carbon and climate resilience), assessment and mitigation measures.
17. Population	Considers submissions related to population effects (including tourism and recreation), assessment and mitigation measures.
18. Human Health	Considers submissions related to human health effects, assessment and mitigation measures.
19. Landscape and Visual	Considers submissions related to landscape and visual effects, assessment and mitigation measures.
20. Cultural Heritage	Considers submissions related to cultural heritage effects, assessment and mitigation measures.
21. Material Assets	Considers submissions related to effects on material assets, the assessment and mitigation measures.
22. Resource and Waste Management	Considers submissions related to resource and waste management effects, assessment and mitigation measures.
23. Risk of Major Accidents and / or Disasters	Considers submissions related to the risk of major accidents and or disasters, the assessment and mitigation measures.
24. Cumulative Effects and Interactions	Considers submissions related to noise or vibration effects, assessment and mitigation measures.
25. Natura Impact Statement (NIS)	Considers submissions related to the NIS.
26. Water Status Impact Assessment Report (Water Framework Directive (WFD))	Considers submissions related to WFD.
27. Additional Topics	Considers submissions related to matters not covered in Chapters 2 to 27.
Appendix A – Submissions Identification Table	This provides a reference for each of the submissions and identifies where the matters raised are addressed in Chapters 2 to 27.

1.6 References in this Report

73. There are extensive references to the planning application documentation in this Report while providing responses to the issues raised in submissions. The structure of the relevant planning application documentation is outlined in Table 1.2.
74. In addition, this Report takes the same approach as adopted in the SID Planning Application documents in distinguishing between different stages of the development of the project by using the following terminology:
 - ‘Previous iterations of the project’ refers to the In-Flight Water Supply Project developed prior to the adoption of the NWRP (including the Regional Water Resources Plan – Eastern and Midlands (the Eastern and Midlands Plan)).

- The 'Proposed Project' refers to the project that planning permission is being sought for as described in Chapter 4 (Proposed Project Description) in this EIAR and that has taken account of the conclusions of the NWRP (including the Eastern and Midlands Plan). The Proposed Project aligns with the Preferred Approach for the Eastern and Midlands Region, a New Shannon Source with transfers, as set out in the Eastern and Midlands Plan.

Table 1.2: Structure of the Relevant Planning Application Documentation for the Proposed Project

Documentation Category	Details
Statutory	SID Application Cover Letter
	SID Application Form
	SID Site Notice
	Newspaper Notices
	Prescribed Bodies Letters
	Planning Application Schedule of Drawings
Planning	SID Planning Report
	Material Contravention Statement
	SID Engineering Report
	Draft Water Abstraction Document
	SID Consultation Report
	Community Benefits Scheme
	Planning Drawing Project Overview
	Site Notice Locations
	Raw Water Intake and Pumping Station Planning Drawings
	Water Treatment Plant Planning Drawings
	Break Pressure Tank Planning Drawings
	Booster Pumping Station Planning Drawings
	Flow Control Valve Planning Drawings
	Termination Point Reservoir Planning Drawings
	Pipeline Long Sections Planning Drawings
	38kV Planning Drawings
	Landscape Drawings
	Standard Details Planning Drawing
Environmental	Environmental Impact Assessment Report Volume 1 - Non-Technical Summary
	Environmental Impact Assessment Report Volume 2 – EIAR Main Report (comprising Chapter 1 to Chapter 5)
	Environmental Impact Assessment Report Volume 3 – Environmental Assessment (comprising Chapter 6 to Chapter 20)
	Environmental Impact Assessment Report Volume 4 – Summary (comprising Chapter 21 and Chapter 22)
	Environmental Impact Assessment Report Volume 5 – Drawings and Figures
	Environmental Impact Assessment Report Volume 6 – Appendices
	Natura Impact Statement

Response to Submissions Report

Documentation Category	Details
	Appropriate Assessment Screening Report
	Water Status Impact Assessment Report

2. Overarching Matters

75. A number of the submissions that were received by ACP regarding the Proposed Project related to matters that the Applicant considered were of an overarching nature, and therefore, they have been included in this Chapter, instead to the topic-specific chapters (4 to 26).
76. This Report and its supporting appendix comprise the response of the Applicant to the issues raised. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 5 (Consideration of Reasonable Alternatives);
 - Chapter 16 (Climate);
 - Chapter 25 (Natura Impact Statement); and
 - Chapter 26 (Water Status Impact Assessment Report (Water Framework Directive)).
77. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
78. The submissions included within this Chapter include the business case for the Proposed Project, compliance with the Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) directive, the adequacy of environmental mitigation measures and the need for further consents.

2.1 Status of the Regional Water Resources Plan

79. The following submissions challenged the status of the Regional Water Resource Plan which forms the basis of the need for the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_22	Michael Reidy
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris

80. The submissions raised concerns that the project lacks clear legislative authority for water abstraction, relying instead on the Applicant's Water Resource Management Plans, which it is argued has no clear statutory basis.
81. The submissions state that these plans are viewed as self-defined, assuming authority without corresponding responsibility for the water bodies affected. It is argued that such plans require explicit legislative regulation, similar to practices in other jurisdictions, and that water planning would be more effective if conducted at the scale of whole catchments, such as treating the Shannon as a single entity or adopting a national approach aligned with River Basin Management Plans.

2.1.1 Applicant's Response

82. The Applicant is the national authority for the provision of water services with responsibility for the functions assigned to it by or under the Water Services Acts 2007 to 2022. These functions include, inter alia, "the abstraction, impoundment, treatment, purchase or supply of water for drinking or any other purpose...". In addition, section 61 of the Water Environment (Abstractions and Associated Impoundments) Act, 2022 provides the Applicant with the power to carry out a public abstraction. The Applicant clearly has statutory authority for water abstraction.

83. The requirement to prepare and implement a NWRP is contained in a number of places, for instance, inter alia, (i) the Water Services Strategic Plan (WSSP) required pursuant to section 33 of the Water Services (No. 2) Act 2013 (as amended) (the 2013 Act), (ii) the Water Services Policy Statement (WSPS) prepared by the Minister for Department of Housing, Local Government and Heritage (the Minister) pursuant to section 32A of the of the 2013 Act, (iii) the various cycles of the River Basin Management Plans (RBMP) and (iv) the Water Services Sectoral Adaptation Plan.
84. Section 33 of the 2013 Act requires the Applicant to prepare and submit a WSSP to the Minister for the Department of Housing, Local Government and Heritage (DHLGH) for approval. The WSSP must take the form as directed from the Minister and sets out the Applicant's objectives in relation to the provision of water services and how these are to be achieved. The WSSP is a high level national plan and within it sets out the specific implementation plans / actions required to achieve the objectives of the WSSP. A key objective of the WSSP 2015 was to prepare and implement a NWRP and the Applicant delivered this. The most recent WSSP 2050 includes the continued requirement to implement and review the NWRP, which recognises it as "a pivotal action for improving water supply infrastructure to ensure resilient water services".
85. Section 32A of the 2013 Act requires the Minister to prepare a Water Services Policy Statement, which contains information concerning the policy objectives and priorities of the Government regarding the provision of water services in the State. Since 2014, the DHLGH have prepared and published two WSPS, one issued in 2018 and the second in 2025. The delivery and implementation of the NWRP is included as an objective in both of these WSPS.
86. The requirement for the NWRP is also contained in the various cycles of the River Basin Management Plans (RBMP). In the 3rd Cycle RBMP 2022 –2027 (The Water Action Plan 2024) the adoption and implementation of the NWRP is clearly outlined as a principal action for "Uisce Éireann to implement that National Water Resources Plan and associated regional plans", to ensure security of supply and sufficient capacity in drinking water. The 2nd Cycle RBMP 2018-2022, had outlined "that Irish Water is developing the NWRP" as it stated that "Irish Water has statutory responsibility to ensure the proper and effective management of water resources nationally, and to ensure that all customers have access to a safe and secure drinking-water supply".
87. The NWRP is called out as an adaptation measure under all the identified acute priority impacts within the Water Services Sectoral Adaptation Plan.
88. In addition, the Commission for Regulation of Utilities (CRU) was initially tasked with reviewing the project in 2018 and was later appointed as the external assurance body for water services under the Government's Public Spending Code (PSC) in 2021, and was tasked to carry out an independent review of the project under the PSC External Assurance Process in line with the DHLGH sectoral guidelines. This review included an assessment of the alternatives considered in the Regional Water Resource Plan (RWRP) and concluded that the proposed project was the clear best option for meeting the deficit in the Eastern and Midlands Region.

2.2 Population Growth Forecast

89. The submission from An Taisce raised specific issues in relation to population growth forecasts:

Unique ID	Name of Individual or Organisation
WSP_SUB_80	An Taisce

90. The submission stated that the An Taisce noted during the non-statutory consultation that the Applicant's population growth forecasts for the Greater Dublin Area appeared to be outdated due to

reliance on 2016 census data, which would be likely to underestimate the amount of water supply required throughout the duration of the project.

2.2.1 Applicant's Response

91. The approach used in this consultation is based on the NWRP Framework Plan (Irish Water 2021a), which applies a consistent method to assess water supply and demand across all 539 public Water Resource Zones in Ireland.
92. When the Applicant plans for the future, it uses population growth figures from trusted national sources — including the National Planning Framework, Regional Spatial and Economic Strategies, and Local Authority Development Plans.
93. The project's demand projections, including sensitivity analysis, were independently, expertly reviewed and deemed appropriate.
94. The Applicant regularly reviews new data through a formal monitoring process, as outlined in Chapter 8 of the NWRP Framework Plan (Irish Water 2021a) and are confident our forward projections remain robust.

2.3 Abstraction Licensing

95. The following submissions commented on the requirements for an abstraction licence:

Unique ID	Name of Individual or Organisation
WSP_SUB_22	Michael Reidy
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_85	Environmental Protection Agency (EPA)
WSP_SUB_94	Health Service Executive (HSE) - National Office for Environmental Health Services
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

96. The general observer submission from Michael Reidy raised concerns that the planning application being submitted in advance of the necessary abstraction licence is premature because it anticipates the outcome of the licence limits.
97. The general observer submissions from Killaloe Ballina District Angler's Association and The Lough Derg Anglers Association stated that ESB's statutory role is centered on electricity generation, not water abstraction, and it is recommended that ESB and the Applicant submit a joint application for an abstraction license to the Environmental Protection Agency (EPA).
98. The prescribed body submission from Clare County Council stated that the abstraction of water from Lough Derg will require a separate abstraction licence from the EPA. The submission continued that it considered that the outcome of any future abstraction licencing process will need to align in terms of rate of abstraction, hydrological impacts, ecological impacts, and groundwater protection as outlined in the planning application documentation, and any rates of abstraction outlined in the planning application must also be applied to the abstraction licence application with no discrepancies in the daily abstraction rates.

99. The prescribed body submission from Limerick County Council stated that there is no consideration of whether the abstraction licence could later be increased, whether the pipeline is being built with surplus capacity, or whether the treatment plant could be upgraded. The submission also queried how planning permission can be sought in the absence of an abstraction licensing framework in place, and that the legal authority, oversight and accountability for allocating and managing this abstraction are not clearly set out in legislation, so there are serious governance flaws with this proposal.
100. The prescribed body submission from Tipperary County Council stated that The Water Environment (Abstractions and Associated Impoundments) Act 2022 (WAA) requires abstractions of 25 cubic metres or more in any 24-hour period to be registered with the EPA, and all abstractions of 2,000 cubic metres or more in any 24-hour period now require a licence from the EPA. The submission continued that the abstraction for the Proposed Project will be greater than 2,000 cubic metres in any 24-hour period and as such, there will be an application for an abstraction licence. The submission also raised concerns regarding the relationships between the project and the ESB abstraction and the impoundment licensing process for the Parteen Basin, including the interdependency, their sequencing, their environmental assessment (including cumulative effects) and the scope of the 'whole' project for their respective EIA processes are not considered within this EIAR, and this is a matter of concern.
101. The prescribed body submission from the Health Service Executive (HSE) stated that the HSE were consulted in January 2026 on the scope of the EIA that will accompany the application to the EPA on the Water Abstraction License. The submission continued that a submission has been made to the Applicant by the dated 23rd February 2026 in this regard. The submission further stated that the HSE recognises that whilst the water abstraction license is considered under a separate regulatory framework, it is integral to the planning application and the accompanying EIAR.

2.3.1 Applicant's Response

102. The Applicant agrees that an abstraction licence will be required for the Proposed Project and this was set out in Section 1.4.3 of Chapter 1 (Introduction) in the EIAR.
103. The application in respect of the abstraction licence will be made to the EPA who are the responsible body for determining abstraction licence applications, including the volume of any abstraction and operating conditions.
104. The SID planning application in respect of the relevant infrastructure (pipeline, treatment plant, etc as set out in the project description chapter) has been made to ACP, who are the responsible body for determining strategic infrastructure planning applications. For the avoidance of doubt, ACP cannot determine or condition the abstraction.
105. The EIAR prepared for the SID planning application reported on the assessment of the abstraction as part of the whole of the Proposed Project in the relevant sections, in particular, but not limited to, Chapter 8 (Biodiversity), Chapter 9 (Water). It was also fully considered within the Natura Impact Statement (including the AA Screening) and the Water Status Impact Assessment Report submitted with the SID planning application.
106. The observations that there is no abstraction licence regime in place are not correct as the EPA is currently determining licence applications. It is correct that ACP will want to liaise with the EPA regarding the interface between the determination of the SID Planning Application and the Abstraction Licence application. As Tipperary County Council has identified the Abstraction Licence application for the Proposed Project is dependant on a licence application being made by ESB for its existing impoundment. Therefore, it is the Applicant's intention to submit the Abstraction Licence application for the Proposed Project as soon as the ESB application is made and therefore, allow the appropriate liaison between the EPA and ACP.

Response to Submissions Report

107. The Applicant agrees with the response from Clare County Council that the Abstraction Licence must align with the SID Planning Application regarding “*the rate of abstraction, hydrological impacts, ecological impacts*, and groundwater protection” and fully intends to submit an Abstraction Licence on this basis.
108. The Applicant can confirm in response to the observation from Tipperary County Council that the ‘whole’ of the Proposed Project for which development consent is being sought has been included within the SID Planning Application. It is not appropriate to compare the water abstraction licensing process to the planning application process, as these are two different regimes with different requirements. The Abstraction Licence authorises the operation of the Proposed Project i.e. the abstraction. Consent to build the Proposed Project is within the scope of the SID Planning Application.
109. The abstraction license application will be an application for the Proposed Project abstraction from the associated ESB impoundment, in line with the requirements of the Water Environment (Abstractions and Associated Impoundments) Act 2022. For the purpose of the planning application, it is not correct to refer to the impoundment and Proposed Project as ‘the whole project’, as the ESB impoundment is an existing development which is already consented via statute and planning permission is only being sought for the Proposed Project.
110. With regard to the submission from the HSE the Applicant believes that there may be some confusion between the Proposed Project and a third party Abstraction Licence application. The Scoping Report for the EIA in January 2026 relates to the separate and standalone ESB abstraction and associated impoundment, in respect of which ESB is submitting its own licence application to the EPA.
111. A number of submissions raised the matter of whether the volume of water to be abstracted could be increased in the future and this is addressed in Chapter 6 – Proposed Project Description of this report.

2.4 Need for Volume of Water to be Supplied

112. The following submission commented on the deficit in the water supply to be met:

Unique ID	Name of Individual or Organisation
WSP_SUB_22	Michael Reidy

2.4.1 Applicant’s Response

113. The deficit to be met by the Proposed Project was defined by the methodology set out in the NWRP including the Eastern and Midlands Plan. The calculation of the deficit is described in the Planning Statement and the SID Engineering Report submitted as part of the SID planning application.

2.5 Project Costs / Cost Benefit

114. Thirteen submissions raised issues / concerns relating to project costs and cost benefit of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_10	Christopher Campion
WSP_SUB_16	Joanne Skehan
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannans Fishing Club

Unique ID	Name of Individual or Organisation
WSP_SUB_31	Tony O'Brien
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_77	Shane Matthews
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

115. The general observer submission from Christopher Campion stated that there are various estimations for the cost of the pipeline, ranging from €3-10 billion, it is hard to know which, if any, of these can be taken seriously. The submission continued that given the recent history in the State of fiscal management scandals, the Government would be well advised to evaluate the cost-benefit of alternatives, and the Proposed Project is a single-solution with no resilience, at an extraordinary cost.
116. The general observer submission from Joanne Skehan stated that the Proposed Project will result in a financial and economic risk exposure, and the current proposal is therefore fundamentally flawed in terms of financial prudence.
117. The general observer submission from Mattie McGrath TD stated that the Applicant has failed to adequately consider several less damaging, more cost-effective alternatives and the significant cost of the Proposed Project will put other essential water infrastructure projects at risk.
118. The general observer submission from the River Shannon Environmental Protection Alliance Company Ltd stated that the project cost estimates have escalated dramatically over time, with figures ranging from several billion to over ten billion euro. The submission continued that such variance indicates profound uncertainty and exposes the State to long-term financial risk.
119. The general observer submission from St. Flannans Fishing Club stated that the Proposed Project is economically unfeasible given that it is estimated the Proposed Project may cost, when the data is broken down appropriately, in the region of 10 billion euro.
120. The general observer submission from Tony O'Brien stated that he was unable to find any assessment of the long term operational costs within the planning application, and raised concern that a capital investment of close on 7 billion euro is money that could be and should be invested in a more sound and resilient sustainable plan to supply the Eastern and Midlands region.
121. The general observer submission from Carol-Anne Murphy stated that a citizen's council with a comprehensive and sustained multi-stakeholder involved cost benefit analysis of all alternatives is required.
122. The general observer submission from Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh stated that there are huge concerns regarding the high cost of this Proposed Project to taxpayers, running into billions of euros. The submission contend that there is no contingency in place for overruns, delays etc., which could have a severe impact on the future delivery of safe water.

123. The general observer submission from Councillor Séamie Morris stated that the Proposed Project is economically unsound and it will be subject to project cost escalation and financial risk.
124. The general observer submission from Garrett Reil and Cliona Geary stated that, while cost alone is not a planning ground, the escalating cost of the Proposed Project is relevant to the assessment of proportionality and the adequacy of the alternatives analysis. The submission continued that the Proposed Project was originally estimated at €800 million to €1.4 billion, which has raised to €4.58 to €5.96 billion.
125. The general observer submission from Shane Mathews stated that the original estimated cost for the pipeline was €1.2 billion, but this has escalated significantly and is now expected to be in the region of €5–€6 billion, with the possibility of exceeding €10 billion. The submission continued that this increase represents an unnecessary financial burden on the taxpayer.
126. The prescribed body submission from Limerick County Council stated that the cost of the Proposed Project is excessive and final costs are unknown. The submission continued that the costs of national projects have been demonstrated to escalate as per other Government projects, and the Proposed Project does not make common or financial sense. The submission further stated that building a massive new pipeline at an astronomic cost to the taxpayer and is not sustainable or cost-effective.
127. The prescribed body submission from Tipperary County Council stated that several of the councillor's criticised the projected cost of the Proposed Project, which has risen far beyond initial estimates referenced during the meeting and questioned whether this represented a prudent use of public resources when substantial improvements to existing leakage and treatment infrastructure remain unfunded.

2.5.1 Applicant's Response

128. A Preliminary Business Case for the Proposed Project has been published previously and this set out the steps taken to ensure robust construction and operational cost estimations, independent review, and ongoing oversight through the Government's Infrastructure Guidelines process. The current preliminary project cost estimate of €4.58 billion to €5.96 billion includes factors for inflation and uncertainty and has been developed, in accordance with the principles set out in the Infrastructure Guidelines, by international engineering experts Jacobs and verified by an Expert Review Panel. The expert review panel comprised experts from independent Irish and international experts from Ernst & Young, Mott McDonald and Oxford Global Projects.
129. The Cost Benefit Analysis forecasts that the Proposed Project will deliver in excess of €10 of benefits for every €1 of costs, and it therefore represents a positive investment for the State. The estimates for the Cost Benefit Analysis were included in the Preliminary Business Case for the project, that was independently reviewed by the Commission for Regulation of Utilities (CRU) and Major Projects Advisory Group and published in June 2024.
130. As the Proposed Project progresses through the three Decision Gates under the Infrastructure Guidelines, a rigorous system of checks and balances will mean that the project estimate is updated and reassessed to ensure value for money. As part of this process a review of the project cost estimate in 2025 confirmed the preliminary estimate range is unchanged at €4.6 - €5.9 billion.
131. It is currently expected that the Proposed Project will be funded through the existing Exchequer mechanisms outlined in the Memorandum of Funding Agreement between the Department of Housing, Local Government & Heritage and the Applicant with a specific allowance for WSP and a separate allowance for the rest of the capital programme out to 2030 which is currently under consideration by the CRU.

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132. The Applicant has a strong track record for delivering projects on time and to budget. While the proposed Water Supply Project Eastern and Midlands Region is the largest water infrastructure project in the history of the State, it is not complex in its design. The project comprises elements that the Applicant is delivering on a day-to-day basis, over a large geographical area.
133. Athlone Main Drainage is an example of this successful delivery record. The recently completed €114m project was completed on time and to budget. The new infrastructure will reduce the risk of sewer flooding in Athlone and protect the environment by addressing non-compliant sewer overflows into the River Shannon. It has also improved the capacity of the sewer network allowing for current and future population growth.
134. Insofar, as the submissions on the cost of the Proposed Project relate to the availability of alternative solutions these matters are addressed in Chapter 5 (Consideration of Reasonable Alternatives) in this report.

2.6 Compliance with the Environmental Impact Assessment and Strategic Environmental Assessment Directives

135. The general observer submissions raised issues relating to the compliance of the Proposed Project with the EIA Directive (2011/92/EU, amended by 2014/52/EU) and the SEA Directive (2001/42/EC):

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_37	Councillor Dr. Phyll Bugler

136. This general observer submission stated that the EIA Directive and the SEA Directive would be breached if the Proposed Project is granted planning permission.

2.6.1 Applicant's Response

137. The planning application for the Proposed Project is not subject to the SEA Directive. The SEA directive applies to plans and programmes, whereas the Proposed Project is a proposed development for which planning approval is being sought. As set out in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR, the Proposed Project aligns with, and is a significant step towards delivering, the Preferred Approach set out the NWRP and Eastern and Midlands Plan for a New Shannon Source with transfers. Both the NWRP and the Eastern and Midlands Plan were subject to SEA. The SEA reports can be accessed from the Uisce Éireann website - <https://www.water.ie/projects/strategic-plans/national-water-resources>.
138. The submission also suggests that the Proposed Project is in breach of the EIA Directive and the inference is that this is based on the environmental effects on the Lower River Shannon SAC and Lough Derg.
139. EIA is the process for evaluating the likely significant effects on the environment caused by a proposed development or project and allowing the decision maker to take account of those effects prior to determining an application for Development Consent. It also provides a mechanism for identifying the potential effects of a proposed development and allowing for design measures or other mitigation to be proposed to avoid these effects altogether or where that is not reasonably practicable to take steps to mitigate against them. The EIAR supplied with an application will communicate and record these commitments on environmental mitigation.
140. Environmental assessments have been undertaken for the Proposed Project and reported in the EIAR which has been submitted with the SID planning application, in accordance with the requirements of

the EIA Directive and in accordance with relevant legislation, standards and best practice guidance. Chapter 2 of the EIAR (The Environmental Impact Assessment Process) set out the requirements of the EIA Directive and how the EIAR complied with these. Therefore, the Applicant has submitted an application that is fully compliant with the EIA Directive.

141. Submissions which raised EIA compliance in relation to a specific impact or assessment have been addressed in the topic chapters to which they relate (and reported in Chapters 4 to 24 of this Report).

2.7 Environmental Impact Assessment Process Procedural Risks

142. The prescribed body submission from Clare County Council raised concern in relation to the procedural risks associated with the EIA process:

Unique ID	Name of Individual or Organisation
WSP_SUB_110	Clare County Council

143. This prescribed body submission stated that the EIA process may be legally deficient in several respects that have previously resulted in successful judicial review challenges in Ireland. The submission continued that Irish courts have repeatedly quashed planning permissions as EIAs failed to meet EU requirements. The submission further stated that EIAs sometimes rely heavily on mitigation measures to reduce impacts, and impacts must first be fully understood before mitigation can be relied upon.

2.7.1 Applicant's Response

144. The assessment reported in the EIAR for the Proposed Project has been undertaken in accordance with all relevant legislation with regard to best practice guidelines, as set out in the methodology section of each topic chapter in the EIAR, to facilitate the competent authority carrying out its EIA. The EIAR has been prepared in accordance with the requirements of the EIA Directive, as set out in EIAR Chapter 2 (The Environmental Impact Assessment Process). The submission highlights concern with compliance with the following directives and legislation. Responses to these have been provided in the following sections of this report:
- EU habitats directive (92/43/EEC), as amended – Section 25.2.1 in Chapter 25 – Natura Impact Statement of this Report;
 - EU birds directive (2009/147/EC), as amended – Section 25.2.2 in Chapter 25 – Natura Impact Statement of this Report;
 - EU water framework directive (2000/60/EC), as amended – Section 26.1.1 in Chapter 26 – Water Status Impact Assessment Report (Water Framework Directive) of this Report; and
 - Climate action and low carbon development act 2015, as amended – Section 16.2.5 in Chapter 16 – Climate of this Report.
145. A comprehensive and robust environmental assessment has been undertaken by the Applicant to assess the likely significant effects of the Proposed Project, as documented in the EIAR, to facilitate the competent authority carrying out its EIA. The assessment was based on desk-top studies, comprehensive surveys, and detailed modelling to establish the environmental baseline conditions, and identify the likely significant effects arising from the Proposed Project on the environmental baseline. The mitigation measures proposed are based on the outcomes of these assessments and are intended to prevent, reduce or offset the likely significant effects. Mitigation measures are captured in the Construction Environmental Management Plan (CEMP) (Appendix A5.1 in Chapter 5 (Construction and Commissioning of the EIAR).

146. The submission suggests there is an ‘over reliance’ on mitigation measures. The Applicant does not agree. The purpose of the EIA process is to evaluate the likely significant effects on the environment caused by a project and to identify appropriate mitigation to avoid or reduce the potential for likely significant effects, where reasonably practicable.
147. This is what has been done for the Proposed Project as reported in the EIAR. As set out in EIAR Chapter 2 (The Environmental Impact Assessment Process), the mitigation hierarchy has been applied, whereby effects have first been avoided through the design and other embedded mitigation, then avoided or reduced through additional mitigation measures.

2.8 Mitigation Measures in the Environmental Impact Assessment Report and the Natura Impact Statement

148. The following submissions raised specific issues relating to mitigation measures in the EIAR and / or NIS for the Construction and Operational Phases:

Unique ID	Name of Individual or Organisation
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_61	Michelle McNamara
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_72	Carol Killeen
WSP_SUB_113	Offaly County Council
WSP_SUB_114	Tipperary County Council

149. The general observer submission from Garrett Reil and Cliona Geary stated that that key mitigation measures proposed in the EIAR and NIS are insufficiently specific and lack enforceable commitments.
150. The general observer submission from Michelle McNamara stated that there is a requirement that mitigation measures are certain, enforceable, and capable of objective verification.
151. The general observer submission from Killaloe Ballina District Angler's Association, Portumna and District Angling and Boating Association, The Lough Derg Anglers Association and Carol Killeen stated that the mitigation measures proposed are insufficient and non-binding and do not adequately safeguard against long-term environmental degradation.
152. The prescribed body submission from Offaly County Council stated that, in the event that ACP was minded to grant permission, the Planning Authority recommends the inclusion of a condition that ensures that all mitigation measures in the EIAR and NIS are implemented.
153. The prescribed body submission from Tipperary County Council stated that the EIAR and NIS rely heavily on mitigation measures that, in many instances, lack sufficient specificity, clarity, and enforceability, and this raises concerns about the practical implementation of mitigation relating to water quality, biodiversity, hydrology, and construction-phase controls. The submission continued that more robust and unambiguous commitments are required to ensure that environmental effects do not exceed those predicted. The submission also stated that all mitigation measures in the EIAR and NIS should be implemented and a suitably qualified person(s) are to be appointed to supervise works to ensure all environmental mitigation and monitoring measures are implemented and full records shall be kept and made available for public inspection. The submission also continued that the Proposed Project fails to

adequately safeguard against long-term environmental degradation, and proposed mitigation measures are insufficient, unproven, and non-binding.

2.8.1 Applicant's Response

154. Mitigation measures from the EIAR, NIS and Water Status Impact Assessment Report are captured in the CEMP (EIAR Appendix A5.1), including the Register of Environmental Actions and Commitments (REAC) and topic specific management plans (Annexes A to G in EIAR Appendix A5.1, as well as EIAR Appendix A7.2). In the event of a grant of permission the CEMP will form part of the conditions for which the Applicant must comply with (i.e. they would be binding commitments). As set out in the CEMP, the Contractor(s) will be contractually required to develop and implement the CEMP. The CEMP will be provided to the relevant Local Authorities for consultation and approval in advance of any construction works on site.
155. The CEMP will be subject to further amendment to take into account the requirements of conditions attached to statutory consents, or ground or weather conditions. This may include the revision and addition of content throughout the pre-commencement phase, and into the enabling works, Construction Phase and final commissioning of the Proposed Project. It will be expanded and updated by the Contractor prior to the commencement of any construction activities on site, including incorporating the requirements of conditions attached to statutory consents. Any updates or changes will not be permitted to reduce the level of environmental protection or environmental mitigation as defined in the CEMP and therefore, cannot result in a new or different adverse likely significant environmental effect from the Proposed Project, compared with those that have been assessed and reported in this EIAR, NIS and Water Status Impact Assessment Report.
156. The submission from Tipperary County Council has challenged the level of specification for some of the mitigation measures, with reference to the CEMP. The CEMP is an overarching document that sets out the general environmental management process. Information specific to each topic is included in the topic management plans that support the CEMP (Annexes A to F of EIAR Appendix A5.1, as well as EIAR Appendix A7.2). These management plans provide details of the standard, best practice mitigation measures that will be implemented by the Contractor, as well as details on monitoring (including relevant thresholds). Specific mitigation measures are included in the REAC (Annex G of EIAR Appendix A5.1). Each measure in the REAC is assigned a unique ID number for future reference. The REAC provides details of the measure or commitment, the objective of each commitment, its source reference within the EIAR/ NIS/ Water Status Impact report, achievement criteria, the owner of the action, monitoring requirements and confirmation of which stage of the Proposed Project the activity is required. The REAC will be updated by the Contractor as required as the Proposed Project progresses to track progress of the commitments and record outcomes and evidence of the actions taken, as well as recording and addressing any additional environmental issues that arise during construction.
157. The Applicant does not agree that the proposed mitigation measures are uncertain, insufficient and unproven. The proposed measures have been developed by competent experts, based on best practice guidance, professional judgement, and experience on similar infrastructure projects. The EIAR chapters provide information on how the mitigation is expected to work, and the REAC provides information on how and when the mitigation will be implemented, the achievement criteria, and details on monitoring of the mitigation measures, where relevant. The EIAR presents an assessment of the effects pre-mitigation and after the application of mitigation measures, therefore demonstrating how the proposed measures are sufficient for avoiding or reducing the likely significant effects from the Proposed Project. Where there are significant residual effects after the application of mitigation measures, these are clearly stated in the summary of each EIAR chapter, as well as EIAR Chapter 22 (Summary of Significant Residual Effects).

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158. Section 3.2 of the CEMP, (Appendix A5.1 in the EIAR) explains the responsibilities for implementing the CEMP. This includes an Environmental Manager who will ensure that the CEMP is fully adopted, effectively implemented and amended and updated as required. The Environmental Manager will be a suitably qualified, competent and experienced professional who will perform the necessary tasks, review environmental procedures and consult with members of the construction team and external stakeholders as required. As set out in Section 3.2.6 of the CEMP, (Appendix A5.1 in the EIAR), suitably qualified and experienced personnel will be engaged by the Contractor to support the Environmental Manager, including the following (depending on the scope of the contract):
- Archaeologist (in consultation with the Applicant's Project Archaeologist);
 - Terrestrial Ecologist (including relevant specialists as required, such as an ornithologist);
 - Aquatic Ecologist;
 - Noise and Vibration specialist;
 - Air Quality and dust specialist;
 - Soils and Land Quality specialist;
 - Landscape Architect;
 - Arboriculturist; and
 - Water Environment specialist.
159. Section 4.4 of the CEMP, (Appendix A5.1 in the EIAR), sets out the requirements for reporting and environmental records. In summary, the Contractor will maintain appropriate environmental documentation including monitoring, test results, plans and method statements. All records will be kept up to date and be made available for audits, inspections and periodic reporting. The Contractor will maintain the following environmental records (as a minimum) that will be made available for inspection by the Applicant and the relevant authorities, as required:
- Management Plans;
 - Environmental reports;
 - Records of environmental incidents;
 - Records of environmental training;
 - Corrective Action Reports;
 - Register of environmental complaints;
 - Monitoring data;
 - Environmental inspection and audit reports;
 - Waste, hazardous material and chemical inventories; and
 - Health and safety records.

2.9 Consent Condition

160. A number of the submissions proposed conditions, in the event that ACP were minded to grant planning permission for the Proposed Project. A number of these proposed conditions were pre-commencement conditions that would need to be discharged before construction could commence. These included:

Unique ID	Name of Individual or Organisation
WSP_SUB_83	Development Applications Unit
WSP_SUB_99	Transport Infrastructure Ireland

Unique ID	Name of Individual or Organisation
WSP_SUB_111	Kildare County Council
WSP_SUB_113	Offaly County Council
WSP_SUB_114	Tipperary County Council

2.9.1 Applicant's Response

161. The Proposed Project represents one of the most significant infrastructural projects undertaken in the State, spanning an area of approximately 1,233 hectares (ha) across 6 County Council jurisdictions: Tipperary County Council, Clare County Council, Limerick City & County Council, Offaly County Council, Kildare County Council and South Dublin County Council.
162. Different types and scales of development take place in each county, as described in detail in the WSP SID Planning Report. For example, in the counties Clare and Limerick, the proposed development is limited to uprating of existing 38kV lines only, while the main Water Treatment Plant and raw water intake take place in Tipperary. Section 3.2 of the Planning Report submitted with the SID planning application provides a good overview of the development proposed to take place in each county.
163. As is standard in all planning permissions, certain things will need to be agreed with local authorities prior to commencement of development. In this instance, there are 6 local authorities to engage with, all with different activities and works potentially taking place at different times. We would ask that the pre commencement conditions inserted in any grant of planning permission, reflect the division of development as set out in the SID WSP Planning Report; with pre-commencement conditions linked to works taking place in the local authority area, rather than a blanket requirement for the entire development. For instance, it would not make sense that Clare had to approve or review a CEMP for works which are taking place in Tipperary and vice versa. A clear delineation of the pre-commencement conditions would be extremely beneficial for the project.
164. In addition, certain works will span multiple county councils and may take place at different times, for instance, pipeline installation works across Offaly, Kildare and South Dublin. Therefore, we are suggesting a condition which requires a 'Compliance Framework' to be submitted by the Applicant. This would reflect the fact that we might not have all pre-commencement documents ready at the same time, given the different local authorities, scale of works, and stages of construction. The Compliance Framework will set out how and when various pre-commencement documents will be submitted to the relevant local authorities. It would also make sense for there be a mechanism to update the pre-commencement submission themselves, if minor updates were required at a later date. We would suggest that this is a prudent approach to a project of this size and scale.
165. To reflect all of the above we suggest the following be considered for a condition.

"The proposed development spans a number of local authorities and will take place over an estimated 5 year period of time. Pre commencement conditions should be linked to the work being undertaken in the relevant local authority area. Prior to commencement of construction in the relevant local authority area, Uisce Éireann will provide each relevant local authority with a 'Compliance Framework', notifying the local authority how Uisce Éireann will comply with the conditions included in its planning permission that relate to that local authority area. The Compliance Framework will address the full project, in that local authority area, noting that works may be taking place at different times. In the event the Compliance Framework requires updating, or a document noted within that Compliance Framework, Uisce Éireann will notify the relevant local authority."

2.10 Statutory Consents

166. The prescribed body submission from Offaly County Council raised specific issues in relation to statutory consents and licences:

Unique ID	Name of Individual or Organisation
WSP_SUB_113	Offaly County Council

167. This prescribed body submission stated that all statutory consents and licences required to commence construction works on-site shall be obtained prior to works commencing, including but not limited to; Site notices, construction commencement notices, licence to connect to existing utilities (including water) and mains sewers, where required, abstraction and / or discharge licenses, where required, and road opening / closure licences, etc.

2.10.1 Applicant's Response

168. The Applicant agrees with the spirit of the submission from the Council and would simply respond to say that given the scale of the Proposed Project and its linear nature it will be carried out in phases. Therefore, not 'all' consents and licences for the whole length of the pipeline need to be in place for construction to commence on a certain section or phase, provided, as the Council requests, all the necessary consents and licences are in place for the works relevant to that section / phase. Therefore, the Applicant proposes that all relevant consents required for the construction work to commence, on a particular phase, will be obtained prior to construction works commencing in each Local Authority area.

3. Planning

3.1 Overview

169. 50 of the 114 submissions received by An Coimisiún Pleanála (ACP) raised matters which the Applicant has identified as most relevant to Planning, such as, for example, compliance with planning policy.
170. The Applicant included a Planning Report in the documentation submitted as part of the SID Planning Application. This document, supported by the rest of the planning application including the SID Engineering Report and EIAR, provides the evidential basis for demonstrating that the Proposed Project is compliant with planning requirements.
171. This chapter responds specifically to matters raised in submissions to ACP in respect of Planning and should be read alongside the following chapters of this Report, which address issues raised in submissions in greater technical detail:
- Chapter 5 (Consideration of Reasonable Alternatives);
 - Chapter 6 (Proposed Project Description);
 - Chapter 7 (Construction and Commissioning);
 - Chapter 8 (Noise & Vibration);
 - Chapter 9 (Traffic and Transport); and
 - Chapter 15 (Air Quality).
172. Cross references to these other relevant chapters have been included, where appropriate, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
173. Observations identified by the Applicant included in this chapter include topics such as 'need for the project' (both supportive and challenging), support of the project delivery in an accelerated manner, balanced regional development, alignment of the project with national planning policy including the National Planning Framework and National Development Plan, the alignment of the project with the principles of sustainable development, compliance of the project with planning law and the assessment of future water supply needs in the west and mid-west.
174. This Chapter is structured around the following sections:
- General matters raised regarding planning;
 - Specific matters raised regarding planning; and
 - Specific matters raised by Prescribed Bodies relating to planning matters.

3.2 Response to General Issues Raised

3.2.1 Support / Acknowledgement for the Need for the Proposed Project

175. The following submissions stated their support for the Proposed Project or acknowledged the need for the Proposed Project, recognising its importance as nationally significant infrastructure and its critical role in providing a sustainable and resilient water supply for the Eastern and Midlands region:

Unique ID	Name of Individual or Organisation
WSP_SUB_09	Chambers Ireland
WSP_SUB_19	John Fingleton
WSP_SUB_42	Eileen McNamara
WSP_SUB_49	IBEC
WSP_SUB_75	Laois County Council
WSP_SUB_78	Waterways Ireland
WSP_SUB_79	Fáilte Ireland
WSP_SUB_80	An Taisce
WSP_SUB_84	Eamonn Dooley
WSP_SUB_86	Fintan Dunne
WSP_SUB_89	James Cullen Senior
WSP_SUB_94	Health Service Executive (HSE) - National Office for Environmental Health Services
WSP_SUB_96	Office of Public Works (OPW)
WSP_SUB_97	Seamus Cullen
WSP_SUB_98	The Heritage Council
WSP_SUB_99	Transport Infrastructure Ireland (TII)
WSP_SUB_111	Kildare County Council
WSP_SUB_112	Limerick City and County Council
WSP_SUB_113	Offaly County Council
WSP_SUB_114	Tipperary County Council

3.2.1.1 Applicant's Response

176. The Applicant welcomes the submissions received which recognise the importance of the Proposed Project and the critical need to deliver this necessary infrastructure.
177. The Applicant acknowledges that while the nature of the submissions from Eamonn Dooley, Fintan Dunne and James Cullen Senior are not supportive, the requirement for the Proposed Project is acknowledged.
178. As stated in the Planning Report submitted as part of the SID Planning Application the Proposed Project is intended to address a 'deficit' in water supply and provide resilience in supply. The Proposed Project is necessary for the Applicant to fulfil its obligations as the national authority for water services under the Water Services Act 2007 (as amended), and as a relevant body under the Climate Action and Low Carbon Development Act 2015 (as amended). The Planning Report demonstrates the alignment with European legislation and national, regional, and local policy, highlighting where the Proposed Project is identified and supported across each level of policy.
179. The Proposed Project is of strategic, economic and social importance to the State, and the provision of water supply will allow for sustainable growth to meet the future needs of the counties and of the country, as identified in key planning policy documents ranging from national to local level.
180. National Strategic Outcome 9 of the National Planning Framework relates to the sustainable management of water and other environmental resources and describes the need for a new long-term

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water supply source for the Eastern and Midland Region including the Dublin Water Supply Area that will contribute to resilience and security of supply for the region. It states the requirement for *‘infrastructure provision to be guided and **prioritised** in a manner that can benefit the greatest possible number of areas within the country’* [Emphasis added].

181. The Accelerating Infrastructure Report prepared by the Department of Public Expenditure, Infrastructure, Public Service Reform and Digitalisation (issued for Public Consultation at the time of writing the Planning Report and since published in December 2025) aims to accelerate the provision of infrastructure particularly in the electricity, transport and water sectors which were identified as critical to underpin the development of all other social or economic infrastructure. The Report ‘sets out not only what must be achieved but establishes the expectation that every organ of the State will act decisively to make it happen.’ [Emphasis added].
182. The Applicant is in agreement that it is essential that the delivery of the Proposed Project is accelerated and this is supported by the National Planning Framework and the Accelerating Infrastructure Report (December 2025).

3.2.2 Challenging the Need for the Proposed Project

183. The following submissions raised issues challenging the need and justification for the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_27	St. Flannans Fishing Club
WSP_SUB_22	Michael Reidy
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_50	James Crowley
WSP_SUB_59	Melina Sharp and Michael Eversen
WSP_SUB_101	Edward Frayne
WSP_SUB_114	Tipperary County Council

3.2.2.1 Applicant’s Response

184. The Applicant does not agree with the observations made that question the need for the Proposed Project, which include:
- Insufficient demonstration of need, justification and proportionality.
 - Reference to the ‘Kennedy Analysis’ which claims that there are mathematical errors in the demand analysis which, when corrected, mean there is no need for Proposed Project.
 - Rationale has not been made clear.
 - Significant doubts that the pipeline represents the optimal solution for Ireland and other options have been underweighted or prematurely dismissed.
 - Project need can only be established if the Applicant publish annual usage statistics broken down regionally by sector and activity.
 - Argues that future water demand and supply projections lack a proper legislative basis and are based on inflated and unrealistic assumptions.

- While long-term demand growth is acknowledged, the application must be judged on its stated need, and if that need is not credibly demonstrated, the proposal should be refused.
185. The need for the Proposed Project is firmly established by NWRP including specifically in the Regional Water Resources Plan - Eastern and Midlands (the Eastern and Midlands Plan) which is part of the NWRP. This is set out in Sections 4.2 – 4.4 of the Planning Report submitted as part of the SID Planning Application. Section 4.4.1 of the Planning Report describes the ‘Supply Demand Balance’ and Table 4.1 summarises the Treated Water Requirement in the GDA & 35 Other Water Resource Zones (WRZs) by 2050. The Proposed Project is intended to address a deficit in water supply and provide resilience in supply. This is the need for water. The deficit is the gap or difference between the water available for supply compared with the demand for water.
186. The ‘Need’ for the Proposed Project comes from the Water Supply Requirement Calculation in the NWRP for the Greater Dublin Area Water Resource Zone (GDA WRZ). By 2050, the demand of water required by the GDA is calculated to be 197 Mld (Megalitres per day) and the 35 No. other WRZs are calculated to require 83 Mld, resulting in a forecast deficit of 280 Mld. Also included in the demand calculation is the provision for the risk of reductions in volumes of water available from the current levels of abstraction from a number of existing sources when they are licenced. Overall, the total peak volume of water required is 300 Mld.
187. Chapter 3 (Consideration of Reasonable Alternatives) of the EIAR, outlines the 8-stage options appraisal in the Eastern and Midlands Plan which concluded that a New Shannon Source with transfers is the preferred approach to address Supply Demand Balance deficits in 37 WRZs in the Eastern and Midlands Region. This approach comprises an abstraction from Parteen Basin and a transfer of treated water to a termination point reservoir in Dublin, and would meet the objective of providing a sustainable water supply to serve the needs of the Region in the medium and long term. Further, as stated in the submitted Planning Report, the Applicant is focused on delivering critical infrastructure necessary to support social and economic development for the country, and is progressing the Proposed Project in accordance with its obligation as the national authority for water services with responsibility for the functions assigned to it by or under the Water Services Acts as amended. The works associated with the Proposed Project are required to ensure continued compliance with EU Directives and National Regulations related to drinking water quality and are necessary in order to continue to supply water infrastructure for continued population growth and economic development.
188. Chapter 3 (Consideration of Reasonable Alternatives) of the EIAR also sets out the process and decision making followed in the consideration of alternative options during the selection of the route of the pipeline, the location of the permanent infrastructure sites and the location of the construction compounds and pipe storage depots. Further detail on alternatives is provided in Chapter 5 (Consideration of Reasonable Alternatives) in this report, including specifically Section 5.2.7.
189. As set out in Section 12 of the Planning Report, the Proposed Project will:
- Provide a new source of water providing a high quality, sustainable and resilient water supply for the Eastern and Midlands Region. This a generational project and is the first major ‘new source’ infrastructure in the Region in the last 60 years.
 - Deliver a safe secure sustainable source of water supply necessary to support our growing population and economy, including the demand for housing.
 - Enable the Applicant to adapt to the effects of climate change by diversifying our water supply sources. The new source reduces dependence on the Liffey, better protecting the Eastern and Midlands Region from drought and climate change.
 - Provide the Greater Dublin Area, consisting of Dublin, and parts of Meath, Kildare and Wicklow with resilient safe and secure water and Proposed Project infrastructure will have capacity to serve communities in Tipperary, Offaly and Westmeath along the route.

- Support balanced regional development by redirecting supplies currently serving Dublin to Louth, Meath, Wicklow, Carlow and Kildare, and provide for future connections across the Midlands including for example, Mullingar, (once future projects are brought forward).
- Create infrastructure that will deliver the capacity to meet the domestic, commercial and industrial water supply needs of up to 50% of Ireland's population into the medium to long-term future and provide safe, secure, resilient and sustainable drinking water supplies across the region. This, in turn, will facilitate economic development in suitable locations throughout the region as the Proposed Project will demonstrate to potential investors that Ireland offers modern, efficient and sustainable water supply infrastructure to support the needs of their businesses well into the future.

190. It is considered that sufficient detail has been provided to An Coimisiún Pleanála to demonstrate the need and justification for the Proposed Project.¹

3.2.3 Balanced Regional Development

191. The below submissions raised strategic planning concerns in relation to the Proposed Project, including issues of sustainable development, regional equity, and policy alignment. Five submissions questioned the proposal's consistency with sustainable development principles, while fifteen raised concerns regarding regional equity and the balanced distribution of development. In addition, nine submissions challenged the Project's compliance with the objectives and policies of the National Planning Framework (NPF).

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_31	Tony O'Brien
WSP_SUB_35	Castleconnell River Association
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_50	James Crowley
WSP_SUB_60	Michael Barker and Company
WSP_SUB_67	Senator Dee Ryan
WSP_SUB_82	Councillor Rita McInerney
WSP_SUB_101	Edward Frayne
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick City and County Council
WSP_SUB_114	Tipperary County Council
WSP_SUB_06	Brian Leddin
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh

¹ The Applicant previously responded to Kennedy Analysis claims regarding the need for the Proposed Project as part of responses to consultation submissions on previous iterations of the project, and in response to consultation submissions on the NWRP and on the RWRP for the East and Midlands Region.

Unique ID	Name of Individual or Organisation
WSP_SUB_80	An Taisce
WSP_SUB_82	Councillor Rita McInerney
WSP_SUB_75	Laois County Council
WSP_SUB_22	Michael Reidy
WSP_SUB_78	Waterways Ireland

192. Several general observer submissions argued that the Proposed Project is not aligned with sustainable development principles, citing concerns about permanent land-use change, impacts on rural development, and insufficient regard for local community character. Observers requested a phased and adaptive approach, stronger consideration of sustainable local development, and assessment of long-term scenarios extending 50–100 years. It was also cautioned that facilitating accelerated growth could lead to unsustainable future resource demands, particularly in relation to water abstraction.
193. The submissions argued that the Proposed Project would reinforce over-centralisation in the Greater Dublin Area, conflicting with the NPF objective of balanced regional development. Concerns were raised that rural regions in the South West would bear disproportionate environmental and infrastructural burdens to facilitate growth in Dublin, while their own development potential would be constrained. It was further contended that diverting strategic water resources and capital investment eastwards would undermine regional competitiveness and investment, particularly in Limerick and Clare, given existing infrastructure deficits. The submissions asserted that the Proposed Project conflicts with the National Planning Framework's objective of balanced regional development by reinforcing disproportionate growth. It was further argued that this approach runs contrary to the ethos and strategic aims of the NPF.
194. Councillor Rita McInerney notes that the NDP emphasises addressing infrastructure deficits as a foundation for sustainable regional growth and that substantial capital is being allocated towards the project which would service projected growth in one region while there are longstanding unresolved rural constraints. The submission raises questions over the sequencing of investment if the Proposed Project will result in expanded capacity in already over-concentrated areas rather than funds being used to remove structural barriers to balanced growth. Cllr Rita McInerney stated that any abstraction must guarantee that future industrial or housing growth in the Midwest and the Shannon Estuary is not constrained.
195. Laois County Council stated that the provision of a new water mains, linking the Proposed Project to the Portarlinton Public Water Supply and to the broader water supply network in County Laois, is, in their view, a necessary intervention to be added to the current proposals.
196. The submissions stated that the NWRP developed by the Applicant identified a connection to the Water Supply Project as the "preferred approach" for the Mullingar Water Resource Zone, and that this would allow the Applicant to reduce their abstraction from Lough Owel, which currently supplies the Mullingar Water Resource Zone and serves as the summit level feeder to the Royal Canal, acting as its primary source of water. The submission continued that, while a connection to the Mullingar Water Resource Zone is outside the direct scope of this current planning application, the Proposed Project is an essential first step to ensuring a sustainable water supply for the Mullingar Water Resource Zone and the Royal Canal.
197. The submissions stated that the proposal is not in accordance with the proper planning and development both of the River Shannon area and the objective of providing a sustainable water supply to serve the needs of Dublin in the medium and long term. The submission states that the Shannon is

a critical resource and a complete examination should be independently undertaken to ensure the optimum and sustainable use of this resource.

3.2.3.1 Applicant's Response

198. The Proposed Project accords with sustainable development principles and is fully aligned with national, regional and local planning policy, including the NPF and the Regional Spatial and Economic Strategies for both the Southern Region and the Eastern and Midland Region. The Proposed Project is identified as strategic, enabling infrastructure that improves resilience, addresses an established regional water deficit, and supports balanced regional development across the Eastern and Midlands Region rather than solely Dublin. The overall NWRP examines water supply solutions across all Water Resource Zones, including those in the Mid-West (Limerick, Clare and Tipperary), and identifies preferred approaches that enable each WRZ to develop in line with the growth objectives set out in the National Planning Framework. It will not undermine the Shannon's drought resilience, involves a limited abstraction within assessed environmental thresholds, and is designed as a flexible, future-proofed solution to climate and supply risks. Concerns raised regarding disproportionate growth, long-term abstraction pressure, and wastewater constraints in County Clare are either accounted for within national water planning frameworks or lie outside the scope of the SID application.

199. The Proposed Project is being brought forward following the 'New Shannon Source with transfers' being identified as the preferred approach for meeting the needs of the GDA WRZ. The proposal will address critical supply issues and increase resilience of supplies and Levels of Service. The NDP identifies the Proposed Project as a Strategic Investment Priority and states:

'Investment will continue to be prioritised to improve water and wastewater quality through significant capital priority and delivery of national programmes. This investment is also needed to meet changing legislative and regulatory requirements such as the recast Drinking Water Directive.'

200. In terms of the sequencing of investment, the Applicant is committed to investment in projects and programmes in the Capital Investment Plan 2020-2024 which was approved by the Commission for Regulation of Utilities under Revenue Control 3.5 for projects such as the proposed development.

201. The Applicant refers to Section 8.0 of the Planning Report which discusses the National Development Plan in the context of the Proposed Project and concludes that the proposed development is considered to be in accordance with the provisions and objectives of the NDP and the delivery of the Proposed Project will allow the objectives of the NDP to be met.

202. The NPF is the long-term, 20-year strategy shaping the future growth and development for the whole of Ireland. The NPF shows explicit support for the Proposed Project, described as a key priority, through the following statement on page 31 of that Plan;

*'The delivery of critical strategic infrastructure in areas such as transport, water services management, waste management, education, health and community services is essential to the sustainable growth of Dublin into the future. Key priorities include enhanced airport and port access and capacity; expansion of the public transport network including the delivery of DART+, MetroLink, Luas expansion and BusConnects; and enhanced water and wastewater capacity through projects such as the Greater Dublin Drainage Project and the **Water Supply Project, Eastern and Midlands Region**. '* [Emphasis added].

203. The NPF takes the balance of needs nationally into account and identifies the Proposed Project and states the requirement for "infrastructure provision to be guided and prioritised in a manner that can benefit the greatest possible number of areas within the country". The Proposed Project will allow the fulfilment of National Strategic Outcome 9'

204. The Applicant also refers to the Water Status Impact Assessment Report which found that the Proposed Project would not compromise the Water Framework Directive objectives or cause a deterioration in the status of any surface water or groundwater WFD designated water body and/or jeopardise the attainment of good surface water (or good ecological potential) or groundwater status.
205. Chapter 21 (Cumulative Effects and Interactions) of the submitted EIAR assesses the potential for cumulative effects arising from the Proposed Project in association with other projects and the receiving environment during the Construction and Operational Phases. The proposed abstraction is included within the scope of the assessment, which concluded that following mitigation, there would be no significant residual cumulative effects associated with the proposed abstraction.
206. Regarding the concerns raised over the permanent land use change, the Applicant acknowledges the land use change for the proposed infrastructure sites and highlights that the majority of the land under construction for the Proposed Project will be reinstated on a like-for-like basis along the route of the pipeline and has defined this in Chapter 4 (Proposed project description) and Chapter 5 (Construction and Commissioning) of the EIAR. The Applicant has paid regard to local community character in that mitigation measures have been embedded into the design of the Proposed Project so as to minimise any potential effects on local communities from the Construction and Operation phases. Furthermore, a Community Benefit Scheme has been proposed for the communities that may be impacted by the construction of the Proposed Project.
207. It can be concluded that there would be no reason that the abstraction of water by the Proposed Project would directly or indirectly constrain future industrial or housing growth in the Midwest.
208. The Proposed Project has been brought forward in response to a specified need as set out within the application documents. The NWRP confirms the need for a new water supply source for the Eastern and Midlands Region based on demographic projections, economic assessment of water supply in the regional and national economy, water demand projections and on considerations of resilience of supply. As set out within section 4.4.6 of the submitted Planning Report the Proposed Project will be able to supply sufficient water to meet a deficit in supply for 36 WRZs. Future take-off points are provided at strategic locations along the route of the pipeline to enable these future connections when future projects are brought forward by the Applicant. The locations were selected in the Eastern and Midlands Plan which identified WRZ's needing extra capacity in the future. There are 4 No. potential future connections, 2 No. in Tipperary and 2 No. in Offaly. The future connection points have been provided in accordance with the Proposed Project's objectives and in alignment with the Eastern and Midlands Plan. The Applicant acknowledges the importance of a secure and resilient water supply. However, the project objectives and the Eastern and Midlands Plan do not currently identify future connection points for Portarlinton Public Water Supply or the broader water supply network in County Laois.
209. When the demand rises, a separate application will be submitted for a stand-alone project for the new connection which can be brought into operation without affecting the operation of the main pipeline. The Applicant acknowledges that a sustainable water supply is needed for the Mullingar Water Resource Zone and has therefore made provisions for a potential future connection at the R400 in County Offaly to supply the Mullingar WRZ.
210. As part of the assessment of the SID planning application, ACP, as an independent statutory body, will undertake an assessment of the abstraction from the Parteen Basin.
211. In relation to the water supply for Limerick, the need for the Proposed Project was established in the NWRP and the Eastern and Midlands Plan. The Proposed Project delivers a solution that meets the preferred approach and volume of water set out in the NWRP to provide a safe, resilient water supply

to meet the demand requirements of the GDA WRZ and a further 36 WRZs. The Proposed Project does not include the provision of water supply for County Limerick.

212. With regards to the potential for effects on the Lower River Shannon these are addressed in Chapter 11 (Water (Hydrological Modelling and Water Levels) of this report.

3.3 Response to Specific Issues Raised in General Observer Submissions

3.3.1 Planning Drawings

213. The general observer submission from James Cullen Senior raised a specific issue relating to alleged inaccuracies on the planning drawings:

Unique ID	Name of Individual or Organisation
WSP_SUB_89	James Cullen Senior

214. This general observer submission stated that the compound on their lands is called 'Graiguepottle' on the planning drawings but appears to be all in the townland of 'Baltracey'.

3.3.1.1 Applicant's Response

215. The Applicant has noted the issue raised by the general observer. The Construction Compounds and Pipe Storage Depots were named using the townland from the GIS Mapping system. The applicant is satisfied that the townlands are accurately reflected in the submitted drawings including those relating to the temporary Construction Compounds and Pipe Storage Depots. EIAR, Volume 5 – Drawings and Figures, Chapter 5 Construction and Commissioning Figure 5.16 drawing title is based on the original long list naming convention. The location of this pipe storage depot developed as the project design progressed and the historic location name was retained.

3.3.2 Consideration of Planning Requirements for Proposed Access

216. The general observer submission from Seamus Cullen raised a specific issue relating to a proposed lay-by:

Unique ID	Name of Individual or Organisation
WSP_SUB_97	Seamus Cullen

217. This general observer submission raised a specific planning concern relating to the siting and design of the proposed Permanent Wayleave and associated layby in immediate proximity to an existing entrance serving a dwelling and actively operated farm. The submission states that, under the Roads Act 1993 and the Planning and Development Act 2000, proper planning and sustainable development of the area, the safety and convenience of road users must be considered.

218. This general observer submission raises concerns over the siting of a proposed Permanent Wayleave in relation to an existing entrance onto the R407 on the following grounds:

- It would give rise to significant road safety hazards
- Interference with the required sightlines
- Materially affecting the safe use of an established entrance
- Inconsistent with established road safety guidance and design standards

3.3.2.1 Applicant's Response

219. To avoid road safety concerns, the siting and design of the proposed permanent wayleave and associated layby referenced in the above submission are in accordance with applicable road design guidance, including TII guidance in terms of appropriate sightlines and the safe use of the entrance. Furthermore, a Road Safety Audit was completed as part of the design development and did not identify any concerns regarding the sightlines for the lay-by at this location. This matter is addressed further in Section 6.3.4 of this submission 'Potential Safety Impact of Proposed Layby at Landowner Property Access'.

3.3.3 Notification of Planning

220. Two general observer submissions raised a specific issue relating to notification of planning. Limerick City and County Council raised concerns regarding site notices.

Unique ID	Name of Individual or Organisation
WSP_SUB_107	Mark Kinsella
WSP_SUB_108	Michael and Mary Kinsella
WSP_SUB_112	Limerick City and County Council

221. These general observer submissions noted that the landowners did not receive a written notification of planning. Limerick City and County Council raised that site notices were not erected in Limerick or Clare, calling into question the validity of the application.

3.3.3.1 Applicant's Response

222. The public were notified of SID planning applications by Newspaper Notice as per Statutory requirements. In relation to the specific queries raised by WSP_SUB_108 and WSP_SUB_109, Newspaper Notices were published in the Offaly Independent on Saturday 13th December 2025 and in the Irish Times on Thursday 18th December 2025 in addition to notification in counties Clare, Limerick, Tipperary, Kildare and South Dublin. It is noted that there is no statutory requirement to erect Site Notices for a SID application as per section 37E of the Planning and Development Act 2000 (as amended). Rather, the discretion on the number and location of any site notices to be erected (if any) lies with ACP as per Art. 210(4) of the Planning and Development Regulations 2001 (as amended).

223. Limerick City and County Council noted that there was no site notice erected within County Limerick or County Clare. The reason for this is that none of the major permanent infrastructure works as part of the Proposed Project are located within County Limerick or County Clare. Site notices were erected for the following elements of the Proposed Project, comprising the major permanent infrastructure sites:

- Raw Water Intake and Pumping Station;
- Water Treatment Plant;
- Break Pressure Tank;
- Booster Pumping Station;
- Flow Control Valve; and
- Termination Point Reservoir.

224. For each of these sites, there was a site notice erected at or near the main entrance to the land or structure concerned from a public road, or where there is more than one entrance from public roads, on or near all such entrances.

225. Given the scale of the Proposed Project and the level of publicity surrounding the project, it is considered that public knowledge of the scheme has been extensive through statutory newspaper notices, landowner liaison, stakeholder and public consultation and wider media publicity, as such it is considered that the public notification of the proposed development has been carried out in accordance with the requirements of the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001 (as amended). Site notices were erected at the major permanent infrastructure sites voluntarily by the Applicant, this approach was presented to An Coimisiún Pleanála during the Pre-Application Consultation process.

3.3.4 Best Practice in Urban Water Resource Management

226. The general observer submission from Garrett Reil and Cliona Geary raised specific concerns relating to international best practice in water resource management:

Unique ID	Name of Individual or Organisation
WSP_SUB_48	Garrett Reil and Cliona Geary

227. This general observer submissions stated that the Proposed Project represents a significant departure from current international best practice in urban water resource management. The submission continued that this is a material consideration for An Coimisiún Pleanála in assessing the adequacy of the alternatives analysis and the overall justification for the Proposed Project.

3.3.4.1 Applicant's Response

228. The Applicant has complied with current international best practice in urban water resource management. The submitted Water Status Impact Assessment Report sets out the Proposed Project's compliance with the Water Framework Directive (WFD) Directive 2000/60/EC, the UK Environment Agency's 'Clearing the Waters for All' 2016 (updated 2023) (Environment Agency 2023) and the UK Planning Inspectorate's Advice Note 18: Water Framework Directive (Planning Inspectorate 2015) for England and Wales.
229. The basis of the Proposed Project comes from the National Water Resources Plan Eastern and Midlands Regional Plan, which sets out the Option Development process and outlines how the Preferred Approach for the region was identified from a screening process, updated outline design and a Multi Criterial Assessment using criteria such as lowest cost, lowest carbon, most resilient and best environmental. Following this, the Preferred Approach went through sensitivity testing by testing the effect of a range of future events, for example climate change or new abstraction legislation on the Supply Demand Balance and the Preferred Approach was found to be highly adaptable to a broad range of future scenarios.
230. Chapter 3 (Consideration of Reasonable Alternatives) of the submitted EIAR sets out the reasonable alternatives considered in respect of the Proposed Project and has been prepared in accordance with best practice and in compliance with the EIA Directive. It is therefore considered to be adequate in terms of the alternatives analysis and the overall justification for the Proposed Project.
231. The Preferred Approach which has been put forward to ACP as the Proposed Project will provide the best overall outcome for the region, particularly in relation to environmental, ecology and resilience outcomes and the submitted SID documentation demonstrates compliance with best practice in urban water resource management.

3.3.5 Statutory Basis for Abstraction and Acquisition on Landowner Lands

232. The general observer submission from A.M.R. Limited raised a specific issue relating to the statutory basis for abstraction and acquisition on their lands. Two general observer submissions raised a specific issue relating to changes in land ownership:

Unique ID	Name of Individual or Organisation
WSP_SUB_100	A.M.R. Ltd
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

233. The general observer submission from A.M.R Ltd alleged that the documentation accompanying the planning application does not adequately describe the jurisdiction of the Applicant to abstract water from their lands and does not disclose the statutory basis upon which any such acquisition can be authorised.
234. The submissions from John Quinn and Sandra Frayne and Robert Frayne raise matters specific to the CPO including the impact on their rights as land owners.

3.3.5.1 Applicant's Response

235. Some of the matters raised relate directly to land ownership and the CPO and these have been the subject of a separate CPO response from the Applicant submitted under Reg. Ref 323982.
236. The basis for the CPO is set out in the CPO application including the CPO Planning Report. This describes the Proposed Project as a strategic water supply scheme, including abstraction (maximum 300 Mld), treatment, and transfer to Peamount to serve 36 WRZs, and records that the CPO is required to facilitate the construction and operation of those works. The documentation also makes clear that the proposal is brought forward as Strategic Infrastructure within the planning framework and should be read with the associated EIAR/NIS and supporting reports.

3.3.6 Inclusion on the Compulsory Purchase Order Schedule

237. The general observer submission from James Waldron raised a specific issue relating to his non-inclusion on the CPO schedule:

Unique ID	Name of Individual or Organisation
WSP_SUB_91	James Waldron (McEntegert Consultancy)

238. This general observer submission stated that the proposed compound design had no regard to the farming enterprise on their lands. The observer noted that the Proposed Project includes overhead electrical lines with supporting structures that will traverse the observer's lands and would directly interfere with the day-to-day operation of the farm. The observer outlines that they should have been included in the CPO schedule as an impacted landowner, whilst acknowledging that no permanent acquisition of land from them is proposed.

3.3.6.1 Applicant's Response

239. The power connection proposed on the general observer's lands are required for Line Valve LV-RDX092-01. Powers for compulsory acquisition of land are not being sought for the power connections to each of the line valves as it is intended that these works will be delivered by ESNB on behalf of the Applicant, and will be delivered in accordance with ESNB's existing acquisition powers. As such,

the lands owned by James Waldron are not included on the Compulsory Purchase Order Schedule for the Proposed Project.

3.3.7 Community Benefits Scheme / Funding

240. The following general observer submissions raised specific issues relating to the community benefit scheme and its funding.

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_27	St. Flannan's Fishing Club
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_69	The Lough Derg Anglers Association

241. The general observer submission from Yvonne Moloney and John and Georgina Ringrose stated the proposal fails to prioritise the communities most affected and there is no commitment made to ring-fence funding for Killaloe, Ballina, Parteen, or Birdhill. Both submissions state that the Community Gain Fund should provide compensation for tourism businesses that suffer demonstrable losses due to construction disruption.
242. Yvonne Moloney and John and Georgina Ringrose also requested that the Community Benefit Scheme should fund economic, environmental and educational initiatives including enhanced wastewater treatment for Killaloe, tourism infrastructure improvements to offset construction disruption and an environmental monitoring program for the Lower River Shannon SAC.
243. The general observer submission from St. Flannan's Fishing Club stated that a specific allocation should be made towards the lake that this Proposed Project relies on. Their submission continues that funding toward LAWPRO to improve water quality for all lake and water users would also be appropriate.
244. The general observer submission from Killaloe Ballina District Angler's Association and The Lough Derg Anglers Association stated that community funds for reinvestment into Lough Derg and the River Shannon should be ring-fenced as part of the Proposed Project.

3.3.7.1 Applicant's Response

245. The Community Benefit Scheme submitted as part of the SID planning application sets out the aim to deliver support for community initiatives under the categories: Economy, Environment and Education as requested by general observers Yvonne Moloney and John and Georgina Ringrose and Table 2-1 of the Community Benefit Scheme identifies the objective and description for each category.
246. As shown in Table 3-1 of the submitted Community Benefit Scheme, the Community Gain Investment Fund proposes weighted allocations based on the scale of impacts during construction using criteria listed in Section 3.3.2 – Weighted Allocations. It is proposed that County Tipperary be allocated 52% of the funding allocation accounting for: significant land take, 3 No. elements of permanent infrastructure, 26% of total pipeline length, increased water treatment capacity in county and potential future beneficiary of new water supply. The funding is targeted to priority areas within a 5km radius of the proposed infrastructure which demonstrates the Applicant's commitment to provide a proportionate amount of funding support to the communities experiencing the greatest impact from construction such

as the Killaloe, Ballina, Parteen and Birdhill communities. The Community Benefit Scheme proposal is that Local Authorities could be the Fund Administrators of the Community Gain Investment Fund. The Fund Administrators would be responsible for managing the implementation of the funding rounds, including awarding funding to applicants. It is anticipated that Clare County Council and Tipperary County Council would be responsible for evaluating and allocating funding to the Killaloe, Ballina, Parteen and Birdhill Communities applications.

247. During the formulation of the Community Benefit Scheme, research was carried out into other large scale projects and found that there is no standard or common approach to community gain investment in the water supply sector in Ireland or the UK. It was also found that community funding initiatives for nationally important projects in the energy and transport sectors were usually associated with the construction phase and /or a defined period of the operational phase.
248. The Applicant refers ACP to Chapter 14 (Population) of the submitted EIAR which assesses the likely significant effects on people and communities associated with the Proposed Project and included within the scope of the assessment is the impact on Tourism. The Chapter concluded that there would be no likely significant adverse effects on Tourism nor on people and communities during the Construction and Operational Phases of the Proposed Project.
249. The Applicant would like to highlight that two out of the four potential future connections are located within County Tipperary. Whilst the potential future connections would not supply Tipperary as part of the Proposed Project, the two potential future connection points, located at the WTP access road (which would supply the Killaloe WRZ, Clare and the Newport WRZ, Tipperary) and the other near Cloughjordan (which would supply the local WRZ and several nearby interconnected areas), could be brought forward by future applications by the Applicant and would directly benefit Tipperary and Clare.
250. To inform the making of the Community Benefit Scheme, specialist research examined available socio-economic and demographic information and, in combination with stakeholder engagement, highlighted community development priorities and frameworks that the Applicant can align with to ensure that the benefits of the Proposed Project are maximised for local communities.

3.4 Response to Specific Issues Raised by Prescribed Bodies

3.4.1 Planning Policy Compliance

251. The following prescribed bodies and local authorities raised a number of location-specific policy concerns in relation to the Proposed Project. Transport Infrastructure Ireland (TII) raised issues regarding compliance with road policies affecting Offaly and Tipperary. Tipperary County Council also raised similar concerns to TII regarding the provision of a construction site entrance off a national road at Lisgarraff, in the context of the County Development Plan, and noted that the Proposed Project would deliver limited direct benefit to the county. Limerick County Council also queried the Project's alignment with the objectives of the Limerick Development Plan.

Unique ID	Name of Prescribed Body
WSP_SUB_99	Transport Infrastructure Ireland (TII)
WSP_SUB_114	Tipperary County Council
WSP_SUB_112	Limerick City and County Council

3.4.1.1 Applicant's Response

252. The TII submission states that the construction compound would be accessed from the N52 located on a road with a 100km/h speed limit contrary to proper planning, the National Road Guidelines and the

Tipperary County Council Development Plan. Tipperary County Council considers that the extensive development of infrastructure within and through the county, without any direct water supply benefits to Tipperary, is contrary to the principles of proper planning and sustainable development.

253. The Applicant would like to highlight that two out of the four potential future connections are located within County Tipperary. Whilst the potential future connections would not facilitate water supply to Tipperary as part of the Proposed Project, as the immediate need has not been identified in the Eastern and Midlands Plan, there are two potential future connection points located at the WTP access road (which would supply the Killaloe WRZ, Clare and the Newport WRZ, Tipperary) and the R491 in Newtown that could be brought forward by future applications by the Applicant which would directly benefit Tipperary. The Applicant also refers to the submitted Community Benefit Scheme which has accounted for the significant land take, 3 No. permanent infrastructure sites and 26% of the total pipeline length and Tipperary has therefore been allocated 52% of the funding allocation.
254. Section 12.5.2 of the Tipperary County Council Development Plan states that 'exceptional circumstances' may arise where new accesses or the intensification of existing access may be considered. As stated in Section 4.3.4 of the submitted Material Contravention Statement where the Construction Compound at Lisgarraff is discussed in the context of Section 15.5.2 and Objective 12-4, the Applicant does not consider the Proposed Project to materially contravene Section 15.5.2 or Objective 12-4 as the Construction Compound will represent a temporary requirement and would fall within the category of exceptional circumstances. The issue raised over the Construction Compound is also addressed in the Traffic and Transport section of this Submissions Report at Section 8.4.1 – Road Safety Audits.
255. The Applicant refers ACP to Section 9.4.6.1 of the submitted Planning Report which identifies policies and objectives in the Tipperary County Development Plan that are relevant to the Proposed Project. Each objective is reviewed and analysed in the context of the Proposed Project, and a response is set out demonstrating that proposal aligns and complies with the objective. The Planning Report concludes that the Proposed Project aligns with the policies and objectives of the Tipperary County Council Development Plan and is in accordance with the principles of proper planning and sustainable development. Furthermore, the Material Contravention Statements concludes that the Proposed Project would not result in a material contravention of any of the policies and objectives of the Tipperary County Council Development Plan.
256. The Applicant notes that the creation of new access and intensification of existing accesses to national roads should be avoided in accordance with the above policies. During the Construction Phase of the Proposed Project, one of the four Construction Compounds located in Tipperary will be along the N52 National Secondary Road at Lisgarraff, with the others located at each of the infrastructure sites (RWI&PS, WTP, and BPT). We consider that this would not be conflicting with the Council's policies as outlined in Section 12.5.2 as this will represent a temporary requirement and would fall within the category of exceptional circumstances as outlined later in the policy. Objective 12-4 underlines to need to avoid the creation of such access points in order to maintain the safety, capacity and efficiency of the road network but does not preclude them. We therefore do not consider there to be a contravention of Section 12.5.2 or Objective 12-4.
257. The Applicant refers ACP to Section 9.3.5.3 of the submitted SID Planning Report which identifies objectives of the Limerick Development Plan that are relevant to the Proposed Project. Each objective is reviewed and analysed in the context of the Proposed Project, and a response is set out demonstrating that proposal aligns and complies with the objective.

3.4.2 Security of Supply

258. The prescribed body submission from Limerick City and County Council raised concerns regarding security supply issues as well as Trihalomethanes (THM) in their water supply.

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick City and County Council

259. The submissions raised concerns that Limerick City and its hinterland remain vulnerable due to reliance on a single drinking water treatment plant with no backup, posing risks to population growth, industry, and investor confidence. It was argued that the Proposed Project should enhance resilience by providing an alternative supply and addressing ongoing THM issues at the Clareville treatment plant. The submissions also emphasised the need for the Applicant to prioritise resolving capacity constraints in towns and villages across rural Limerick, noting that the proximity of the proposed Birdhill plant to Castletroy Reservoir presents a cost-effective opportunity to secure Limerick City's water supply.

3.4.2.1 Applicant's Response

260. The Applicant acknowledges the importance of water security and resilience but states that issues relating to Limerick's reliance on a single treatment plant, THM compliance, and local capacity constraints fall outside the scope of this SID application. The Proposed Project has been designed in accordance with the NWRP and the Eastern and Midlands Regional Water Resources Plan, which identify priority Water Resource Zones; County Limerick is not included for immediate supply under these plans. Accordingly, the Proposed Project does not provide for water supply to Limerick, and related local water quality and capacity matters are not addressed as part of this application.
261. The Applicant notes the concern raised regarding Trihalomethanes in the Limerick water supply. While this specific matter is outside the scope of the Proposed Project, it should be noted the proposed Water Treatment Plant has been designed to the Applicant's engineering standards, ensuring compliance with stringent EU drinking water regulations, which includes treatment for THMs.

3.4.3 Future Take Offs

262. The prescribed body submission from Offaly County Council raised the inclusion of future off-takes within County Offaly, including Tullamore/Mountbolus and Dunkerrin/Moneygall/Borrisokane Water Resource Zones, is particularly welcomed.

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

3.4.3.1 Applicant's Response

263. The locations of the future take-off points were identified in accordance with the Regional Water Resources Plan - Eastern and Midlands Plan. The Tullamore/Mount Bolus WRZs and Dunkerrin/Moneygall/Borrisokane WRZs were identified as having a deficit and in need of an additional supply to support the current and future needs of the WRZ. This water supply can be facilitated when future planning applications are brought forward.

3.4.4 Development Contributions and Bonds

264. The prescribed body submissions from Offaly County Council and Tipperary County Council raised Development Contributions and Bonds within their submission.

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council
WSP_SUB_114	Tipperary County Council

265. Offaly County Council stated that they would request a total development contribution of €8,541,040, subject to any modification to the scheme. They recommended that a bond, to the value of €1,092,000, be required to secure the reinstatement of public roads that may be damaged as a result of the proposed development.
266. Tipperary County Council stated that a Bond to the sum of €1,620,000 is required to repair major road defects resulting from the scheme and the Applicant contribute towards the monitoring of construction works and public queries. Tipperary County Council have also requested a development contribution in respect of the abstraction.

3.4.4.1 Applicant's Response

Bonds:

267. In relation to the request from Offaly County Council and Tipperary County Council in respect of bonds the Applicant would note that ACP do not have the power to require bonds for road reinstatement. A local authority has power under section 34(4)(g) of the Planning and Development Act 2000-2026 to impose (g) conditions for requiring “the giving and maintaining of adequate security for satisfactory completion of the proposed development.” ACP has no power to do this when granting planning permission in respect of SID development under section 37A to J of the Planning and Development Acts. Presumably this is because SID development is development essential to fulfilling public policy objectives and is often works for the public benefit. If damage is caused to roads, by any person, local authorities may recover the costs of repair under various sections of the Roads Act 1993 and the Water Services Act 2014. See Guidelines for Managing Openings in Public Roads 2017 at [guidelines-for-managing-openings-in-public-roads.pdf](#). The Applicant submits that it is not appropriate to impose an additional obligation indirectly by way of planning condition which does not align with the legislation. See *Ashbourne Holdings v An Bord Pleanála* [2003] IESC 18.

Development Contributions:

268. Section 48 of the Planning and Development Act 2000 (as amended) (the “Planning Act”) enables a planning authority, when granting an ordinary planning permission under section 34, to include conditions requiring the payment of a development contribution. This contribution goes towards funding infrastructure or facilities which will be provided for, or, on behalf of the local authority and that will benefit the local area. Section 48 also provides that each local authority shall prepare a development contribution scheme and that this scheme will state the basis for determining the contributions and shall have regard to the actual costs of providing the public infrastructure.
269. This does not ordinarily apply to applications made under a section 37E as these are projects that are by their nature deemed to be of strategic or economic importance to the State or region. This is definitively so in the case of the Proposed Project, which has the capacity to address water supply needs for up to 50% of the State's population. However, ACP, in its discretion, may apply a condition requiring the payment of a contribution under section 48 if certain conditions are satisfied.

Tipperary County Council Development Contributions:

270. In the case of Tipperary, they have requested that Class 17 and Class 18 (levy on abstraction) be applied to the Proposed Project. The Applicant does not believe there is justification or rationale to apply this contribution in this instance for the following reasons:
271. The Applicant is working to transform water infrastructure and services for communities all over Ireland. The Proposed Project is vital for social and economic growth. The delivery of this vital water supply is a key benefit in itself. Notwithstanding this, it is recognised that communities in proximity to the proposed infrastructure can be impacted during construction. As part of its application, the Applicant submitted a detailed plan on Community Benefits Scheme (CBS). This CBS was prepared following much research and stakeholder engagement. The Applicant held multiple WSP briefings with all relevant local authorities to provide an overview of the proposed approach to the CBS and to seek feedback on the research findings within the study area. The research and stakeholder engagement undertaken identified opportunities to support socio-economic, environmental and educational progress in host communities. The proposed scheme aims to offset some of the social impacts of this major infrastructure development in a targeted, fair and proportionate way.
272. Section 5.1 of the Tipperary Development Contribution Scheme (“**TDCS**”) states that the planning authority must be satisfied that the basis for determining the contribution levels can be adequately justified and supported and it is not clear to the Applicant how a contribution for the provision of a public service by way of the laying of pipes or for water abstraction, at no cost to the local authority has been justified. In the preparation of their Development Contribution Schemes, planning authorities are required to have regard to the Development Contribution Guidelines for Planning Authorities. These were issued by the Department of the Environment, Community and Local Government, in January 2013 under Circular Letter PL1/2013. They must also take account of the non-statutory guidance previously issued in Departmental Circulars PD 4/2003 and PD 5/2007.
273. The 2013 Guidelines states that in making development contribution schemes it “is equally important that clear linkages are demonstrated between the contributions collected [and] infrastructure provided”. Tipperary County Council will not be put to any expense in respect of the laying of pipes or the abstraction.
274. The TDCS says its rationale for development contributions is:
- “Para 3.0 Rationale for Development Contributions When new development occurs it impacts on the capacity of existing infrastructure networks. Such development places a greater demand on the services provided by Tipperary County Council. It is considered equitable that developers contribute to the financial burden associated with the provision of enhanced infrastructure networks facilitating new development. However, the DCS ensures that the cost of infrastructural improvements does not fall disproportionately on new development and takes account of benefit to existing development.”*
275. The TDCS being applied to the Proposed Project does not accord with the rationale. There is no financial burden on TCC associated with the Proposed Project. On the contrary the Applicant has had extensive interactions with Tipperary County Council’s Directors of Services to understand existing local community infrastructure, policy and development plans, and as a result the CBS proposes that a significant percentage will be allocated to Tipperary County Council. The Applicant remains of the view that the funding allocation and duration should reflect the Proposed Project’s impact on communities during the five-year Construction Phase rather than a fund based on an abstraction or development levy over the Proposed Project’s full operational life, which is more aligned with private developer led, or profit driven, projects. Therefore, the Applicant’s Community Benefit Scheme will propose a more equitable and proportionate utilisation of limited public taxpayers’ money.

276. Class 18 of the TDCS relates to “the laying of pipes for the movement of water through the County and the ongoing abstraction of water from any point within the County” and the level of contribution is charged at €15 per linear metre and 1 cent per m³ abstraction.
277. In addition, planning permission is not required for the abstraction of water and section 48 contributions cannot be levied for an activity for which planning permission is not required. The charge for the abstraction is in fact a permanent and perpetual toll or tax on an abstraction and on water going through the pipes in Tipperary not a “contribution” towards the cost of any past or proposed development which TCC or any local authority has carried out or proposes to carry out under its DCS. There is no statutory authority in planning law for charging abstractors for abstracting water. Moreover, there are no works listed in the DSC that could justify this levy even if it were legally imposed. A permanent levy of 1 cent per m³ would mean that the Applicant is paying a completely disproportionate amount.
278. The Applicant submits that the abstraction charge is a tax or toll, not a *contribution*. A contribution is a payment towards something. ACP can only levy the contribution towards something where Tipperary can point to “public infrastructure and facilities which it or another local authority has provided or will provide and which benefit development in its area”. If TCC has not provided infrastructure or facilities (and will not be providing them), they cannot be charged for. There is no statutory power to require a contribution for abstractions and no power to tax or toll abstractions.
279. It is submitted that there is no justification for a condition requiring a contribution to Tipperary County Council in respect of the pipeline for the reasons above

Offaly County Council Development Contributions

280. Offaly County Council requests the payment of a contribution of €100,000 per km for the pipeline associated with the Proposed Project in its local authority area. Tipperary County Council is, as set out above, proposing to charge €15,000 per km for the pipeline. The 2013 Development Contribution Guidelines states that development contributions:

“should not have a major divergence in the level of contributions adopted by other local authorities in the area; - impede job creation or facilitate unsustainable development patterns”.

281. The Offaly contribution request fails to comply with the guidelines. A levy of €100,000 per kilometre would represent a completely disproportionate amount in the context of the development contributions Offaly CC has recorded as received in recent years. Offaly County Council has not set out the basis for the contribution levied in its SCS as required by Section 48(2)(a). Section 48 (2)(b) provides “a scheme may make provision for payment of different contributions in respect of different classes or descriptions of development”. This has not been done, and instead Offaly CC is targeting a single project to be carried out by an identified and specified developer. It is difficult to see what the local authority proposes doing or has done by way of providing public infrastructure and facilities in the county as defined in section 48(17) which justifies this charge. The 2013 Guidelines states that in making development contribution schemes it “is equally important that clear linkages are demonstrated between the contributions collected [and] infrastructure provided”. This is not the case here. The same reasons for not imposing a contribution for pipelines in Tipperary also apply to this contribution.

3.4.5 Community Benefit Scheme

282. The following prescribed bodies and local authorities raised concerns regarding the Community Benefit Scheme associated with the Proposed Project. :

Unique ID	Name of Prescribed Body
WSP_SUB_94	Health Service Executive (HSE) - National Office for Environmental Health Services
WSP_SUB_110	Clare County Council
WSP_SUB_111	Kildare County Council
WSP_SUB_112	Limerick City and County Council
WSP_SUB_113	Offaly County Council
WSP_SUB_114	Tipperary County Council

283. The submissions raised a range of concerns regarding the scope, duration, distribution, and governance of the Community Benefit Scheme associated with the Proposed Project. The HSE highlighted opportunities to incorporate health gain measures in line with Healthy Ireland and national health strategies, noting these were discussed with the Applicant at a meeting in November 2024. Local authority submissions, particularly from Tipperary and Clare County Councils, argued that the Mid-West region would not directly benefit from the new water supply despite hosting significant infrastructure, and called for a longer-term, adequately funded scheme reflecting the permanent nature of the Project. Several authorities, including Tipperary, Limerick, and Offaly, questioned the appropriateness of the five-year duration and the 5km eligibility radius, while Kildare and Offaly sought increased allocations to better reflect local impacts. Offaly County Council further contended that basing community benefit solely on construction expenditure undervalues the Project's strategic significance and advocated for an increased funding percentage, higher county-level allocation. Offaly County Council requested that the maximum allocation per project under the CBS should be at least €100,000, and that there should be a dedicated administrative support in each Local Authority funded by the Applicant.

3.4.5.1 Applicant's Response

284. The Community Benefit Scheme submitted as part of the SID planning application was informed by a Community Benefit Study (conducted by the RPS Group), key stakeholder engagement and public consultation. Page 2 of the Community Benefit Scheme sets out the research and engagement process which informed its development. The Applicant thanks the HSE for providing feedback throughout the pre-planning phase. From the research and public consultation carried out, the Community Benefit Scheme was developed and aims to deliver support for community initiatives under the categories of Economy, Education and Environment. Whilst there is not a specific 'Health' category, it is anticipated that there will be health gain opportunities through the delivery of the Proposed Project. Chapter 15 of the submitted EIAR assesses the potential impact of the Proposed Project on Human Health, and found there would likely be a positive, very significant long term effect on Human Health from the Operation Phase of the Proposed Project. Overall, the delivery of the Proposed Project will allow the Applicant to provide the water services essential to public health and sustainable development.

285. The Applicant highlights that two out of the four potential future connections are located within County Tipperary. Whilst the potential future connections would not facilitate water supply to Tipperary and Clare as part of the Proposed Project, there are two potential future connection points. One is located at the WTP access road (which could supply the Killaloe WRZ, Clare and the Newport WRZ, Tipperary) and the other near Cloughjordan which could supply the local WRZ and several nearby interconnected areas. Such potential future connections brought forward by future applications by the Applicant, in line with the RWRP would directly benefit Tipperary and Clare.

286. The Applicant refers to the submitted Community Benefit Scheme, which details the specialist research undertaken that examined available socio-economic and demographic information and, in combination with stakeholder engagement, highlighted community development priorities and frameworks that the

Applicant can align with to ensure that the benefits of the Proposed Project are maximised for local communities.

287. As part of the research study provided in the SID application, similar large scale projects in energy, transportation and healthcare sectors were reviewed to ascertain the level of community gain investment that was proposed or implemented. This was undertaken to understand if the Proposed Project fund could be benchmarked against other large scale projects to align the funding and approach. Through the research it was found that there is no standard or common approach to community gain investment in the water supply sector in Ireland or the UK. It was also found that community funding initiatives for nationally important projects in the energy and transport sectors were usually associated with the construction phase and /or a defined period of the operational phase.
288. With regard to the 5 year fund duration, taking into account that Chapter 14 of the submitted EIAR concluded that there were anticipated to be no significant residual negative effects on people and communities during the Construction and Operational Phases, it is considered that a five year fund duration, aligning with the Construction Phase, is appropriate for publicly funded project rather than over the operational period, which is more aligned with private developer led, or profit driven, projects. The 5km radius for funding support was proposed to ensure that the communities experiencing the greatest impact during the Construction Phase are prioritised and receive proportionate funding. The Applicant considers the 5km radius, inclusive of communities adjacent to Lough Derg, to be appropriate for the Proposed Project.
289. As stated in Section 3.3.1 of the Community Benefit Scheme, there is no statutory formula or standard practice to determine how a community gain investment fund for this type of public water infrastructure should be funded. The Community Benefit Scheme uses the EirGrid Celtic Interconnector project as an example which represents approximately 0.15% of the projected €1.6Bn construction cost. The Applicant is proposing to benchmark the Proposed Project's investment fund against similar large scale infrastructure projects. As a publicly funded project, the allocation of approximately 0.15% of the construction budget is considered proportionate and reasonable keeping in mind the business case for the project.
290. Several of the Local Authority submissions raised concerns over the proposed weighted fund allocation. Section 3.3.2 of the Community Benefit Scheme explains that the weighted allocations are based on quantifiable aspects of the project and provides an objective basis to assess the scale of impacts during the Construction Phase using various criteria. Table 3-1 of the Community Benefit Scheme proposes the weighted allocations. The Applicant considers that the fund allocations are appropriate for the Proposed Project.

3.4.6 Biodiversity Net Gain Policy

291. The prescribed body submission from Kildare County Council raised specific issues in relation to biodiversity net gain:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

292. This prescribed body submission stated that there is no consideration of biodiversity net gain in the planning application and this is inconsistent with policies in the Kildare County Development Plan (i.e. BI P1 and BI O7).

3.4.6.1 Applicant's Response

293. The Applicant refers ACP to the Planning Report and Material Contravention Statement submitted as part of the SID planning application. Policy BI P1 and Objective BI O7 are addressed in the submitted documentation and notes that the Proposed Project would not inhibit future opportunities for biodiversity net gain and that the policy and objective seek to pursue the aims of biodiversity net gain insofar as possible but it is not a mandatory requirement in new developments.

4. Consultation and Communication

4.1 Overview

294. Twelve of the 114 submissions received by ACP raised matters relating to consultation and communication in respect of the Proposed Project. These submissions primarily questioned the adequacy of consultation undertaken, access to information, and the extent to which previous consultation responses were addressed.
295. The Applicant's approach to consultation and engagement for the Proposed Project is documented in detail in the Consultation Report 2025 which was included in the documentation submitted as part of the SID Planning Application. In addition, full and detailed responses to matters raised during the non-statutory consultation process were set out in the Non-Statutory Consultation Submissions Report 2025 which was included as an appendix to the Consultation Report 2025, as well as being issued to key stakeholders and those that made submissions on the project, as well as being published on the project website in October 2025.
296. Together, these documents provide the evidential basis demonstrating that a comprehensive, transparent and proportionate consultation and engagement process has been undertaken. This Chapter responds specifically to matters raised in submissions to ACP in respect of consultation and communication and should be read alongside the following Chapters of this Report, which address issues raised in submissions in greater technical detail:
- Chapter 5 (Consideration of Reasonable Alternatives);
 - Chapter 6 (Proposed Project Description);
 - Chapter 7 (Construction and Commissioning);
 - Chapter 8 (Noise & Vibration);
 - Chapter 9 (Traffic and Transport); and
 - Chapter 15 (Air Quality).
297. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
298. There were only a small number of responses specific to consultation and communication and these all relate to the adequacy of the consultation. The Applicant maintains that a robust and legally compliant consultation and engagement process has been adopted and followed for the Proposed Project.
299. This Chapter is structured around the following sections:
- General matters raised regarding consultation and communication;
 - Specific matters raised on consultation and communication; and
 - Specific matters raised by Prescribed Bodies regarding consultation and communication.

4.2 Response to General Issues Raised

4.2.1 Public Consultation Adequacy

300. The following submissions raised concerns that the public consultation for the Proposed Project was not adequate / insufficient:

Unique ID	Name of Individual or Organisation
WSP_SUB_22	Michael Reidy
WSP_SUB_34	Castleconnell Boat Club
WSP_SUB_52	John Sadlier
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh

4.2.1.1 Applicant's Response

301. The Applicant does not agree with the observations made in these submissions and has prioritised public and stakeholder engagement from an early stage and throughout the development of the Proposed Project. This has been demonstrated in the Consultation Report 2025 (submitted as part of the SID Planning Application) which evidences that a comprehensive and robust process has been used to engage and consult with relevant stakeholders over a prolonged period of time. As part of both statutory and non-statutory engagement for the Proposed Project, the Applicant employed a range of consultation formats and information materials designed to ensure accessibility, geographic reach and meaningful participation. Details of consultation activities undertaken, together with the materials made available and issues raised, are documented in the Consultation Report 2025 and the Non-Statutory Consultation Submissions Report 2025 appended to the Consultation Report 20025, which form part of the planning application record.
302. In summary, this included, but was not limited to four rounds of non-statutory consultation that were completed on previous iterations of the project, involving over 1,500 stakeholders including landowners, community groups, and public bodies. This process included input from statutory bodies such as the EPA and various government departments.
303. Then, from 7 January to 4 March 2025, an eight-week consultation on the Proposed Project was held. A comprehensive media and outreach campaign supported the consultation, including national and regional media, radio and newspaper adverts, social media, public webinars, and six in-person events near key infrastructure sites in Tipperary (including the Clare/Tipperary border), Offaly, and Kildare. A virtual consultation room and a freephone line were also provided.
304. Consultation formats;
- Consultation formats employed for the Proposed Project included:
 - In-person public information events held at accessible locations along the project corridor;
 - Public webinars and online briefings to facilitate participation by those unable to attend in person;
 - A virtual consultation room providing online access to consultation materials and project information;
 - Direct engagement with landowners potentially affected by the Proposed Project;
 - Briefings for stakeholders, local authorities, prescribed bodies and elected representatives;
 - A dedicated freephone information line and project email address.
 - Information and consultation materials made available included:
 - Consultation brochures and non-technical summaries explaining the Proposed Project;
 - Project fact sheets and frequently asked questions (FAQs) addressing key issues raised;

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- Maps, drawings, plans and explanatory graphics illustrating the Proposed Project and alternatives considered;
- Online content including videos and explanatory materials hosted on the project website; and
- Public display of consultation documents at libraries and local authority planning counters.

305. Further details of the engagement and communication during the consultation is included in the Water Supply Project Eastern and Midlands Region - Non-Statutory Consultation Submissions Report 2025 contained as an appendix in the Consultation Report 2025.
306. Ongoing engagement following completion of the non-statutory consultation process, has continued with the Applicant engaging with communities, landowners and stakeholders through the appointment of a Community Liaison Officer and the provision of community information and engagement clinics. These measures provide continuity of engagement beyond formal consultation periods and ensure that accessible points of contact remain available as the Proposed Project progresses through the planning and pre-construction stages.
307. The Applicant also worked in close coordination with the Department of Housing, Local Government and Heritage to ensure that the Proposed Project aligns with national policy, planning regulations, and environmental obligations.

4.2.2 Public Participation - Compliance with the Aarhus Directive

308. The following submissions raised concerns that the process for the Proposed Project is not compliant in relation to the Aarhus Directive:

Unique ID	Name of Individual or Organisation
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_110	Clare County Council

309. Clare County Council commented that Ireland is a party to the Aarhus Convention, which guarantees public rights to access environmental information, participate in decision-making, and seek justice. Planning permissions may be challenged where consultation processes are inadequate, information is overly technical or inaccessible, or key environmental data is released too late. For complex infrastructure projects, it is essential that the public has a meaningful opportunity to understand and comment on environmental assessments, hydrological modelling, and ecological surveys.
310. Councillor Dr Phyll Bugler commented that granting the proposal would breach eight EU legal frameworks designed to protect water quality, biodiversity, public participation, and climate obligations. These include the Water Framework Directive, Habitats Directive, Birds Directive, Environmental Impact Assessment Directive, Strategic Environmental Assessment Directive, Drinking Water Directive, EU Climate Law and Environmental Principles Regulation, and the Aarhus Convention.

4.2.2.1 Applicant's Response

311. The Applicant does not agree that consultation and engagement for the Proposed Project fail to comply with the requirements or principles of the Aarhus Convention.
312. The Aarhus Convention establishes principles relating to access to environmental information, public participation and transparency in environmental decision-making. In accordance with those principles,

the Applicant committed at the outset of the project to providing early, accessible and meaningful opportunities for public engagement.

313. This approach is detailed in Consultation Report 2025 submitted as part of the SID Planning Application to ACP and this provides the evidence that the proposed Project has met the requirements of the Aarhus Convention.² The consultation in 2025 is in addition to the entitlement members of the public have to make submissions to ACP as part of the planning application process, which entitlement stems directly from the Aarhus Convention and the EIA Directive.
314. The non-statutory consultation opportunities described above were additional to, and did not replace, the statutory entitlement of members of the public to make submissions and observations to An Bord Pleanála as part of the planning application process. That entitlement arises directly from the Aarhus Convention, the EIA Directive and the Planning and Development Act 2000 (as amended). All environmental information submitted as part of the planning application, including the EIAR, is publicly available for inspection and forms the basis for statutory participation.
315. In parallel with public consultation activities, the Applicant undertook direct engagement with Local Authorities and elected representatives during the development of the Proposed Project. This included structured briefings with Local Authority officials, councillors and elected representatives to outline the Proposed Project, explain the consultation and planning process, and provide opportunities for questions and feedback.
316. Local Authority and elected representative engagement formed part of the wider consultation programme and complemented public consultation activities by ensuring that institutional stakeholders and democratically elected representatives were informed of the Proposed Project and associated environmental assessments. Details of these engagements are recorded in the reports highlighted, which form part of the planning application.
317. Having regard to the nature, duration and breadth of consultation undertaken, the Applicant considers that the Proposed Project fully complies with the requirements and principles of the Aarhus Convention.
318. The Applicant has prioritised public and stakeholder engagement throughout the development of the Proposed Project. Four rounds of non-statutory consultation have been completed on previous iterations of the project, involving over 1,500 stakeholders including landowners, community groups, and public bodies. The process includes input from statutory bodies such as the EPA and various government departments.
319. From 7 January to 4 March 2025, an eight-week consultation on the Proposed Project was held. A comprehensive media and outreach campaign supported the consultation, including national and regional media, radio and newspaper adverts, social media, public webinars, and six in-person events near key infrastructure sites in Tipperary (including the Tipperary/Clare border), Offaly, and Kildare. A virtual consultation room and a freephone line were also provided, further detailed in the Water Supply Project Eastern and Midlands Region - Non-Statutory Consultation Submissions Report 2025 contained as an appendix in the Consultation Report 2025. The Applicant also worked in close coordination with the Department of Housing, Local Government and Heritage to ensure that the Proposed Project aligns with national policy, planning regulations, and environmental obligations.

² [Water Supply Project Eastern and Midlands Region Consultation Report 2025](#)

4.2.3 Access to Technical Information

320. The following submissions raised concerns about not being given access to technical information to allow time for an independent review:

Unique ID	Name of Individual or Organisation
WSP_SUB_34	Castleconnell Boat Club
WSP_SUB_45	Friends of the Irish Environment

321. The general submission from Castleconnell Boat Club commented that Hydrological Modelling was not available to the public in time for the consultation.
322. In their submission, Friends of the Irish Environment highlighted the highly technical nature of the documentation, noting that it is difficult for members of the public to understand without engaging independent technical specialists to review, interpret, and respond to it on their behalf. They also emphasised that, given this complexity, the approving authority itself should engage suitably qualified independent experts prior to making any decision on the project.

4.2.3.1 Applicant's Response

323. During non-statutory consultation, the Applicant made available a significant volume of technical and non-technical information in order to facilitate early engagement and understanding of the Proposed Project. However, the preparation of large-scale infrastructure projects is iterative, and certain technical assessments continued to be refined and finalised up to submission of the planning application.
324. The statutory planning process provides the appropriate mechanism through which final technical documentation may be reviewed and considered. The statutory public consultation period following application submission provides the formal opportunity for the public to review the complete documentation and make submissions to ACP. The timing and duration of this process are set by legislation.
325. Technical assessments undertaken for the Proposed Project, including hydrological modelling, are documented in the EIAR submitted as part of the SID Planning Application and were made available to the public via the project's planning application website (www.watesupplyproject.ie). Members of the public are entitled to review that information and to make submissions or observations to ACP within the statutory timeframes provided for under planning legislation.
- As stated in section 4.2.2, the Applicant has prioritised public and stakeholder engagement throughout the project, completing four rounds of non-statutory consultation and engaging with over 1,500 stakeholders, including communities, landowners, public bodies, the EPA, and government departments.
 - An eight-week non-statutory consultation (January–March 2025) was supported by extensive media outreach, virtual briefings, recorded webinars and several in-person events. As part of these in-person events key project personal and technical specialists were available to engage directly with the public discuss concerns, clarify technical issues, and assist participants in navigating and understanding the consultation materials.
 - A hydrological modelling report and a water quality modelling report describing the assessment of potential impacts on flows, water levels and water quality in Lough Derg, Parteen Basin, and the Old River Shannon due to the proposed abstraction is included in the EIAR in Chapter 9 (Water). To model the future impact of the Proposed Project, a hydrological model was developed to simulate the operational principles that are used to keep water levels within its normal operating band on Lough Derg and upper and lower levels on Parteen Basin. This predicts the effect of the Proposed Project on flows to Ardnacrusha and on water levels on

Parteen Basin taking account of future climate change, while meeting the required statutory compensation and fish pass flows to the Old River Shannon. This was described in the Project Summary Report 2025 published to support the Non-Statutory Consultation in 2025.

4.2.4 Adequacy of Previous Consultation Responses

326. The following submissions raised concerns about the adequacy of the previous consultation responses received in relation to the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_42	Eileen McNamara
WSP_SUB_104	Peamount Healthcare

327. The general observation from Peamount Healthcare cited their submission to non-statutory public consultation in 2025. The submission raised concerns about potential health risks arising from construction activities near Peamount Hospital.
328. Peamount Healthcare noted that the proximity of the TPR access road to the hospital could expose patients, particularly those with neurological conditions or disabilities, to increased noise and traffic-related disturbance. They requested further consultation on noise abatement.
329. The general observation from Eileen McNamara queried the response to the submission to the non-statutory public consultation held on the Proposed Project in 2025.

4.2.4.1 Applicant's Response

330. The Applicant has actively sought and responded to public feedback throughout the Proposed Project's development. Eileen McNamara and Peamount Healthcare made submissions as part of the non-statutory consultation in March 2025, and both were considered by the Applicant. The non-statutory consultation submissions were responded to in the Water Supply Project Eastern Midlands Region Non-Statutory Consultation Submissions Report 2025 available on the project website ³ and summarised in the Consultation Report 2025 (with the full report appended to that Report). The Applicant considers that previous consultation submissions were duly considered and responded to in a transparent and documented manner.
331. Multiple meetings have been held with Peamount Healthcare and mitigation measures were included in the EIAR submitted as part of the SID Planning Application in response to the matters that had been raised including regarding noise (in Chapter 6 (Noise & Vibration) in the EIAR, dust including the risk of Aspergillus, (Chapter 12 – Air Quality) and these are discussed further in Chapter 8 (Noise & Vibration), Chapter 15 (Air Quality) and Chapter 18 (Human Health) of this report. Other matters raised by Peamount Healthcare are considered in Chapter 5 (Consideration of Reasonable Alternatives) and Chapter 9 (Traffic and Transport).

4.2.5 Landowner-Specific Engagement

332. Submissions from landowners raised specific issues relating to inadequate engagement and lack of clarity provided in relation to design details of the Proposed Project on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens

³ [Water Supply Project Eastern Midlands Region Non-Statutory Consultation Submissions Report 2025](#)

Unique ID	Name of Individual or Organisation
WSP_SUB_03	Gordon Beattie & Leslie Beattie
WSP_SUB_74	John Hensey
WSP_SUB_91	James Waldron (McEnteggart Consultancy)
WSP_SUB_92	Judith Koehler
WSP_SUB_97	Seamus Cullen
WSP_SUB_100	A.M.R Limited
WSP_SUB_102	Fonsell Ltd
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

4.2.5.1 Applicant's Response

333. The Applicant does not agree with the submissions made regarding the level of engagement with landowners. Consultation and engagement with landowners have been a key priority throughout the development of the Proposed Project. There are approximately 500 landowners along the route of the Proposed Project and engagement has been ongoing with these landowners since 2016. This has primarily been undertaken via four Landowner Liaison Officers who have been advising landowners on the progress of route development and technical design and arranging access for environmental surveys and ground investigation surveys.
334. The Consultation Report 2025 submitted with the SID planning application describes the engagement undertaken with landowners and feedback provided. This has included, but was not limited to:
- Engagement with 1,500 stakeholders (not all landowners) as part of previous iterations of the project up to the Final Option Appraisal Report (FOAR);
 - 13,500 individual interactions, after the publication of the FOAR (between 01/01/2017-26/11/2025) with landowners;
 - Provision of scheme information on landowner mapping during the development of the proposals;
 - Consideration of 140 reroute requests; and
 - Engagement with 159 landowners during the 8-week non statutory public consultation.
335. The Consultation Report 2025, submitted as part of the SID planning application, sets out the landowner engagement undertaken, the matters raised and how they have been considered within the development of the Proposed Project. This includes a summary of the landowner engagement during the Non-Statutory Consultation in 2025 in the Non-Statutory Consultation Submissions Report 2025 which is appended to the Consultation Report 2025.
336. Extensive measures have been included within the SID planning application to address landowner concerns. These include, but are not limited to:
- Measures on the management of the construction phase in Chapter 5 (Construction and Commissioning) of the EIAR, such as, for example, fencing, access and reinstatement;
 - Commitments in the Construction Environmental Management Plan (CEMP) in Appendix A5.1 of the EIAR including for example, including, dust, noise and soil management; and
 - Specific mitigation measures in the assessment of agricultural impacts reported in Chapter 11 (Agriculture) of the EIAR including for example, drainage and biosecurity.

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337. In addition, the Applicant has provided landowners with a Landowner Handbook setting out how matters related to the use of the land for the Proposed Project will be managed.
338. The SID Planning Application for the Proposed Project includes documentation that fully describes the works proposed and provides the comprehensive planning and environmental assessments necessary to determine that it meets proper planning and sustainable development requirements. Specific observations raised by landowners are outlined in relevant chapters of this report including for example, Chapter 5 (Consideration of Reasonable Alternatives) and Chapter 6 (Proposed Project Description).

4.3 Response to Specific Issues Raised in General Observer Submissions

4.3.1 Future Take Offs

339. The following submission raised concerns that the public consultation for the potential future connections into the Proposed Project was not adequate / insufficient:

Unique ID	Name of Individual or Organisation
WSP_SUB_22	Michael Reidy

340. The general observer submission from Michael Reidy stated that the proposed pipeline has several take-off points already decided, and these will determine the line of the spur pipelines in turn. The submission continued that there will be many if not as much again number of landowners affected by these spur pipelines, and these landowners are entitled, at this stage, to know how they are to be affected and not find out piecemeal as time goes on.

4.3.1.1 Applicant's Response

341. The Applicant does not agree with the submission from Michael Reidy as the Applicant is not seeking planning permission for the potential future connections and is not making a commitment to the future projects that would be needed to deliver them. Therefore, no further information is included in the SID Planning Application.
342. The Applicant has been clear on the status of the potential future connections as set out in the EIAR in Chapter 4 – Proposed Project Description:

“Provision has been made for take-off points at strategic locations between the WTP [Water Treatment Plant] and TPR [Termination Point Reservoir]. These would facilitate future potential connections to supply communities in the Midlands within the Water Supply Area without disruption to the operation of the pipeline. The location of these future potential connections align with the Eastern and Midlands Plan (Irish Water 2022). The connecting pipelines and associated infrastructure would be delivered by Uisce Éireann through separate projects, yet to be designed, and would be subject to their own separate consenting processes.”

4.4 Response to Specific Issues Raised by Prescribed Bodies

4.4.1 Project Management

343. The prescribed body submission from Offaly County Council raised a specific issue relating to Project Management:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

344. Offaly County Council requested that the Applicant must appoint a full-time Public Liaison Officer and Resident Engineer for each Municipal District in Offaly (Birr, Tullamore, and Edenderry) to manage works and act as a dedicated contact for the local authority and the public. Public issues must be addressed within two weeks, with Offaly County Council mediating where issues remain unresolved.
345. Offaly County Council requested that the Applicant maintain a dedicated project website with clear project information, key contacts, and complaint procedures, supported by agreed on site signage. Details of such website and contact details for key personnel should be clearly displayed on a site sign located at each access point into the site from roads within Co. Offaly. The design and contents of such signage shall be agreed with the Planning Authority at least 6 months prior to commencement of the development. In addition, proposals for ongoing community engagement and communications such as public information evenings and project updates must be submitted and implemented throughout the project.

4.4.1.1 Applicant's Response

346. In addition to the communications summarised in Section 4.2, the Applicant has appointed a dedicated Community Liaison Officer (CLO) for the Proposed Project. The CLO is available to meet with members of the community and arrange drop-in information clinics. A post consultation series of these information clinics is already underway since February 2026. The CLO will to be a dedicated point of contact throughout the planning, construction and reinstatement phases.
347. The Applicant is fully committed to ongoing and proactive engagement with Local Authorities throughout the entire planning, construction and reinstatement phases, maintaining regular communication, coordinating activities where required, and working collaboratively to address any issues that arise in order to minimise disruption and ensure the successful delivery of the works. Details of engagement arrangements, complaint procedures and contact information will be made available on the project website and through appropriate on-site signage prior to the commencement of construction works.
348. The requests from the Council for pre-commencement conditions are addressed in other chapters of this report including for example, Chapter 9 (Traffic and Transport). The Applicant will engage appropriately at key milestones as this project progresses and continue to engage via existing local authority workshops and existing key points of contact. Further details on public engagement events will be available on the dedicated project website www.water.ie/watersupplyproject.

5. Consideration of Reasonable Alternatives

5.1 Overview

349. Sixty-seven of the 114 submissions raised the issue of alternative options and whether they were considered during the preparation of the design of the Proposed Project brought forward in the planning application.
350. An assessment of the consideration of reasonable alternatives was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 3 (Consideration of Reasonable Alternatives). The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 (The Environmental Impact Assessment Process) in the EIAR.
351. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding the consideration of reasonable alternatives. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 6 (Proposed Project Description); and
 - Chapter 7 (Construction and Commissioning).
352. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
353. A large number of submissions made reference to the availability of alternatives to the Proposed project including specifically leakage reduction and the availability of other sources of water. The matters were considered as part of the MWRP including the Eastern and Midlands Plan and were not an alternative to the Proposed Project as explained in the EIAR in Chapter 3 (Consideration of Reasonable Alternatives).
354. Multiple submissions also raised these alternatives in the context of the Water Framework Directive Assessment and / or Natura Impact Statement these have been considered in Chapter 25 (Natura Impact Statement) and Chapter 26 (Water Status Impact Assessment Report (Water Framework Directive)) of this report. Some submissions also linked alternatives and the cost of the Proposed Project. The cost of the Proposed Project is included as an overarching matter in Chapter 2 (Overarching Matters).
355. Similarly, there were some matters raised which were considered more a design matter than an alternative specifically requests for additional reservoir storage to be provided either close to the abstraction or in Dublin and these are addressed in Chapter 6 (Proposed Project Description) of this report.
356. This Chapter is structured around the following sections:
- General matters raised regarding the consideration of reasonable alternatives;
 - Specific matters raised regarding the consideration of reasonable alternatives; and
 - Specific matters raised by Prescribed Bodies regarding the consideration of reasonable alternatives.

5.2 Response to General Issues Raised

5.2.1 Leakage Reduction

357. The following submissions suggested that increased leakage reduction including repairing the current network in Dublin would remove the need for water and as result an abstraction of up to 300Mld, which forms the basis Proposed Project as defined in the SID planning application would not be required

Unique ID	Name of Individual or Organisation
WSP_SUB_02	Fight the Shannon Pipeline
WSP_SUB_07	Bridget Ginnity
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_10	Christopher Campion
WSP_SUB_12	Dr John Galvin
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_20	Kieran O'Connor
WSP_SUB_21	Deputy Mattie McGrath
WSP_SUB_23	Michelle Keary
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannans Fishing Club
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_29	Suzanne Noble
WSP_SUB_30	Terry Forristal
WSP_SUB_31	Tony O'Brien
WSP_SUB_36	Councillor Fiona Bonfield, Deputy Alan Kelly, Councillor Louise Morgan Walsh
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_40	Diarmuid O' Crowley
WSP_SUB_44	Eric Conroy
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_50	James Crowley
WSP_SUB_51	John Baker
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_57	Lucy Murphy
WSP_SUB_58	McKeogh's Hardware Ltd.
WSP_SUB_59	Melina Sharp and Michael Eversen
WSP_SUB_60	Michael Barker and Company

Unique ID	Name of Individual or Organisation
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_63	Port Omna Beo
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_65	Samuel Norris
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_71	Ballymore Eustace Trout and Salmon Anglers Association
WSP_SUB_72	Carol Killeen
WSP_SUB_77	Shane Matthews
WSP_SUB_80	An Taisce
WSP_SUB_106	Liam Minehan
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

5.2.1.1 Applicant's Response

358. In summary, the Applicant would emphasise that leakage reduction is being undertaken in parallel, and in addition, to the Proposed Project. However, an additional supply of drinking water is needed even accounting for leakage reduction targets. Therefore, the Applicant does not agree that leakage reduction is an alternative option to the Proposed Project rather it is an entirely separate and necessary measure to the Proposed Project, neither measure will affect each other but are needed from an overall supply perspective as set out in the Eastern and Midlands Plan.

359. The Applicant previously published its response on leakage [in response to the Non-Statutory Consultation on the Proposed Project] which was appended to the Consultation Report submitted and this position remains unchanged:

“Uisce Éireann is investing heavily in fixing leaks..... Thanks to this work, national leakage has already dropped.....

Despite significant progress in leakage reduction—saving approximately 200 million litres of treated drinking water daily, equivalent to the needs of over 1.5 million people—leakage reduction alone cannot meet future demand. Even in an ideal scenario where leakage is reduced to 10%, which is beyond realistic expectations for a city like Dublin, the system would still fall short.

Leakage percentages are at the lowest they've ever been. The amount of water lost from our networks has reduced from 37% to 30% in Dublin and from 48% to 36% nationally [now 49% to 36%]. Finding and fixing leaks is difficult and resource intensive work but our investment of €2billion over the last 10 years has meant that we have made significant progress. Sustaining this progress, however, is challenging in the face of a significant increase in demand for water and a range of operational constraints and challenges. Population and economic growth have driven a 15% increase in demand for water. As a result, any water saved from leakage repairs has been consumed by this growth. This coupled with more frequent extreme weather events due to climate change combined with an ageing network has put huge pressure on the network exacerbating the challenges we face on a daily basis. The average age of the water mains infrastructure in Ireland is estimated at 75 to 95 years. This compares to an EU average of 36 years (source: European Benchmarking Cooperation 2013)

We currently carry out over 500 network repairs every week across the country and have plans to increase this in the years ahead. We are committed to reaching a sustainable economic level of leakage by focusing resources on areas experiencing water shortages and higher demand. Our long-term goal continues to be the achievement of 20% leakage levels, and we are committed to achieving through appropriate and targeted investment in our water network.

Dublin's water infrastructure is operating at full capacity, with minimal headroom to accommodate growth. Demand is projected to increase by 34% by 2044, driven by population growth, housing development, and climate change, even after accounting for planned conservation and leakage reduction measures.

Moreover, the system lacks resilience, relying heavily on a single source—the River Liffey—which is already under pressure. A disruption to this source could result in widespread service outages affecting hundreds of thousands of people.

Therefore, a new, sustainable water source is essential to complement ongoing leakage reduction efforts. While fixing leaks remains a critical component of water management, it is not sufficient on its own to ensure long-term supply security and system resilience.”

360. The need for a major new water supply for the Region has been identified and detailed in the NWRP and has been informed by the Supply Demand Balance in the region, which is the difference between the water available for supply compared with the demand for water. The projected demand includes for domestic and non-domestic (i.e. commercial and industrial) demand; operational usage (such as flushing water mains and fire hydrants); apparent losses and leakage. Demand forecasting also considered leakage reduction, growth in demand and uncertainties.

361. As set out in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR, the NWRP including the Eastern and Midlands Plan confirmed the need for a New Shannon Source with Transfers and therefore, the assessment of reasonable alternatives in respect of the Proposed Project, did not re-consider strategic alternatives that had been considered and discounted by the NWRP (Irish Water 2021 and 2022). The alternatives assessment that was done was carried out within the defined Proposed Project objectives. Therefore, the reasonable alternatives in respect of the Proposed Project did not re-assess leakage reduction as an option.

5.2.2 Alternative Source

362. The following submissions suggested alternative water sources could meet demand in the Greater Dublin Area (GDA) instead of an abstraction from the Lower River Shannon. The alternatives suggested included; rivers Slaney, Liffey, Barrow and Boyne. Lough Ree and Poulaphouca reservoir were also raised.

363. The Applicant notes not all of the submissions listed in the table below raised all of these different options. However, they are all within the same general theme, that being that an alternative source of water is available and therefore, the Proposed Project is not required. Further, the Applicant's response to all of these proposals is a consistent response, as set out below, in this section.

364. The submissions included:

Unique ID	Name of Individual or Organisation
WSP_SUB_06	Brian Leddin
WSP_SUB_07	Bridget Ginnity
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_10	Christopher Campion

Unique ID	Name of Individual or Organisation
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_20	Kieran O'Connor
WSP_SUB_21	Deputy Mattie McGrath
WSP_SUB_22	Michael Reidy
WSP_SUB_23	Michelle Keary
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_29	Suzanne Noble
WSP_SUB_30	Terry Forristal
WSP_SUB_31	Tony O'Brien
WSP_SUB_36	Councillor Fiona Bonfield, Deputy Alan Kelly, Councillor Louise Morgan Walsh
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_42	Eileen McNamara
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_50	James Crowley
WSP_SUB_53	Keith Ball
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_60	Michael Barker and Company
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_63	Port Omna Beo
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_65	Samuel Norris
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_71	Ballymore Eustace Trout and Salmon Anglers Association
WSP_SUB_77	Shane Matthews
WSP_SUB_106	Liam Minehan
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

5.2.2.1 Applicant's Response

365. The Applicant does not agree that there are suitable alternative sources of water available. Similar to the position regarding leakage, desalination and groundwater and as set out in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR, the NWRP including the Eastern and Midlands Plan confirmed the need for a New Shannon Source with Transfers, as set out in Section 3.4 of Chapter 3, and therefore,

the assessment of reasonable alternatives in respect of the Proposed Project, did not re-consider strategic alternatives that had been considered and discounted by the NWRP and the assessment was carried out within the defined Proposed Project objectives. Therefore, the reasonable alternatives considered in respect of the Proposed Project did not include alternatives sources.

366. Notwithstanding, by way of general information and background as to how the proposed project was selected, UE confirms that the potential solutions to the water supply need in the Eastern and Midlands Region were under review for over 25 years and before deciding on the current proposal, the Applicant carefully examined a wide range of strategic alternatives. These included different water sources, routes, and infrastructure options. The final proposal was chosen based on what would best meet long-term needs while balancing environmental, technical, and economic factors. This decision was also shaped by detailed analysis and input from stakeholders.
367. During previous iterations of the project, the Applicant undertook a rigorous evaluation of water supply options between 2014 and 2018, using multi-criteria and cost-benefit analyses, financial assessments, and stakeholder engagement.
368. In parallel, the NWRP developed a 25-year strategy to ensure sustainable and resilient water supply nationwide. The Eastern and Midlands Plan, part of the NWRP, assessed over 1,100 unconstrained options, narrowing them to 594 feasible alternatives including groundwater, reservoirs, and transfer schemes.
369. Among these, the New Shannon Source with transfers was identified as the only solution capable of serving multiple Water Resource Zones and addressing regional deficits, including the Greater Dublin Area (GDA). It also offered superior resilience and service improvements.
370. In addition, an independent review was undertaken by the Commission for Regulation of Utilities (the CRU). The CRU was initially tasked with reviewing the project in 2018 and was later appointed as the external assurance body for water services under the Government's Public Spending Code (PSC) in 2021 and was tasked to carry out an independent review of the project under the PSC External Assurance Process in line with the DHLGH sectoral guidelines. This review included an assessment of the alternatives considered in the RWRP and concluded that the proposed project was the clear best option for meeting the deficit in the Eastern and Midlands Region.
371. Existing sources in the Eastern and Midlands Region including the River Slaney, Liffey, Barrow and Boyne are already operating near capacity. Many are vulnerable to drought and environmental constraints. Optimising these sources was included in the analysis but does not provide sufficient yield or resilience.
372. Abstractions from Lough Ree for the GDA were considered in the Regional Water Resources Plan - Eastern Midlands Plan. However as noted in the Eastern and Midlands Plan on review of the water available for abstraction it was noted that the ESB minimum normal operation levels for the Shannon at Lough Ree were not maintained during the 1995 drought without an abstraction. Any abstraction at this location would therefore not be resilient, as the yield is not available and would likely have a negative environmental impact. Therefore, this option did not meet the requirements of the Environmental, Resilience or Deliverability criteria and was not progressed to the fine screening stage.
373. Some submissions suggested that building more reservoirs could solve the region's water supply challenges. The Eastern Region's most viable reservoir sites, such as Vartry, Poulaphouca, and Bohernabreena, were developed over the past 150 years. These locations had the right combination of steep-sided valleys, stable geology, and sufficient river flow. Today, very few suitable sites remain, and those that do are often environmentally sensitive or heavily constrained. Under current EU and Irish environmental legislation, the creation of new impoundments is extremely difficult to justify. The scale of

construction, environmental impact, and long-term maintenance requirements make new reservoirs rare and often unviable in modern water planning. The issue in the Eastern and Midlands Region is not just about storage; it is about source availability and resilience. The region is already over-reliant on the River Liffey, and there is no spare capacity in the system. Even with more storage, a new, sustainable source of water is still needed to meet future demand and reduce risk.

374. One of the interim solutions for the GDA considered increased abstraction at Ballymore Eustace by optimising storage at Poulaphouca Reservoir. It is noted that our existing abstractions from the River Liffey are significant, and these may have sustainability issues in relation to the Water Framework Directive (WFD), in addition to reliability issues in drought periods. On that basis, any increases in abstraction from this water body would need to be carefully planned, be temporary in nature, and may need to be facilitated via exemption processes allowed for in legislation (with associated environmental assessments, as required). Storage from Poulaphouca can be optimised by works to reduce the level of the abstraction inlet and/or by modifications to the storage curve. Consideration would also need to be given to dam safety and a potential increase in flood risk along the Liffey if a proposal to change the storage curve was considered. This solution will not resolve the entire deficit in the GDA however nor improve the Level of Service.

375. The need for the Proposed Project is summarised in the SID Planning Application with the Planning Statement and the SID Engineering Report.

5.2.3 Groundwater Alternatives

376. The following submissions commented that groundwater was a viable alternative that had not been adequately assessed and would avoid the need for a 300Mld abstraction from the Lower River Shannon as set out in the SID planning application for the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_10	Christopher Campion
WSP_SUB_21	Mattie McGrath, TD
WSP_SUB_26	River Shannon Environmental Protection Alliance Company
WSP_SUB_27	St. Flannans Fishing Club
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_48	Garret Reil and Cliona Geary
WSP_SUB_50	James Crowley
WSP_SUB_65	Samuel Norris
WSP_SUB_114	Tipperary County Council

5.2.3.1 Applicant's Response

377. The Applicant does not agree that there are alternative groundwater supplies available. The Eastern and Midlands Plan considered all feasible options to provide supply to the Greater Dublin Area, including groundwater options. However, due to the limited yield availability compared to the magnitude of need in the Water Resource Zone, such solutions needed to be considered in combination with many other options. When solutions for the area were considered using the methodology set out in the NWRP - Framework Plan the provision of new groundwater supplies, were not determined as the proposed preferred approach for the area.

378. Similar to the position regarding leakage, desalination and alternative supplies and as set out in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR, the NWRP including the Eastern and Midlands

Plan confirmed the need for a New Shannon Source with Transfers and therefore, the assessment of reasonable alternatives in respect of the Proposed Project, did not re-consider strategic alternatives that had been considered and discounted by the NWRP. The assessment was carried out within the defined Proposed Project objectives. Therefore, the reasonable alternatives in respect of the Proposed Project did not include groundwater supplies.

379. Notwithstanding, by way of general information and background as to why the proposed project was selected, UE confirms that due to the natural geology of Ireland, largescale ground water storage is not available in all areas and in general groundwater is more applicable to smaller supplies in Ireland (80% of our small supplies are from Ground Water) sources). There are areas of gravel and karst aquifers with good productivity, which are being utilised in Co. Laois, Roscommon, and Ennis within the Eastern and Midlands Plan.

5.2.4 Desalination

380. The following submissions raised concerns on the assessment of Desalination as an alternative to the Proposed Project that would avoid the need for a peak abstraction of 300Mld from the Lower River Shannon:

Unique ID	Name of Prescribed Body
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannans Fishing Club
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_77	Shane Matthews
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

5.2.4.1 Applicant's Response

381. Desalination has been thoroughly assessed by the Applicant including as part of the identification of the Preferred Approach for the Eastern and Midlands Region in the Regional Water Resources Plan. While it may seem like a straightforward solution, desalination is not the preferred approach for Ireland's long-term water supply needs. By way of general information and background as to why the proposed project was selected, UE confirms that:

- Desalination alone cannot meet the volume or quality of water required. It would need to be combined with other sources—such as treated wastewater—to meet demand, and even then, it wouldn't address the lack of resilience in the current system.
- Desalination would only serve the Greater Dublin Area. It does nothing to support the 36 other Water Resource Zones across the Eastern and Midlands Region that also face supply deficits.
- Desalination uses 5 to 25 times more energy than conventional water treatment. This leads to significantly higher carbon emissions and operating costs—at odds with Ireland's climate goals.
- The process involves heavy chemical use and produces concentrated brine that must be discharged back into the sea. This raises serious concerns for marine ecosystems, especially nearby designated SACs.
- The whole-life cost of desalination is significantly higher than the Parteen Basin option. The cost-benefit analysis clearly shows that the Shannon-based solution is the better long-term investment.

- Desalination would require extensive planning, permitting, and infrastructure—including blending facilities to make the water palatable. This adds complexity, time, and risk to delivery.

382. Similar to the position regarding leakage, alternative sources and groundwater and as set out in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR, the NWRP including the Eastern and Midlands Plan confirmed the need for a New Shannon Source with Transfers and therefore, the assessment of reasonable alternatives in respect of the Proposed Project, did not re-consider strategic alternatives that had been considered and discounted by the NWRP and was carried out within the defined Proposed Project objectives. Therefore, the reasonable alternatives in respect of the Proposed Project did not include desalination.

5.2.5 Rainwater Harvesting and Greywater Reuse

383. The following submissions queried rainwater harvesting and greywater reuse as an opportunity to increase water supply as an alternative to sourcing water from the River Shannon:

Unique ID	Name of Individual or Organisation
WSP_SUB_07	Bridget Ginnity
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_51	John Baker
WSP_SUB_59	Melina Sharp and Michael Eversen
WSP_SUB_60	Michael Barker and Company
WSP_SUB_65	Samuel Norris
WSP_SUB_77	Shane Matthews
WSP_SUB_110	Clare County Council
WSP_SUB_114	Tipperary County Council

5.2.5.1 Applicant's Response

384. Rainwater harvesting is considered a private-side measure. It can contribute to a reduction in overall demand or help alleviate peak demand during dry conditions. However, the storage volumes required to meaningfully address demand peaks, particularly during drought conditions can be substantial compared to the volumes which can be collected through rainwater harvesting solutions.

385. In addition, the seasonality of rainfall in Ireland means that significant storage capacity would be required for rainwater harvesting systems to reliably meet demand during prolonged dry periods. The space needed to accommodate this level of storage would generally not be available within a typical domestic property.

386. Consequently, whilst the Applicant supports measures to improve the uptake and effectiveness of rainwater harvesting and reiterates that rainwater harvesting can make an important contribution to extend the lifespan of existing water supply systems it maintains that the need for water (as defined in the SID Engineering Report) cannot be met by rainwater harvesting alone, as the objective of the WSP is not only to meet projected water demand, but also to diversify climate change risk, existing source risks and bring resilience into existing supplies.

387. Further, whilst the Applicant actively supports initiatives that incentivise customer side greywater use, non-potable water supplies, such as greywater, must be kept completely separate from treated drinking water within both public distribution networks and domestic plumbing systems. As a result, greywater cannot be introduced into the public water supply due to the risk of contamination, and a dedicated parallel pipeline network would be required to distribute any non-potable water sources.

388. Similar to the position regarding leakage, groundwater and desalination and as set out in EIAR, Chapter 3 – Consideration of Reasonable Alternatives, the NWRP including the Eastern and Midlands Plan confirmed the need for a New Shannon Source with Transfers and therefore, the assessment of reasonable alternatives in respect of the Proposed Project, did not re-consider strategic alternatives that had been considered and discounted by the NWRP and was carried out within the defined Proposed Project objectives. Therefore, the reasonable alternatives in respect of the Proposed Project did not include rainwater harvesting or greywater supplies.

5.2.6 Demand Management

389. The following submissions suggested the implementation of robust demand management strategies such as:

- The promotion of water-use efficiency initiatives;
- The incentivisation of conservation behaviours among water users;
- The application of tariff structures to encourage reduced consumption;
- The increased adoption of water recycling;
- Rainwater harvesting; and
- Leakage reduction programmes and the replacement of ageing pipe infrastructure.

390. Submissions requested all feasible demand side measures be maximised before resorting to new abstraction infrastructure could be an alternative to abstracting water from the River Shannon:

Unique ID	Name of Individual or Organisation
WSP_SUB_02	Fight the Shannon Pipeline Petition
WSP_SUB_07	Bridget Ginnity
WSP_SUB_16	Joanne Skehan
WSP_SUB_26	River Shannon Environmental Protection Alliance Company
WSP_SUB_29	Suzanne Noble
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_40	Diarmuid O’Crowley
WSP_SUB_44	Eric Conroy
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_48	Garret Reil and Cliona Geary
WSP_SUB_50	James Crowley
WSP_SUB_51	John Baker
WSP_SUB_59	Melina Sharp and Michael Eversen
WSP_SUB_60	Michael Barker and Company
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_63	Port Omna Beo
WSP_SUB_65	Samuel Norris
WSP_SUB_77	Shane Matthews
WSP_SUB_80	An Taisce

Unique ID	Name of Individual or Organisation
WSP_SUB_110	Clare County Council
WSP_SUB_114	Tipperary County Council

5.2.6.1 Applicant's Response

391. The Applicant fully agrees that every litre of water saved helps reduce the pressure on our environment, our infrastructure, and our energy use.
392. Similar to submissions related to leakage, the Applicant would highlight that demand management is part of the wider strategy for future water supply in the Eastern and Midlands Region in addition to and in parallel with the Proposed Project. Demand management measures are included and taken account of within the Supply Demand Balance which established the need for a New Shannon Source with Transfers. This includes leakage reduction and rainwater harvesting (for appropriate purposes) in conjunction with other measures. Matters related to rainwater harvesting and leakage reduction as stand alone options have been addressed in Sections 4.2.1 and 4.2.5.
393. Therefore, the Applicant can confirm that the Proposed Project is required in addition to demand management measures (including but not limited to leakage reduction).
394. As set out in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR, the NWRP including the Eastern and Midlands Plan confirmed the need for a New Shannon Source with Transfers and therefore, the assessment of reasonable alternatives in respect of the Proposed Project, did not re-consider strategic alternatives that had been considered and discounted by the NWRP and was carried out within the defined Proposed Project. Therefore, the reasonable alternatives in respect of the Proposed Project did not include demand management.

5.2.7 Alternative Route(s)

395. The following submissions suggested using existing government owned, brownfield routes such as the M6 or M4, the Grand Canal or Royal Canal, or existing railway line corridors to transfer water from the River Shannon to Dublin. The two submissions raised slightly different points, but the overarching comment was consistent, and the Applicant's response is the same regarding the availability of alternative routes:

Unique ID	Name of Individual or Organisation
WSP_SUB_25	Richard Cahill
WSP_SUB_42	Eileen McNamara
WSP_SUB_114	Tipperary County Council

5.2.7.1 Applicant's Response

396. The Applicant chose a route for the pipeline that avoids environmentally sensitive areas, as far as reasonably practicable, and selected Infrastructure Site locations that, as far as reasonably practicable, reduce environmental impacts, while considering technical and cost factors. Another factor in route selection was to locate the pipeline, as far as reasonably practicable, away from populated areas to minimise the impact on communities.
397. The suggested alternative route of the infrastructure such as canals, railways and motorways which are located in heavily populated areas, is considered unsuitable for the proposed pipeline for this reason.

Other factors, such as the potential impact of the construction works on the existing infrastructure would also pose difficulties.

398. A robust route selection process was followed for selecting the route of the pipeline for the Proposed Project, as set out in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR. This included a five stage process as described in Section 3.73 of Chapter 3 which summarised the process as follows:

- Step 1, OWP (June 2015), (Irish Water 2015b) was a desktop-based assessment and involved a high-level screening and mapping exercise of initial constraints which were categorised as having a high impact. The 'White Space' represented those areas which avoided these high impact constraints
- Step 1 also included the evaluation of the Strategic Environmental Assessment (SEA) water supply options, considered alternatives and provided recommendations
- Step 2, POAR (November 2015), (Irish Water 2015c) was a desktop-based assessment to identify 'Preliminary Route Corridors' (approximately 2km wide) and a 'Least Constrained Route Corridor' from those identified. The Preliminary Route Corridors were determined from within the 'White Space' identified in Step 1.
- Step 3, FOAR (November 2016), (Irish Water 2016) was primarily a desktop assessment which followed the POAR non-statutory consultation. In conjunction with feedback from the POAR non-statutory consultation and supported with limited/focused windscreen surveys (i.e. from the public road), the 'Least Constrained Route Corridor' (approximately 2km wide) was confirmed from the 'Preliminary Route Corridors' identified in Step 2
- Step 4, FOAR (November 2016), (Irish Water 2016) involved further desktop assessment supported by localised windscreen surveys, and site visits, to identify a 'Preliminary Pipeline Corridor' (200m wide) from within the 'Least Constrained Route Corridor' confirmed in Step 3. Subsequently the 'Preferred 200m Pipeline Corridor,' was identified
- Step 5, FOAR (November 2016), (Irish Water 2016) was a further refinement of Step 4 and involved further constraint mapping and field surveys to determine an 'Indicative 50m Pipeline Corridor'.

399. This description in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR was supported by Appendix A3.1 (Pipeline Routing Report) which set out the process in further detail and mapping of the pipeline route.

5.2.8 Alternative Abstraction Location / Shortest Route

400. The following submissions suggested consideration of an alternative abstraction location in Lough Derg that would be more sustainable with less environmental impact. In particular, these submissions suggested extracting water from the North East end of Lough Derg would be a more sustainable solution as it would be shorter and reduce cost, disturbance and energy use:

Unique ID	Name of Individual or Organisation
WSP_SUB_19	John Fingleton
WSP_SUB_22	Michael Reidy
WSP_SUB_25	Richard Cahill
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris

5.2.8.1 Applicant's Response

401. An abstraction from Lough Derg was considered in the Regional Water Resources Plan - Eastern Midlands Plan. However, it was discounted as the option was determined to have a high likelihood of significant impact on the aquatic ecology of the Lough. The Regional Water Resources Plan also considered abstraction from Lough Ree, but as set out in Section 5.2.2 of this report, that option was also discounted.
402. As described in Chapter 3 (Consideration of Reasonable Alternatives of the EIAR) there was a two stage process to identify the preferred abstraction location. At the Preliminary Options Appraisal Report stage five broad locations along Lough Derg and Parteen Basin were considered, and these were identified in Image 3.2 in Chapter 3 (Consideration of Reasonable Alternatives) of the EIAR. The Parteen Basin was selected as the least constrained location and then, as published in the Final Options Appraisal Report, three abstraction locations were considered on Parteen Basin as shown in Image 3.3 in Chapter 3 (Consideration of Reasonable Alternatives). Sub-options were then identified within those options.
403. RWA Site 3E on the eastern shore of the Parteen Basin was identified as the preferred option among the reasonable alternatives considered for the location of the RWI&PS. This was because it would give rise to fewer adverse environmental effects and its design, construction and operation would pose fewer technical challenges.

5.2.9 Alternative Assessment

404. The following submissions raised concerns about the how the assessment of alternatives to the Proposed Project were considered in the EIAR. Submissions observed that planning and environmental law require a transparent assessment of all reasonable alternatives and raised concerns that the analysis is overly limited and fails to show that the proposed scheme is the most environmentally sustainable or least damaging option.

Unique ID	Name of Individual or Organisation
WSP_SUB_07	Bridget Ginnity
WSP_SUB_16	Joanne Skehan
WSP_SUB_17	Joe Mayo
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_48	Garret Reil and Cliona Geary
WSP_SUB_70	Tom and Mary Scully
WSP_SUB_72	Carol Killeen
WSP_SUB_77	Shane Matthews
WSP_SUB_82	Councillor Rita McNerney
WSP_SUB_114	Tipperary County Council

5.2.9.1 Applicant's Response

405. The NWRP including the Eastern and Midlands Plan set out the need for a New Shannon Source with Transfers and Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR set out how the recommendations of the Plans were accounted for within the objectives of the proposed Project.

406. The purpose of the consideration of reasonable alternatives at EIA is not to re-consider strategic decisions already made and subject to the SEA as the Regional Water Resources Plan including the Eastern and Midlands Plan were.
407. Therefore, as transparently stated in the Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR the assessment of reasonable alternatives in respect of the Proposed Project did not re-consider strategic alternatives that had been considered and discounted by the NWRP and was carried out within the defined Proposed Project objectives. The alternatives assessed within the EIAR were the design options that implement the Proposed Project, for example alternatives in terms of project design, technology, location, size and scale. These were detailed in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR.
408. The selection site process (for all elements including, but not limited to, infrastructure sites, pipeline routing and construction compounds) and decision making regarding alternatives, that is described in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR, demonstrates how environmental factors have been taken account of alongside other relevant factors such as, but not limited to, design or operational requirements and cost in order to determine an appropriate location of the proposed infrastructure.

5.3 Response to Specific Issues Raised in General Observer Submissions

5.3.1 Alternative Route Option on Specific Landowner Lands

409. The following general observer submissions raised a specific issue relating to the routing of the Proposed Project on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_90	James Waldron (Corr Property Consultants on behalf of)
WSP_SUB_91	James Waldron (McEntegert Consultancy on behalf of)
WSP_SUB_92	Judith Kohler
WSP_SUB_102	Fonsell Ltd.

410. The general observer submission from Gordon and Leslie Beattie stated that the pipeline should have been located in close proximity to their southern land boundary so that it would run alongside the boundary. The submission also stated that there is an air valve located out from the western boundary that should have been located in tight to the western boundary.
411. The general observer submissions from James Waldron stated that the route selection for the Proposed Project is flawed in that the pipeline route should have been set back a significant distance from his stud farm, which would have eliminated issues and risks. The submissions also state that the decision to utilise overhead lines at this location rather than alternative routing with underground cables, has not been adequately justified. The submissions continue that the current proposal reflects a generic engineering solution, rather than a site-specific design, informed by a comprehensive assessment of this particular stud farm's land.

Response to Submissions Report

412. The general observer submission from Fonsell Ltd. stated that there is no reason that the route of the proposed pipeline should not be moved further south and run parallel to the boundary adjacent to the canal on their lands.

5.3.1.1 Applicant's Response

413. As set out in Section 5.2.7.1 the route was developed through a structured five-step route selection process, commencing with the identification of unconstrained “white space” at a regional scale and progressing through increasingly refined corridor options, culminating in the identification of an indicative 50-metre-wide pipeline corridor capable of accommodating construction and long-term operation. 20 metre wide permanent wayleave and associated 30 metre wide temporary working area increased at specific locations. The EIAR describes that the Construction Working Width is generally 50 metres, with localised widening where required (e.g., at crossings, access/egress points, construction compounds and pipe storage depots), reflecting that the working area is not arbitrary but is a route-wide requirement that varies only where necessary for constructability and safety. In addition, the EIAR construction chapter provides the project’s construction methodology context (including how construction compounds/working areas are used as part of delivery), while the engineering report includes a dedicated “Treated Water Pipeline” section and “Route-wide construction matters” section which together explain the corridor/working requirements and the construction basis for the project.

414. The proposed route was assessed against a comprehensive range of environmental, engineering and physical constraints, including, but not limited to, designated ecological sites, peatlands, watercourses, topography, ground conditions and existing infrastructure. The preferred route was further refined following extensive non-statutory consultation (on previous iterations of the project) and, critically, prolonged direct engagement with affected landowners following publication of the Final Options Appraisal Report (FOAR). This process has continued between 2018 and 2025 with on-going engagement with landowners and re-routes proposed by landowners throughout this period.

415. These engagements resulted in a number of localised route amendments and refinements designed specifically to reduce impacts on landholdings where this could be achieved without introducing greater impacts elsewhere.

416. The table below summarises the position with regards to the specific landowners.

Name of Individual or Organisation	Matter Raised	Applicant's response
Danny Janssens	A route that would have a lower negative impact on property owners and the environment should have been chosen	Re-route Request Mapbook contains Figure 165 and Figure 166 illustrating two separate re-route requests received from this landowner. One of these re-routes was facilitated moving the pipeline towards the edge of the field. The other was only partially facilitated. The second re-route request could not be fully facilitated due to the need to maintain an acceptable pipeline alignment
Gordon and Leslie Beattie	The pipe should have been located in close proximity to the southern land boundary so that it would run alongside the boundary. In addition, there is an air valve located out from the western boundary that should have been located in tight to the western boundary.	The Appendix A3.1 - Pipeline Routing Report Annex E - Re-route Request Mapbook - contains Figure 176 illustrating a re-route request received from this landowner which was facilitated.
James Waldron (Corr Property Consultants on behalf of)	The route should have been set back a significant distance from this stud farm	The Pipeline Routing Report confirms that constraints were identified and ranked (high/medium/low) by a multi-disciplinary specialist team (including agronomy) and that the corridor was refined through successive steps of assessment and consultation, with further post-Step 5 refinement undertaken through direct engagement with landowners and ongoing design development. In that context, the appropriate test is not whether a greater “set-back” could be drawn in isolation around one receptor, but whether the adopted alignment

Name of Individual or Organisation	Matter Raised	Applicant's response
		represents the least constrained solution within the overall routing methodology and engineering requirements and whether any residual, holding-specific impacts are appropriately assessed and mitigated within the project's management framework The proposed overhead line alignment has been refined to minimise impacts on the effected lands. Pole locations have been adjusted to the edge of fields wherever practicable. The modification ensures that the alignment is both practical to construct and considerate of land use, while still meeting the project's technical requirements.
Judith Kohler	A route that would have a lower negative impact on property owners and the environment should have been chosen	Re-route Request Mapbook contains Figure 165 and Figure 166 illustrating two separate re-route requests received from this landowner. One of these re-routes was facilitated moving the pipeline towards the edge of the field. The other was only partially facilitated. The second re-route request could not be fully facilitated due to the need to maintain an acceptable pipeline alignment
Fonsell Ltd.	There is no reason that the route of the pipeline should not be moved further south and run parallel to the boundary adjacent to the canal	The currently proposed pipeline route represents the optimum alignment when assessed against both upstream tie-in constraints and constructability requirements at the canal crossing. From an alignment perspective, the route maintains continuity with the established upstream corridor, minimising unnecessary deviations. This reduces overall pipeline length, limits the need for additional bends. Critically, the proposed route enables the canal crossing to be undertaken using trenchless excavation techniques at an orientation approximately 90 degrees to the existing canal. This perpendicular approach is essential to minimise the crossing length beneath the canal, thereby reducing construction risk, duration, and potential environmental impact. It also aligns with best practice for trenchless installations, improving accuracy and increasing the likelihood of a successful installation.

5.3.2 Alternative Access on Specific Landowner Lands

417. Two general observer submissions raised a specific issue relating to alternative access to their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_97	Seamus Cullen
WSP_SUB_104	Peamount Healthcare

418. The general observer submission from Seamus Cullen stated that it is a fundamental principle of proper planning and sustainable development that, where a proposal gives rise to safety concerns, consideration should be given to whether a more suitable and less impactful alternative location exists. The submission continued that, in this instance, there are clearly available and viable alternative locations for the proposed lay-by and wayleave access that would avoid the significant road safety issues.

419. The general observer submission from Peamount Healthcare states that the current proposed access is very close to sensitive receptors in Peamount Hospital and that a ready alternative to this route exists via the Grange Castle West Access Road which is constructed as dual and single carriageway including a roundabout with a southern spur which terminates less than 300 metres from the site of the proposed new TPR. The submission continued that Peamount Healthcare consider this alternative should be evaluated by the Applicant, as it will avoid the significant construction impact on Peamount Hospital.

5.3.2.1 Applicant's Response

420. With regards to the submission from Seamus Cullen no alternative locations to this lay-by were identified. The lay-by needs to be as close as reasonably practicable to the proposed line valve location. The safety matters raised by this submission are considered further in Chapter 4 – Proposed Project Description and Chapter 5 – Construction and Commissioning of the EIAR.
421. The proposal put forward by Peamount Hospital had not been previously raised and is not addressed in EIAR, Chapter 3 consideration of Reasonable Alternatives in Section 3.7.2.2 relating to access to the TPR.
422. In the design of permanent accesses, the Applicant has sought, where reasonable and practicable, to reduce the impact on existing and potential uses of the land. In respect of the TPR, the access road has made use of an existing access from the R120 and an existing Uisce Éireann wayleave, minimising the impact on the lands. Furthermore, the access, as proposed, is not dependant on infrastructure delivered by others. This certainty is essential for the purpose of the planning submission.
423. The Applicant is cognisant of the road layout proposal set out in the Grange Castle West Masterplan and can see the potential benefit to Peamount Hospital and to the Applicant. We also note that the road layout identifies a potential access to the TPR site from the Phase 4 road. However, the masterplan states that there is no current specific timeline for the delivery of the north south road within Grange Castle West (identified as Phases 3 and 4) and that it is dependent on future demand.
424. The Applicant is willing to consider and explore an alternative access arrangement for the TPR site in line with the delivery of the masterplan layout, in consultation with the local authority. However, in the absence of a confirmed and committed road layout, the current proposal remains the preferred access arrangement to the site.

5.3.3 Alternative Design on Specific Landowner Lands

425. Two general observer submission raised a specific issue relating construction compounds on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_84	Eamonn Dooley
WSP_SUB_86	Fintan Dunne

426. The general observer submission from Fintan Dunne and Eammon Dooley suggested that temporary construction compounds should be acquired by the contractor after award or otherwise designed to minimise impacts on the retained farm.

5.3.3.1 Applicant's Response

427. The Applicant does not agree that it would be viable to wait until a contractor is appointed to identify the location of the proposed Construction Compounds. In particular:
- The Applicant needs certainty for the CPO application and the assessment of environmental effects of the Proposed Project as reported in the EIAR
 - Planning consent is required in order to provide sufficient certainty to allow procurement of those contractors to proceed
428. Therefore, construction compounds have to be identified and included in both the CPO application and the SID Planning Application.

429. Chapter 3 (Consideration of Reasonable Alternatives) of the EIAR sets out the methodology used to determine the location of the construction compounds including Construction Compound 5 which is the one relevant to this submission.

5.3.4 Electricity Supply Design Alternative on Specific Landowner Lands

430. The general observer submission from James Waldron raised specific concerns about the design choice for the electricity connection required as part of the Proposed Project on his lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_91	James Waldron (McEnteggert Consultancy on behalf of)

431. This general observer submission stated that the decision to utilise overhead lines at the location on his lands location, rather than alternative routing with underground cables, has not been adequately justified.

5.3.4.1 Applicant's Response

432. The Applicant has discussed the principle of the connections with ESB Networks who are the utility operator and who would deliver the works. Undergrounding of cables would not be considered a preferred option compared with overhead line connections.

5.3.5 Alternative Location for Water Treatment Plant

433. The following general observer submissions raised a specific issue relating to the location of the Water Treatment Plant:

Unique ID	Name of Individual or Organisation
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Micheal Mckeogh

434. The general observer submission from Micheal Mckeogh and Melissa Anne Kenny raised concerns that alternative locations that are more suitable for the Water Treatment Plant have not been considered and rejects the proposed development as it is not in the public interest, does not accord with the principles of sustainable local development, and fails to respect the character and rights of the rural community. They further noted having regard to its scale, the proposed development would involve large acquisitions of their farmland and would impose a disproportionate impact on their farms and livelihoods which cannot be adequately compensated for in monetary terms.

5.3.5.1 Applicant's Response

435. The process for the evaluation of alternative sites for the Water Treatment Plant (WTP) is described in in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR. Three general areas were considered as set out in Image 3.8 of Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR and then four sites within the preferred area were evaluated as shown in Image 3.9 in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR. The preferred site was selected because it was the site that was furthestmost from neighbouring residential receptors, and that could be accessed easily by construction and operational traffic using the most direct access from the R445.

5.3.6 Alternative Design Pipeline Design Measures

436. The following general observer submission suggested consideration should be given to reducing the line size to 1500mm, using full bore ball valves instead of butterfly valves, and reducing the number of line valves, air valves and washout valves.

Unique ID	Name of Individual or Organisation
WSP_SUB_19	John Fingleton

437. The general observer submission comment that the pipeline diameter has been reduced to 1600mm on both sections, which appears positive, but no lifetime analysis of capital and operating costs has been provided; further reduction to 1500mm should be assessed. The proposed number of valves, particularly isolating and air valves, seems excessive and warrants review, as fittings are a common source of leaks. While butterfly valves offer cost savings, their pressure losses and risk of surge are concerns; full-bore ball valves could reduce losses, minimise surge risk, allow pipeline pigging, improve inspection, and potentially reduce the overall number of valves required.

5.3.6.1 Applicant's Response

438. Chapter 3 of the EIAR, section 3.8 outlines the pipeline sizing and design alternatives considered as part of the development of the Proposed Project.

439. In relation to the location to design and location of the associated valving and fittings, these underwent a rigorous design processes to ensure the most appropriate types were chosen for the preliminary design. The use of alternative valves is addressed in Chapter 6 (Proposed Project Description) of this report.

5.4 Response to Specific Issues Raised by Prescribed Bodies

5.4.1 An Fórum Uisce Internal Review on the Eastern Midlands Water Supply Project 2019

440. The prescribed body submission from Tipperary County Council cited an internal report commissioned by AFU in 2019:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

441. Tipperary County Council's submission included an AFU internal review report that commissioned external expertise to examine the key issues raised in the public and technical debate surrounding the Eastern and Midlands Water Supply Project. This was undertaken to enable the AFU to contribute in an informed and meaningful way to the Commission for Regulation of Utilities (CRU) review conducted in 2019. The CRU had been appointed by the then Minister for Housing, Planning and Local Government.

442. Tipperary County Council's submission included an AFU internal review report that commissioned external expertise to examine the key issues raised in the public and technical debate surrounding the Eastern and Midlands Water Supply Project. This was undertaken to enable the AFU to contribute in an informed and meaningful way to the Commission for Regulation of Utilities (CRU) review conducted in 2019. The CRU had been appointed by the then Minister for Housing, Planning and Local Government, Mr. Eoghan Murphy, T.D., to review Irish Water's proposed approach to the Water Supply Project for the Eastern and Midlands Region (WSP), in accordance with its published terms of reference, including its statutory consultative role. The purpose of the AFU report was to provide independent insight into the assessment of need for the project, through a review of existing data, and to benchmark the potential for alternative water supply options, including groundwater development, desalination, water reuse, and

rainwater harvesting. The findings of this work informed and supported the AFU's formal submission to the CRU in June 2019.

5.4.1.1 Applicant's Response

443. The Applicant notes that the AFU report was for the purposes of informing and supporting their submission to the initial CRU Review in 2019, which became the independent review of the project that was carried out under the Public Spending Code External Assurance Process in line with the DHLGH sectoral guidelines. This review included an assessment of the alternatives considered in the RWRP and submissions from various agencies and it concluded that the proposed project was the clear best option for meeting the deficit in the Eastern and Midlands Region.

5.4.2 Alternative Regional Development

444. The prescribed body submission from Limerick County Council observed alternative regional development options should be considered:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council

445. Councillor E. Ryan commented that while cities can reach natural limits, Dublin's issue appears to be inadequate reservoirs rather than water availability, suggesting future development may need to be redirected to other regions if constraints persist.

5.4.2.1 Applicant's Response

446. The request to consider incorporating more reservoir storage within the design is considered in Chapter 6 (Proposed Project Description) of this report.

447. Matters related to regional development are as discussed in Chapter 3 (Planning) of this report.

448. Growth targets are set out through the National Planning Framework, Regional Spatial and Economic Strategies, and Local Authority Development Plans. Water services are designed to facilitate these targets and do not dictate where population growth occurs.

449. The Applicant would highlight that outside the scope of the Proposed Project there are proposals within the Eastern and Midlands Plan in order to meet the demand for drinking water up to 2050 in all water resource zones including those within Limerick.

5.4.3 Alternative Access to the Construction Compound at Lisgarraff

450. The prescribed body submission from Tipperary County Council requested that an alternative access to the proposed construction compound at Lisgarraff be investigated:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

451. This prescribed body submission stated that the proposed site entrance to the construction compound off the N52 at Lisgarraff is not in accordance with the Tipperary County Development Plan 2022 or Roads Policy. The submission continued that the potential for an alternative access to the compound from the L5079 should be examined.

5.4.3.1 Applicant's Response

452. The Applicant has considered the request from the Council and the junction between the L5079 and the N52 is at an appropriate standard. However, the road from that junction very quickly becomes narrower and the lane is unsuitable for the type and volumes of construction traffic that would need to use the road. Therefore, the Applicant does not consider that the L5079 is a viable option for an alternative access.
453. Planning policy compliance is considered in Chapter 5 (Planning) of this report.

6. Proposed Project Description

6.1 Overview

454. Thirty-seven of the 114 submissions raised issues that are best responded to under the description of the Proposed Project.

455. This Report and its supporting appendix comprise the response of the Applicant to the specific issues raised regarding:

- The design of the Proposed Project;
- The design information provided within the SID Planning Application; and
- The operation of the Proposed Project (excluding comments on the environmental effects of the operation of the Proposed Project which, where relevant, are considered in Chapters 2-5 and 8-27).

456. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:

- Chapter 5 (Consideration of Reasonable Alternatives);
- Chapter 7 (Construction and Commissioning);
- Chapter 9 (Traffic and Transport)
- Chapter 11 (Water (Hydrological Modelling and Water Levels); and
- Chapter 21 (Material Assets).

457. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.

458. This Chapter is structured around the following sections:

- General matters raised regarding the design of the Proposed Project;
- Specific matters raised on the design of the Proposed Project; and
- Specific matters raised by Prescribed Bodies on the design of the Proposed Project.

459. Within these sections there is some overlap and inter-relationship between the matters raised and where relevant cross references have been included to link any General and Specific Matter responses.

6.2 Response to General Issues Raised

6.2.1 Adequacy of General Design Information

460. The following submissions raised a general concern over the adequacy of the design information included in the planning application and the ability to make an informed decision on the Proposed Project based on that information:

Unique ID	Name of Individual or Organisation
WSP_SUB_22	Michael Reidy
WSP_SUB_43	Environmental Trust Ireland
WSP_SUB_100	A.M.R Limited
WSP_SUB_102	Fonsell Ltd.

6.2.1.1 Applicant's Response

461. The Applicant does not agree with these observations. The SID Planning Application for the Proposed Project includes documentation that fully describes the works proposed and provides the comprehensive planning and environmental assessments necessary to determine that it meets proper planning and sustainable development requirements.

462. This included, but is not limited to:

- For the entirety of the Proposed Project, the horizontal and vertical alignment of the pipeline is described in the planning drawings together with all ancillary works such as valve washouts and layby locations and contained within the working area as represented by the Planning Application boundary.
- A description of the permanent infrastructure that is proposed is contained in the EIAR Chapter 4 (Proposed Project Description) and the SID Engineering Report
- For each of the permanent infrastructure sites, plans, elevations and sections are provided for each of the principal buildings and structures, together with further details on elements such as their drainage, servicing and landscaping
- For Construction Compounds and Pipe Storage Depots indicative layouts used for assessment purposes and contained within figures in the EIAR
- A description of the construction activities is contained in the EIAR Chapter 5 (Construction and Commissioning) and the SID Engineering Report.
- Topic specific assessments are reported in Chapters 6 – 21 of the EIAR including for example, Chapter 7 (Traffic and Transport) and Chapter 21 (Cumulative Effects and environmental Interactions).
- A Natura Impact Statement, Appropriate Assessment Screening and Water Status Impact Assessment Report.

463. The information provided complies with the relevant planning legislation and is aligned with the standards and precedents for Strategic Infrastructure Development planning applications.

464. There are specific observations raised by Michael Reidy, Fonsell Ltd, A.M.R Limited and other landowners which relate to this general matter, and these are considered further in Section 6.3.1 and 6.3.2.

6.2.2 Capacity of the Proposed Pipeline

465. The following submissions raised concerns about the planning application not outlining the maximum capacity of the proposed pipeline:

Unique ID	Name of Individual or Organisation
WSP_SUB_11	Councillor Seán Hartigan
WSP_SUB_112	Limerick County Council

6.2.2.1 Applicant's Response

466. The Applicant does not agree with the observations made in these submissions. Councillor Hartigan has correctly identified that the abstraction would be limited by the Abstraction Licence and the capacity of the Water Treatment Plant, and this is correct. The maximum abstraction would be controlled by the Abstraction Licence and additionally by the Planning Permission, (which is based on an EIAR which assesses a maximum abstraction of 300Mld), if granted.

467. The proposed infrastructure has been designed to deliver 300Mld of drinking water with an appropriate level of resilience to allow for maintenance and repair activities.

468. The observations received suggest a level of concern that the peak abstraction of 300Mld could increase in the future. The Applicant can confirm that there is no intention to abstract more than 300Mld of raw water from the Parteen Basin, and as identified by Limerick County Council, the peak abstraction could not be increased without applying for additional consents and completing any environmental assessments necessary for such consent.

469. There are specific observations raised in Section 6.3.8 and by Prescribed Bodies in Sections 6.4.1 and 6.4.2 which relate to this general matter.

6.2.3 Monitoring of Water Levels

470. The following submissions requested that water level monitoring at Parteen Basin / River Shannon during the Operational Phase will be transparent:

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_27	St. Flannans Fishing Club
WSP_SUB_35	Castleconnell River Association
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_69	The Lough Derg Anglers Association

6.2.3.1 Applicant's Response

471. This is addressed in Chapter 11 (Water (Hydrological Modelling and Water Levels)) in Section 11.2.11.1

6.2.4 Inclusion of a Storage Reservoir in the Design

472. The following submissions raised a specific issue relating to the need to include a storage reservoir in the design of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_06	Brian Leddin
WSP_SUB_10	Christopher Campion
WSP_SUB_35	Castleconnell River Association

6.2.4.1 Applicant's Response

473. The Applicant does not agree with the observations. One of the key design strengths of the Proposed Project is that it does not involve building a new reservoir or dam. This means the Proposed Project avoids the environmental impacts that would come with altering the natural landscape or water flow near the Parteen Basin.

474. Instead, the Proposed Project uses existing infrastructure that's already managed by the ESB for hydroelectric power. This allows the Applicant to provide a new supply of drinking water in a way that's both efficient and environmentally responsible.

475. We understand that the observations were made as a proposal that would avoid or reduce the effect of the Proposed Project on water levels within the Parteen Basin however as described in Chapter 11 (Water (Hydrological Modelling and Water Levels)) of this report extensive studies and modelling have shown that even during extreme droughts—like the one in 2018, the worst ever recorded in the Shannon region—it will still be possible to use water from Parteen Basin for drinking water purposes. ESB will continue to maintain water levels above the minimum required water level at Parteen Basin, whilst meeting the current minimum statutory compensation flow to the Old River Shannon, even in drought conditions. Further information is provided in Chapter 11 (Water (Hydrological Modelling and Water Levels)).

6.2.5 Adequacy of Designed Storage Capacity

476. The following general observer submissions raised concerns about the adequacy of the 75 ML storage capacity proposed at the end of the pipeline at the TPR:

Unique ID	Name of Individual or Organisation
WSP_SUB_11	Councillor Seán Hartigan
WSP_SUB_25	Richard Cahill

6.2.5.1 Applicant's Response

477. The Applicant does not agree that additional storage, in addition to the 75ML proposed at the TPR is necessary.

478. As the submissions set out it is correct that pumping at the abstraction point would be a continuous activity, 24 hours a day, as set out in Section 4.4.11 in Chapter 4 (Proposed Project Description) of the EIAR, albeit the rate of abstraction would vary according to daily demand. Therefore, the Applicant can confirm the whole of the Proposed Project is typically expected to operate on a continuous basis as water will need to be supplied continuously. As a result, the TPR is not designed to hold back water for later use in the way that a 'reservoir' may traditionally be understood. Rather, it should be considered more like a balancing reservoir to allow the Applicant to control the volume of water entering the existing Greater Dublin Area (GDA) distribution infrastructure. This caters for the typical variations between supply and demand throughout the day and is described in the Operational Strategy in Appendix A4.1 of Chapter 4 (Proposed Project Description) in the EIAR. Therefore, it is correct that the storage of 75ML would only store a proportion of the daily water that would be needed but that is by design and is fit for purpose for the proposed operational philosophy. The reservoir would not be expected to be, typically, completely empty or completely full and instead the stored water or alternatively, the storage capacity at the TPR would be used to manage the volume of water being supplied into Dublin.

479. The Proposed Project including the TPR needs to be viewed in the wider context of the supply of water in the Eastern and Midlands Region and would work in parallel with all the other existing strategic storage reservoirs. Therefore, the Applicant does have the capacity, elsewhere, to store water for drinking supply purpose but this is not provided by the TPR, and it is not designed to do so.

6.3 Response to Specific Issues Raised in General Observer Submissions

6.3.1 Adequacy of Design Details on Landowner Lands

480. Five general observer submissions raised a specific issue relating to inadequacy of design details for elements of the Proposed Project on their land:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_90	James Waldron (Corr Property Consultants on behalf of)
WSP_SUB_92	Judith Kohler
WSP_SUB_102	Fonsell Ltd.

481. The general observer submissions from Danny Janssens, Gordon and Leslie Beattie, and Judith Kohler stated that there is inadequate detail in the planning application in relation to the proposed boundary treatment on their land.

482. The general observer submission from James Waldron stated that inadequate details have been provided in relation to the design of the Proposed Project as it passes on the western and northern side of his property.

483. The general observer submission from Fonsell Ltd. stated that the planning application does not provide full detail of design on their land, particularly depth of pipes. The submission further stated that design drawings are missing.

484. There is a general observation which relates to this specific comment, and this is described in Section 6.2.1.

6.3.1.1 Applicant's Response

485. The Applicant does not agree with the submissions made. A full and complete SID Planning Application has been submitted, and the table below provides a response to each of the specific design detail matters raised:

Name of Individual or Organisation	Matter Raised	Response
Danny Janssens	Boundary treatment specifically regarding hedgerows affected by construction	The pipeline corridor will not be permanently fenced. All existing fencing affected by construction will be reinstated as agreed with the landowner in accordance with the provisions of the Landowner Handbook that has been provided to all affected landowners. Lengths of hedgerows removed during construction will be reinstated over the pipeline. The only restriction on planting over the pipeline will be that species growing to more than 4m in height cannot be planted within the Pipeline Corridor. This was set out Section 5.9.3 in Chapter 5 – Construction and Commissioning in the EIAR. The Landscape Masterplan in Figures 4.106 to 4.184 shows the reinstatement proposals. Figure 4.183 shows the relevant section of the pipeline to this landowner.
Gordon and Leslie Beattie	Boundary treatment specifically regarding hedgerows affected by construction	The pipeline corridor will not be permanently fenced. All existing fencing affected by construction will be reinstated as agreed with the landowner in accordance with the provisions of the Landowner Handbook that has been provided to all affected landowners. Lengths of hedgerows removed during construction will be reinstated over the pipeline. The only restriction on planting over the pipeline will be that species growing to more than 4m in height cannot be planted within the Pipeline Corridor. This was set out Section 5.9.3 in Chapter 5 (Construction and Commissioning) in the EIAR. The Landscape Masterplan in Figures 4.106 to 4.184 shows the reinstatement proposals. Figure 4.184 shows the relevant section of the pipeline to this landowner.

Name of Individual or Organisation	Matter Raised	Response
James Waldron (Corr Property Consultants on behalf of)	Inadequate design information provided regarding the alignment of the property	The alignment of the pipeline and the depth of the proposed pipeline are contained within the Planning Application specifically the Planning Application Drawings and full information has been provided in a compliant application as set out in Section 6.2.1.1 of this report.
Judith Kohler	Boundary treatment specifically regarding hedgerows affected by construction	The pipeline corridor will not be permanently fenced. All existing fencing affected by construction will be reinstated as agreed with the landowner in accordance with the provisions of the Landowner Handbook that has been provided to all affected landowners. Lengths of hedgerows removed during construction will be reinstated over the pipeline. The only restriction on planting over the pipeline will be that species growing to more than 4m in height cannot be planted within the Pipeline Corridor. This was set out Section 5.9.3 in Chapter 5 (Construction and Commissioning) in the EIAR. The Landscape Masterplan in Figures 4.106 to 4.184 shows the reinstatement proposals. Figure 4.183 shows the relevant section of the pipeline to this landowner.
Fonsell Ltd.	Scheme is not fully designed. Pipeline depth not identified and full design information not provided.	The alignment of the pipeline and the depth of the proposed pipeline are contained within the Planning Application specifically the Planning Application Drawings and full information has been provided in a compliant application as set out in Section 6.2.1.1 of this report.

6.3.2 Adequacy of Design Details on Take Offs

486. The following general observer submissions raised a specific issue relating to availability of information relating to potential future connections points:

Unique ID	Name of Individual or Organisation
WSP_SUB_22	Michael Reidy
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris

487. The general observer submission from Michael Reidy stated that the proposed pipeline has several take-off points already decided, and these will determine the line of the spur pipelines in turn. The submissions continued that there will be many if not as much again number of landowners affected by these spur pipelines, and these landowners are entitled, at this stage, to know how they are to be affected and not find out piecemeal as time goes on.

488. The submissions from River Shannon Environmental Protection Alliance Company Ltd and Councillor Séamie Morris raised the same point arguing that the alignment of the connections must be known and should have been included in the information provided.

489. There is a general observation which relates to this specific comment, and this is described in Section 6.2.1.

6.3.2.1 Applicant's Response

490. The Applicant does not agree with these submissions as the Applicant is not seeking planning permission for the potential future connections and is not making a commitment to the future projects that would be needed to deliver them. Therefore, no further information is included in the SID Planning Application.

491. The Applicant has been clear on the status of the potential future connections as set out in the EIAR in Chapter 4 (Proposed Project Description):

“Provision has been made for take-off points at strategic locations between the WTP and TPR. These would facilitate future potential connections to supply communities in the Midlands within the Water Supply Area without disruption to the operation of the pipeline. The location of these future potential connections align with the Eastern and Midlands Plan (Irish Water 2022). The connecting pipelines and associated infrastructure would be delivered by Uisce Éireann through separate projects, yet to be designed, and would be subject to their own separate consenting processes.”

492. The ‘Tee’ pieces needed to allow for potential future connections to be made into the proposed pipeline were included within the SID planning application so that the future connections could be built without have to disrupt the operation of the Proposed Project. This is described in the EIAR, Chapter 4 (Proposed Project Description) (Section 4.13.10) and shown on the Standard Detail Planning Drawing - Future Connection Point Valve Detail DWG No. 32105801-850-07311.

6.3.3 Design Change Requests on Specific Landowner Lands

493. Four general observer submissions raised a specific issue relating to design changes for elements of the Proposed Project on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_89	James Cullen Senior
WSP_SUB_97	Seamus Cullen
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_104	Peamount Healthcare

494. The general observer submission from John Quinn and Sandra Frayne states that the Applicant has failed to confirm a safer relocation for the wash out valve from its current designated location, as requested, due to potential impacts on horses riding over this area.

495. The general observer submission from Peamount Healthcare has requested design changes to the proposed access to the TPR on their lands.

6.3.3.1 Applicant’s Response

496. The Applicant acknowledges the matters raised and considers that engagement will continue into detailed regarding the matters raised (excluding the alternative access proposed by Peamount Healthcare). The table below provides a response to each of the matters raised.

Name of Individual or Organisation	Matter Raised	Response
James Cullen Senior Seamus Cullen	Alternative locations for the layby are available including existing the existing access to the respondents premises	The layby needs to be adjacent to the Line valve located adjacent to the road no other alternative sites have been identified.

Name of Individual or Organisation	Matter Raised	Response
John Quinn and Sandra Frayne	Wash out valve location	There is on-going liaison with the landowner in this location, as the observation provided refers to. The construction flexibility provided within the Planning Application and defined in the SID Engineering Report and EIAR Chapter 4 (Proposed Project Description) would allow some refinement of the wash out valve location during detailed design. The Applicant will continue to work with the landowners to determine the final location of the washout. This flexibility has been considered within the assessment undertaken and reported in the EIAR.
Peamount Healthcare	Acquisition of land adjacent to the access to the TPR and alternative access to TPR	The acquisition of these lands will be addressed through the application for the CPO. The request for an alternative access route to be used to provide permanent access to the TPR is considered further in Chapter 5 (Consideration of Reasonable Alternatives) of this report.

6.3.4 Potential Safety Impact of Proposed Layby at Landowner Property Access

497. Two general observer submissions raised a specific issue relating to the potential safety implications of the proposed layby for the Proposed Project at the existing access to his property:

Unique ID	Name of Individual or Organisation
WSP_SUB_89	James Cullen Senior
WSP_SUB_97	Seamus Cullen

498. These general observer submissions raised concerns relating to safety implications resulting from the acquisition for the proposed layby on their land is directly beside the existing main access to this property. The submissions suggest that the

- Layby will be too close to an existing access and that the use of the layby will block sightlines for the existing access;
- Sightline of between 120m and 160m is required;
- Existing entrance is 10-20m from the layby;
- Existing road conditions including overtaking and a bend would affect safe use of proposed lay-by;
- Risk of informal / unauthorised use of the lay-by;
- Agricultural access is needed to both sides of the R407;
- There would be conflicting vehicle movements (during construction and operation) with existing accesses; and
- The layby is not safe for the Applicant's operatives to use.

6.3.4.1 Applicant's Response

499. The two submissions both relate the same property, and the Applicant has had further engagement with the landowner since the SID Planning Application was submitted and welcomes the dialogue. The Applicant does not agree that there is a significant safety issue associated with the layby but does recognise that further discussion is needed to help address the landowner's concerns.

500. Chapter 4 (Proposed Project description) identifies lay-bys as pipeline features and links permanent access to the provision of a Permanent Wayleave, including localised widening at some valve locations to provide access between lay-bys and line valves, reflecting that laybys form part of the engineered

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operational access strategy for safe inspection, maintenance and emergency response over the life of the pipeline. However, the Line Valve relevant to the submissions is one of the Valve Locations identified in the Chapter 4 (Proposed Project Description), of the EIAR as having permanent acquisition of land around the Line Valve to ensure operational access to the valve can be achieved.

501. With regard to the use of the lay-by by its own operatives, the Applicant can confirm that the lay-by has been designed to allow for vehicles to approach the layby from the left hand side carriageway only and to depart in the same direction. It is not intended that the lay-by is entered or exited crossing a lane of traffic. This reduces the sightline needed as on departure a sight line is required to the north only. There is a sufficient sightline for this.
502. A Road Safety Audit was completed as part of the design development and did not identify any concerns regarding the sightlines for the lay-by at this location.
503. Alternative locations for the Line Valve have not generally been considered as the location is determined by the gradient of the operational constraints imposed by the hydraulic requirements of the pipe.
504. The Applicant recognises that there is a concern that unauthorised third parties will use the lay-by to park. Insofar as the Applicant can, it has designed the lay-bys to discourage this. In particular, they will be surfaced with grasscrete (as shown in Image 4.20 in Chapter 4 (Proposed Project Description) in the EIAR). This will allow low level grass to grow through the surface. The intention is to reduce the appearance of the layby as a 'parking' area and to reduce its attractiveness as a stopping point for third parties. However, the Applicant Uisce Éireann cannot be held responsible for actions of third parties but will endeavour to work with landowners regarding any issues.
505. With regards to the interface between the use of the lay-by by the Applicant's operatives and the existing access to the landowners land, the Applicant Éireann can confirm that the layby is set from the edge of the existing carriageway and so will involve removal of any existing obstructions, within the extent of the layby. The new layby will overlap with the sight line that the landowner has identified however, given the infrequency with which the layby would be used and the likely duration that a vehicle would be stopped, the Applicant consider that a practical arrangements can be reached such as advanced notice of use of the lay-by to confirm any landowner vehicle movements that may be an issue at the time proposed.
506. The table below provides a response to each of the matters raised:

Matter Raised	Response
Layby will be too close to an existing access and that the use of the layby will block sightlines for the existing access.	The lay-by will overlap with the sightline for the existing access. However, it will be used very infrequently and will not present a continuous or on-going impact on sight lines for the existing access. The layby is located from the edge of the existing carriageway and therefore is set back as far as possible.
Sightline of between 120m and 160m is required	A sightline of sufficient length for the proposed layby is available. The lay-by is for single direction use only. It will be accessed and exited from the left hand carriage way only. The lay-by itself provides a sightline and space for exiting the layby into the left hand side of the road.
Existing entrance is 10-20m from the layby	This is correct the end of the layby is 20m from the existing access point.
Existing road conditions including overtaking and a bend would affect safe use of proposed lay-by	This would not affect single direction use of the lay-by.

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Matter Raised	Response
Risk of informal / unauthorised use of the lay-by	The Applicant recognises this is a potential issue. Safe access for operatives cannot be provided if the lay-by is secured. Therefore, the Applicant has designed the lay-bys to be as discrete as possible using grasscrete which will allow grass to grow through to reduce how obvious the lay-by is for third parties. The Applicant cannot control unlawful actions of any unrelated third parties /members of the public
Agricultural access is needed to both sides of the R407	There is not an existing access across the road that would be affected by the lay-by as far as the Applicant is aware. The existing crossing point is south of the layby location.
There would be conflicting vehicle movements (during construction and operation) with existing accesses	The Applicant can offer to provide advanced notice of use of the lay-by to the landowner to identify in advance if there would be some major conflict.
The layby is not safe for the Applicant's operatives to use	The layby has been designed to allow an operative to pull safely off the carriageway and exit a vehicle without needing to enter the 'live' carriageway.
Alternative locations for the layby are available	The layby needs to be adjacent to the Line Valve located adjacent to the road no other alternative sites have been identified.
The lay-by inhibits the construction of an underpass	The Applicant is aware of these aspirations as they were raised during the Non-Statutory Consultation in 2025. However, at this stage it is not certain what the interface with the Proposed Project may be.

6.3.5 Use of Gravity Pressure

507. The general observer submission from John Fingleton raised concerns about the way that the use of gravity pressure was described:

Unique ID	Name of Individual or Organisation
WSP_SUB_19	John Fingleton

508. This general observer submission raised concerns about the statement in the EIAR referring to optimising gravity pressure for transporting treated water through the pipeline to reduce energy demand were misleading and incorrect.

6.3.5.1 Applicant's Response

509. The Applicant can confirm that the statement Mr Fingleton refers to was not intended to be misleading and agrees that it is too simplistic and, in hindsight, could have been expressed better. However, it is correct that we have sought to optimise the use of gravity pressure, and the statement was intended to simplify the complex hydraulic considerations. We accept the point raised by Mr Fingleton that pumping the water up to the high point of the pipeline at the BPT would use more energy than would be saved through the use of gravity pressure, thereafter.

510. However, avoiding the use of a BPT is not technically viable for safety reasons related to control and transient pressures. Therefore, once the need for a BPT at the high point of the pipeline route was established, some element of pumping uphill was necessary. The decision making around this had to consider the size of the pipeline, the location of the BPT and the need for additional pumping to move the water through the pipe. Many scenarios were evaluated and the optimal least whole life cost and lower construction risk solution was determined to be to introduce the BPS which enables a reduction in the diameter of the pipeline, from a previous proposed 2m diameter pipe to a 1.6m pipe (the selection of the diameter of the pipeline was described in the EIAR in Section 3.8.2 of Chapter 3 (Consideration of Reasonable Alternatives)). In this way the use of gravity pressure to move the water through the pipeline was optimised for the wide range of flows over which the pipeline is required to operate.

6.3.6 Parteen / Ardnacrusha Barrier System

511. The general observer submission from Castleconnell River Association raised a specific issue relating to the proposal to use the Parteen / Ardnacrusha Barrier System for the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_35	Castleconnell River Association

512. This general observer submission stated that the Parteen / Ardnacrusha Barrier System, which the Proposed Project proposes to use as a water reservoir system, is unfit for purpose as a modern impoundment system. The submission continued that this fact is fully acknowledged and accepted by the Applicant, the Department of Housing, Planning and Local Government, and ESB.

6.3.6.1 Applicant's Response

513. The Applicant considers that this observation is not relevant to the design of the Proposed Project as submitted within the SID Planning Application. Insofar, as this observation relates to the environmental status of the River Shannon (under either WFD or NIS) this is considered further in Chapter 11 (Water (Hydrological Modelling and Water Levels)) of this report.

6.3.7 Chemicals at the Proposed Water Treatment Plant

514. The general observer submission from Ballymore Eustace Trout and Salmon Anglers Association raised a specific issue relating to the chemicals required for the treatment process at the proposed WTP:

Unique ID	Name of Individual or Organisation
WSP_SUB_71	Ballymore Eustace Trout and Salmon Anglers Association

515. This general observer submission stated that, because of the list of chemicals used at the proposed WTP at Birdhill, (Sulphuric Acid, Aluminium Sulphate, Polyelectrolyte, Caustic Soda, Sodium Hypochlorite, Brine) it could also be considered a chemical process factory.

516. Further, the submission made reference to the treatment and disposal of the aluminium hydroxide coagulated with polyelectrolyte sludge and the large volumes of toxic filter backwash water and other wastewater produced at the WTP.

6.3.7.1 Applicant's Response

517. The Applicant does not agree that the WTP would be considered a chemical process factory. The chemicals to be used at the proposed WTP are all approved by the Applicant for use in the treatment of raw water, under various Uisce Éireann Technical Standards (IW-TEC-900 series). These chemicals are standard in the water industry. The primary purpose of the WTP is to produce water fit for human consumption. No chemicals will be produced at the WTP therefore it is not correct to consider the WTP to be a chemical process factory.

518. The Applicant can confirm it is not proposed to use aluminium hydroxide at the WTP. The proposed coagulant is aluminium sulphate. As set out in the SID Engineering Report the treatment of water treatment residuals will be carried out in accordance with *IW-TEC-900-07 Treatment of Water Treatment Plant Residuals*. The residuals generated are not considered 'toxic' and are classified as Class 1 residuals under IW-TEC-900-07 (Class 1 Residuals arise as a result of the day-to-day operation of Water Treatment processes including Coagulation, Flocculation and Clarification, Filtration, Membrane processes and Ion Exchange processes, and as a result of Solid Residual Treatment processes).

6.3.8 Risk of Low Flow and Drought Conditions during the Operational Phase

519. The following general observer submissions raised concerns about the risk of low flow and drought conditions during the Operational Phase:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd.
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_65	Samuel Norris

520. The general observer submission from the River Shannon Environmental Protection Alliance Company Ltd. and Councillor Séamie Morris stated that the 300Mld proposed abstraction could reasonably be considered the initial proposal and that the Applicant previously proposed that the abstraction could be varied, by as much as 50% so that the total abstracted over a seven day or fourteen day back-to-back, would not exceed the 300 Mld, being currently applied for.

521. The general observer submission from Samuel Norris stated that large national infrastructure projects frequently operate beyond initial assumptions during emergency supply conditions, and clarification is requested regarding safeguards preventing increased abstraction during national drought emergencies, and environmental protections applicable during emergency operation.

6.3.8.1 Applicant's Response

522. The Applicant does not agree that there would be scope to exceed the limits imposed by the Abstraction Licence, which would consent the operation of the Proposed Project. The Abstraction Licence will have the same peak abstraction of 300Mld as formed the basis of the SID Planning Application, including the EIAR.

523. There are related matters raised under the general themes, and these are addressed in Section 6.2.2. There are also related comments from Prescribed Bodies considered in Section 6.4.1 and 6.4.2.

6.3.9 Availability of Water

524. The following general observer submissions raised concerns about the risk of low flow and drought conditions during the Operational Phase:

Unique ID	Name of Individual or Organisation
WSP_SUB_10	Christopher Campion
WSP_SUB_22	Michael Reidy
WSP_SUB_35	Castleconnell River Association

525. The general observer submission from Christopher Campion identified that there would be insufficient water available for the Proposed Project in a drought and that in 2018 there were 74 days when Ardnacrusha was not using water, and the minimum statutory compensation flow was going to the Old River Shannon.

526. Michael Reidy calculated that in a drought equivalent to the one in 2018 there would not be enough water to meet the peak proposed abstraction of 300Mld and there would be a shortfall of 15 million m³ of water.

527. The general observer submission from Castleconnell River Association stated that Lough Derg and Parteen Basin contain a maximum of 130 days supply assuming that the Operating Band was at full height at the beginning of the drought.

6.3.9.1 Applicant's Response

528. The Applicant does not agree that there would be insufficient water in Parteen Basin during a drought to meet the 300Mld demand. This is detailed further in Chapter 11 (Water (Hydrological Modelling and Water Levels)) of this report which describes the hydrological modelling undertaken. This has demonstrated that water levels can be maintained above the required minimum level, whilst meeting the statutory minimum compensation flow, during a drought equivalent to the worst drought on record, allowing for future climate change, with the Proposed Project in operation at its peak abstraction, based on historic and current operating principles.

6.3.10 Systemic Vulnerability of the Proposed Project

529. The following general observer submissions raised specific issues relating to system vulnerability of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_22	Michael Reidy
WSP_SUB_50	James Crowley
WSP_SUB_53	Keith Ball
WSP_SUB_65	Samuel Norris

530. The general observer submission from Joanne Skehan stated that over centralisation creates systemic vulnerability, and the associated risks include single point failure exposure, major outage consequences, increased security risks and reduced flexibility compared to modular systems.

531. The general observer submission from Michael Reidy stated that the application is for a single pipeline carrying treated water to Dublin and the midlands, and in the event of disruption, minor failure or catastrophic failure, there is no fall back position.

532. The general observer submission from James Crowley stated that a single-source water supply line presents a significant strategic vulnerability, and continues that the application should address vulnerability assessment, probabilistic analysis, emergency response protocols, estimated repair times, and redundancy provisions.

533. The general observer submission from Keith Ball raised concern about the vulnerability of the Proposed Project infrastructure due to its scale.

534. The general observer submission from Samuel Norris stated that reliance upon a single long-distance inter-basin transfer introduces systemic vulnerability.

6.3.10.1 Applicant's Response

535. The Applicant disagrees with the observations raised in these submissions regarding the systemic vulnerability of the Proposed Project. The Proposed Project is being brought forward specifically to increase resilience in supply for the Eastern and Midlands Region and to reduce reliance on the existing supplies from the river Liffey.

536. For the Proposed Project the design philosophy has been to achieve resilience in supply through measures included, but not limited to:

- Treating water close to the abstraction point avoiding the need for frequent cleaning and maintenance of the majority of the pipeline (as described in the EIAR in Chapter 4 (Proposed Project Description))
- Including a second pipeline for sections where raw water is being moved (as described in the EIAR in (Chapter 4 (Proposed Project Description))
- Selecting steel as the pipeline material based on a proven resilient track record (as set out in the EIAR in Chapter 3 (Consideration of Reasonable Alternatives))
- Allowing for sections of the pipeline to be drained down independent of others (as described in the EIAR in Chapter 4 (Proposed Project Description) and Appendix A4.1 (Operational Strategy))_

6.3.11 Recommended Conditions

537. The general observer submission from Ballymore Eustace Trout and Salmon Anglers Association recommended an operational-related condition to be attached to any grant of planning:

Unique ID	Name of Individual or Organisation
WSP_SUB_71	Ballymore Eustace Trout and Salmon Anglers Association

538. This submission requested that ACP insert a condition in the planning permission specifying the maximum volume of water that can be abstracted through all intakes into the WTP. The Applicant must install metering equipment for the accurate measuring and recording of the daily abstraction volume (not estimates as at Ballymore Eustace) and the volume must be reported on a regular basis to the local authority and be made available for public inspection.

6.3.11.1 Applicant's Response

539. The Applicant acknowledges the recommended conditions and requirements within the submission from Ballymore Eustace Trout and Salmon Anglers Association. Further, the Applicant is committed to ongoing consultation with anglers throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements.

540. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. However, the Applicant considers that this condition is relevant to the Abstraction Licence, if granted rather than the SID Planning Application.

6.4 Response to Specific Issues Raised by Prescribed Bodies

6.4.1 Future Amendments to Abstraction

541. The prescribed body submission from IFI raised a specific issue relating to future amendments to abstraction:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

542. This prescribed body submission stated that IFI seeks clarification about the process for future changes to the permitted abstraction rate if future demand exceeds forecasts, this should be addressed in any future planning application.

6.4.1.1 Applicant's Response

543. The Applicant considers that this observation is not relevant to the design of the Proposed Project as submitted within the SID Planning Application.

544. There is a general observation which relates to this specific comment, and this is described in Section 6.2.1 and in the specific matters in Section 6.3.8.

6.4.2 Future Expansion and Increased Abstraction

545. The prescribed body submission from Limerick County Council raised a specific issue relating to future expansion and increased abstraction:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council

546. This prescribed body submission stated that the planning application does not address the potential for future expansion or increased abstraction.

6.4.2.1 Applicant's Response

547. The Applicant has set out in the SID Planning Application the basis for the 300Mld peak abstraction which is based on demand projections to 2050. There is no planned expansion or future increase in abstraction.

548. There is a general observation which relates to this specific comment, and this is described in Section 6.2.2 and in the specific matters in Section 6.3.8.

6.4.3 Architectural Design

549. The prescribed body submission from the OPW stated that a coordinated architectural design approach similar to the Arklow wastewater treatment plant (WwTP) should be explored for the Proposed Project building campuses:

Unique ID	Name of Individual or Organisation
WSP_SUB_96	Office of Public Works (OPW)

550. This submission stated that an integrated design approach, including architectural coordination, adopted by the Applicant on other significant recent projects has proven its value, and that the development of the Arklow WwTP serves as an exemplar in this regard and a similar approach should be adopted by the Applicant.

6.4.3.1 Applicant's Response

551. A coordinated Architectural Design has been developed by the Applicant for key buildings at the Infrastructure Sites and this has been adopted in the design that underpins the plans set out in the Planning Application. This included consideration of the characteristics of the sites and surrounds and the architectural design concept to be achieved.

552. The approach to the architectural design of key buildings / infrastructure is described in Appendix A (Architectural Design Statement) to the SID Engineering Report included in the SID planning application. The proposed design of the buildings including the finishes are set out in the Planning Drawings including for example for the WTP Visitors Centre: Water Treatment Plant Control and Visitors Building Elevations:

Drawing: 32105801-850-02043. The development of the architectural treatment of the WTP Visitors Centre included engagement with the Planning Department of Tipperary County Council.

553. The building design is only part of the overall integrated design concept which is intended to reduce the environmental effects of the Proposed Project. In particular, planting proposals have been set out in Water Treatment Plant Proposed Landscape Plan (Dwg No. 32105801-850-02057) to soften the appearance of the site and reduce visual effects.

6.4.4 Sustainability of the Proposed Pipeline

554. The prescribed body submission from IFI raised concerns about the sustainability of the proposed pipeline:

Unique ID	Name of Individual or Organisation
WSP_SUB_88	Inland Fisheries Ireland (IFI)

555. This prescribed body submission stated that IFI has serious concerns over the sustainability of a pipeline of considerable length (c. 170 km).

6.4.4.1 Applicant's Response

556. The pipeline design life is in excess of 100 years and pipelines are by far the safest and most sustainable ways of transporting large volumes of fluids. The route selection and the design seek to mitigate environmental impacts both during construction and operation. Any disturbance to water courses will be kept to a minimum and the impact very short lived during construction. No discharges will be necessary during normal operation other than normal surface water run off which will be restricted to normal greenfield run off rates.

557. Mitigation measures in relation to watercourse crossings is addressed in Section 10.4.6 in Chapter 10 – Biodiversity of this report, in relation to fish; and Section 12.4.4 of Chapter 12 – Water (General) of this report, in relation to the water environment. This includes, for example, the commitment to undertake works in accordance with the IFI Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters, and to implement surface water management measures as set out in the Surface Water Management Plan (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan).

558. As per the conclusions of EIAR Chapter 8 (Biodiversity) and Chapter 9 (Water), there would be no likely significant effects from watercourse crossings given the mitigation measures that are proposed.

6.4.5 Decommissioning of Water Treatment Plants

559. The prescribed body submission from IFI raised a specific issue relating to the decommissioning of existing WTPs in the event that the Proposed Project is granted:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

560. The prescribed body submission stated that, should the Proposed Project be granted planning permission, where existing WTPs will be decommissioned as part of the Proposed Project or where intake weirs and in-stream structures are no longer required due to the new source of water, IFI require that these in-stream structures are removed from watercourses as a priority, especially where they pose a barrier or have potential to impact on fish passage.

6.4.5.1 Applicant's Response

561. The Applicant appreciates the intent and purpose of the observation and can confirm that it will, in its wider role continue to monitor and reassess such existing infrastructure in accordance with its management plans. However, in the context of this SID Planning Application the decommissioning of existing infrastructure is not part of the Proposed Project.

6.4.6 Adequacy of Design Detail Provided for County Kildare

562. The prescribed body submission from Kildare County Council raised a specific issue relating to the level of design detail for elements of the Proposed Project works in Kildare provided in the planning application:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

563. This prescribed body submission stated that there appears to be no drawings for the demolition of an agricultural building within County Kildare, and that for the sake of completeness, details in this regard are required. The submission continued that there are also limited details supplied regarding the temporary construction compounds and more detail on these compounds would be beneficial. The submission further stated that the application is missing detailed access drawings for haul routes, compounds and depots.

6.4.6.1 Applicant's Response

564. The Applicant welcomes the feedback received. The building to be demolished is shown on the Planning Drawings: Gravity Pipeline Section D Plan and Longitudinal Section Sheet 10 of 23 DWG No. 32105801-850-07110. The building is on the proposed temporary access to the Construction Working Width for the pipeline. It is an agricultural outbuilding of recent construction. The building is in use to support agricultural activities and is not residential. Discussions are on-going with the landowner to find a way to avoid the need for the demolition.

565. The Applicant does not agree that there is limited detail regarding the proposed compounds and haul roads. The SIC application includes, but is not limited to:

- Chapter 5 (Construction and Commissioning) which describes Construction Compounds and Depots and Access including but not limited to matters such as fencing, top soil stripping and access points;
- Figures 4.2 – 4.60 in Chapter 4 (Proposed Project Description) provide an overview of the whole of the Proposed Project including the extent of the temporary working area (which is the Planning Application Boundary) and access points
- Figures 5.1 – 5.17 in Chapter 5 (Construction and Commissioning) indicative layouts of the Construction Compounds and Pipe Storage Depots;
- Figures 5.18-5.26 in Chapter 5 (Construction and Commissioning) show proposed haul routes; and
- Figures 5.28 and 5.29 in Chapter 5 (Construction and Commissioning) outline the typical Construction Working Width.

6.4.7 Storage Capacity at the Proposed Termination Point Reservoir

566. The prescribed body submission from Limerick County Council raised a specific issue relating to the storage capacity at the TPR:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council

567. This prescribed body submission raised concerns that Dublin's storage capacity at the proposed TPR is only 75MI, while daily demand already exceeds 630 megalitres, meaning that abstraction from Parteen will be continuous-day and night-including during drought and low-flow periods.

6.4.7.1 Applicant's Response

568. The Applicant does not agree that additional capacity is required at the TPR as set out in Section 6.2.4. It is correct that the abstraction will be continuous 24 hours a day and the effect of abstracting during a low flow and drought period is considered in Chapter 11 (Hydrological Modelling and Water Levels) of this report.

569. There were general matters that relate to this matter, and these are described in Section 6.2.4.

6.4.8 Power Purchase Agreement

570. The prescribed body submission from An Taisce highlighted the requirement for a Power Purchase Agreement for the operation of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_80	An Taisce

571. This prescribed body submission highlighted that the Applicant have stated that they are pursuing a power purchase agreement for renewable energy in relation to the grid-generated electricity needed for the various Infrastructure Sites (to supplement the proposed on-site renewables at five of the Infrastructure Sites). The submission recommended that the details of the power purchase agreement be confirmed prior to any grant of permission.

6.4.8.1 Applicant's Response

572. As set out in EIAR Chapter 13 (Climate), the Applicant is pursuing a power purchase agreement, and this will specify that the power supplied from the mains network by ESB Networks will be from a renewable supply. This mitigation measure is captured in the Register of Environmental Actions and Commitments (REAC) in Annex G of EIAR Appendix A5.1 (Construction Environmental Management Plan (CEMP)), it is therefore a requirement that this measure is implemented during the Operational Phase.

6.4.9 Access Design and Sightlines

573. The prescribed body submission from Tipperary County Council raised concerns about access design and sightlines:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

574. This prescribed body submission raised concerns in relation to access design and sightline compliance. The submission stated that the proposed construction compound at Lisgarrieff will be accessed from the N52 at a point where the 100km speed limit applies. The submission continued that this is in contravention of the Spatial Planning and National Roads Guidelines (2012) and Policy 12-5 of the Tipperary County Development Plan 2022 and should not be permitted and scope for access to this compound from the L-5079 should be explored.

575. The submission continued that the drawings that accompany the EIAR do not show visibility splays at the RWI&PS and the WTP and that sightlines shown on Figure 4.67 at the access junction onto the L1064 to serve the BPT but the drawings scale (1: 1250) impairs assessment of the proposals. The submission also stated that the new access junctions serving the permanent infrastructure sites will also serve the construction compounds located at the RWI&PS, WTP and BPT, and the same concern arises with regard to lack of detail on sightlines at these entrances. The submission also stated that the sight lines shown on Figure 5.3 and Figure 5.9 do not satisfy the requirements of the Tipperary County Development Plan 2022 and the drawing scale impairs assessment of the proposed visibility splays. The submission further stated that the EIAR notes that where visibility splays cannot be developed the access locations will be manned by banksmen and this requires a high level of resources to properly manage to ensure the safety of these access points on an ongoing basis, as locating the accesses where adequate visibility splays can be provided is the desired approach.

576. The submission also stated that any new road link and points of connection to public road must demonstrate sightlines as per Tipperary County Council requirements where such access / egress point is not subject to traffic management controls.

6.4.9.1 Applicant's Response

577. The Applicant can confirm that sightlines for the permanent Infrastructure Sites at the RWI&PS and WTP have been evaluated. For both locations (on the R494 and R445) a proportion of the sight line is provided by the existing curtilage of the road. This is due to the recent road improvements at the R494 and the widened road way at the R445 (perhaps linked to the historic petrol station). The Applicant can provide further information on sight lines if considered necessary and requested by ACP.

578. The Applicant has identified that at the BPT the sightline on the western side of the entrance would be constrained by the existing properties and so will not reach the full length required and this is stated in the SID Engineering Report (Section 6.2.12) and Chapter 4 (Proposed Project Description) (Section 4.8.3). The permanent access for the BPT will replace an existing access / entrance from the land onto the L1064 and the constraint adjacent to the existing access cannot be removed. The Applicant has included a splayed entrance at the access point from the L1064 to help the situation but acknowledges that additional measures, such as a speed reduction may be required. The Applicant would welcome further dialogue with the Council on this matter.

6.4.10 Adequacy of Design Information Regarding the Strategic Road Networks

579. The prescribed body submission from TII raised concerns regarding design reports for trenchless crossings of the strategic road network, one lay-bay locations and new access points:

Unique ID	Name of Prescribed Body
WSP_SUB_99	Transport Infrastructure Ireland

580. The prescribed body submission from TII stated that:

“This TII Publication Standard sets out the procedures to be followed for the technical aspects of the Design Phase of scheme types including development led schemes. TII Publication (Standards) DN-GEO-03030 requires the preparation and submission of a Design Report to TII for agreement. Crucially, section 8 of the Standard states: “Statutory Planning Procedures (Phase 4J should not commence prior to the review and satisfactory responses to any comments from TII of the Design Report.”

581. The submission went on to highlight TII Publication (Standards) DN-GEO-03052 - The Location and Layout of Garda Enforcement Areas, Garda Observation Areas, Emergency Refuge Areas, Maintenance Bays and Location Markers. TII expects that the plans and details associated with the lay by shall be reviewed and revised accordingly.

582. TII recommended revised documentation shall be submitted which demonstrate that all works to the national road shall comply with TII Publications (formerly NRA DMRB); technical design standards for national roads, including Design Report requirements in accordance with TII Publications GN-GEO-03030.

583. In relation to the M7 crossings TII stated:

“Prior to a decision being made, the applicant shall submit appropriate plans and details which shall demonstrate that the proposed crossings of the M7 (crossing refs. RDX0007 and RDX0015) are to be in strict compliance with TII Publications”.

6.4.10.1 Applicant's Response

584. TII has requested further information including design reports. In response to this submission the Applicant is planning further engagement with TII. The Applicant can prepare these documents if ACP considers it appropriate.

585. The Applicant notes that there were overlaps in requests from TII for further information related to construction matters, Road Safety Audits and settlement which due to the structure of this report are considered in Chapter 7 (Construction and Commissioning), Chapter 9 (Traffic and Transport) and Chapter 21 (Material Assets). These responses should be considered in conjunction with one another.

6.4.11 Wastewater Infrastructure

586. The prescribed body submission from Tipperary County Council raised concern about wastewater infrastructure:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

587. This prescribed body submission raised concerns about wastewater infrastructure and highlighted the issue of sludge from existing extraction plants and questioned why the EIAR made no specific reference to sludge management. The submission also noted that LAWPRO had reported a 10% deterioration in water quality in the Lough Derg catchment, and expressed worry that the Applicant's lack of investment in wastewater systems might be limiting population growth in the region.

6.4.11.1 Applicant's Response

588. The Applicant does not agree that the EIAR makes no reference to sludge management. Chapter 4 (Proposed Project Description) sets out the approach to the management of sludge arising from the treatment process and the buildings proposed to achieve this including for example in Section 4.6.5:

“Sludges would be thickened in four 12m diameter Sludge Thickeners (Building 15 as shown in Figure 4.63 [in the EIAR]) and sludge volumes would be balanced in four 10m diameter Sludge Balancing Tanks (Building 15 as shown in Figure 4.63 [in the EIAR]). There would be two Sludge Forward Pumping Stations (Building 16 as shown in Figure 4.63 [in the EIAR]) which would deliver to six Sludge Storage Tanks and two Sludge Storage Silos attached to the Sludge Dewatering Buildings, which would allow sludge to be taken in liquid form, if necessary. Two Sludge Dewatering Buildings (Buildings 17 and 18 as shown in Figure 4.63 [in the EIAR]) would be provided, where sludges at 1–3% dry solids would be dewatered to approximately 25% dry solids before transfer to the Sludge Storage Buildings.”

589. The options for disposal and / or re-use of the sludge arising and the environmental effect of this was considered in Chapter 19 (Resources and Waste Management which stated) in Section 19.4.3:

“According to the NWRP, Technical Appendix K Residuals (Irish Water 2021b), Uisce Éireann is moving towards a circular economy model with respect to sludge management, with water sludge viewed as a valuable resource and source of precious finite materials. To that end, it is intended that, where practicable, the operational residual water sludge would be put to a beneficial reuse.

Examples of the potential sustainable outlets and beneficial uses are outlined in Section 19.2.3.7 [in the EIAR] and include wetlands or reed bed systems as a beneficial product for nutrient removal; cement manufacture as an alternative to aluminium-containing raw materials such as bauxite; brick manufacturing as an alternative to raw materials; and landfill remediation, amongst others. These represent emerging treatment options, the uptake for which, and the driver for the introduction of treatment capacity, is the general industry shift towards Circular Economy approaches.

Currently, Uisce Éireann is sending 90% of water sludge from water treatment to sustainable outlets with the remaining 10% being used for landfill capping material (2023 figure, Commission for Regulation of Utilities (CRU) 2025). Therefore, for baseline and the worst-case assessment the capacity for these uses is presumed to match the existing performance of 90% diversion from landfill.

It is anticipated that when operation commences in 2033 sustainable/beneficial reuse outlets are likely to be more widely available for recovery of the operational residual water sludges. Sustainable outlets are businesses or industries (typically manufacturing) where water sludge can be used as an input to the manufacturing process; for example, in cement manufacturing where aluminium sludge can displace bauxite as a raw material in cement production.”

590. The matters raised regarding wastewater infrastructure and water quality in Lough Derg are addressed in Chapter 12(Water (General)) of this report.

6.4.12 Adequacy of Information Regarding the Depth of Proposed Pipeline

591. The prescribed body submission from Tipperary County Council queried the depth of the pipeline at the abstraction point:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

592. This prescribed body submission queried the depth of the pipe at the abstraction point was not clear in the documents provided which is an important consideration that can potentially impact the ecology and temperature of the lake if taken at an incorrect level.

6.4.12.1 Applicant's Response

593. The Applicant does not agree with the observation made in the submission. The depth of the intake chamber at the abstraction point from Parteen Basin and the depth of the pipe in the inlet chamber are both shown on the cross section of the Raw Water Intake and Pumping Station (Dwg No. 2105801-850-01007) included within the Planning Drawings submitted as part of the SID Planning Application, while the depth of the Raw Water Rising Mains from this location to the WTP are shown on Layout Plan and Longitudinal Section (Dwg No. 2105801-850-07200).

594. These features are also described in the EIAR in Chapter 4 (Proposed Project Description) and the SID Engineering Report submitted with the SID Planning Application. These both provide details of the depth of the buildings and the pipeline.

6.4.13 Supply of Raw Water from Ardnacrusha Dam

595. The prescribed body submission from Tipperary County Council raised a specific issues relating to the supply of raw water from Ardnacrusha Dam:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

596. This prescribed body submission stated that there is an assumption that Ardnacrusha Dam will remain in place for the longer term to ensure a continuous supply of raw water to the Proposed Project. The submission further stated that this dam is approximately 100 years old and will require maintenance and remedial works during the medium to long-term, and queried whether the planning application sufficiently addresses this aspect in the context of the overall infrastructure project.

6.4.13.1 Applicant's Response

597. The Applicant acknowledges that the Proposed Project is dependent on the impoundment of water by Ardnacrusha Dam. Any maintenance and or remedial work works during the medium to long-term would be separate to the Proposed Project and outside of the scope of the SID Planning Application.

598. Insofar as this observation relates to the environmental status of the River Shannon (under either WFD or NIS), this is considered further in Chapter 11 (Water (Hydrological Modelling and Water Levels)) of this report.

6.4.14 Request for Further Investigation of Mitigation for Leakage

599. The prescribed body submissions from Tipperary County Council and LAWPRO raised comments regarding leakage:

Unique ID	Name of Prescribed Body
WSP_SUB_68	The Local Authority Waters Programme (LAWPRO)
WSP_SUB_114	Tipperary County Council

600. This prescribed body submissions requested that consideration should be given to undertaking further investigations on contingency arrangements for water storage to mitigate against potentially large water losses in the event of major leaks, or in situations where abstraction cannot be maintained at the threshold levels.

6.4.14.1 Applicant's Response

601. The Applicant does not agree with these observations as the resilience of the Proposed Project and specifically the pipeline has been taken into consideration in making design decisions and this has resulted in the Proposed Project as described in Chapter 4 (Proposed Project Description) in the EIAR)

602. The overarching aim of the Proposed Project is to provide increased resilience to the existing water distribution network by providing the first major 'new source' infrastructure in the Region in the last 60 years. As a result at a strategic network level the Proposed Project will provide a major benefit in terms of increased resilience and reduced pressure on existing infrastructure.

603. Regarding the pipeline itself, coated steel has been selected as the pipeline material as catastrophic failures on steel pipelines are extremely rare and this is described in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR.

604. The Applicant has set out in the EIAR in Chapter 4 (Proposed Project Description) and Appendix A4.1 (Operational Strategy) the measures in place to monitor the pipeline, specifically the use of Cathodic Protection as set out in 4.13.6 and 4.13.11 of Chapter 4 (Proposed Protection Description) in the EIAR.

605. For the whole of the Proposed Project pre-emptive monitoring and inspections will be carried out routinely to allow the Applicant to identify and address any potential issues before they arise.

606. In line with the Operational Strategy (EIAR Appendix A4.1), in the unlikely event that a leakage incident should occur along the pipeline, remotely operated automated Line Valves will be closed in order to limit the amount of water that can discharge from the affected section of pipe. If required, the section of pipe can then be drained down, water will be de-chlorinated and there will be a controlled discharge to nearby watercourses, at flow rates appropriate to their capacity. Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur. Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners is minimised.

6.4.15 Recommended Planning Conditions from Tipperary County Council

607. The prescribed body submission from Tipperary County Council recommended conditions to be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

608. This prescribed body submission requested that the following condition be attached to any grant of planning:

- Requirement for the maintenance of screens to ensure that they remain free of debris and intact;
- Requirement for monitoring for potential leaks and timelines for should be outlined for addressing leaks occurring in area of ecological sensitivity versus less ecological sensitive areas within the Proposed Project area;
- All infrastructure and the proposed pipeline should be designed to be watertight;
- The potential impact of the proposed WTP and the management of same, including any proposed discharges to the local environment, must have appropriate control measures including appropriate risk assessments and risk management practices incorporated to avoid any negative impact to the environment and local ecology. Residual discharges and chemical spills from drinking water treatment plants not managed appropriately have in the past caused significant environment and ecological damage which must be avoided; and
- Adequate mitigation will be required throughout construction, particularly 111 sensitive areas along the proposed pipeline route, to avoid negative impacts to surrounding ecology and waterbodies. In addition, subsidence concerns (particularly in peat substrate) will require significant mitigation to protect local waterbodies. It is noted that the EIAR has identified specific risks requiring mitigation that will require robust and ongoing management during construction, and post construction reinstatement.
- Consideration should be given to undertaking further investigations on contingency arrangements for water storage to mitigate against potentially large water losses in the event of major leaks, or in situations where abstraction cannot be maintained at the threshold levels.

6.4.15.1 Applicant's Response

609. The Applicant acknowledges the recommended conditions and requirements within the submission from Tipperary Council. The Applicant is committed to ongoing consultation with the Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements.
610. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.
611. The Applicant notes that the screens do not need to be completely free of debris at all times and therefore, require regular maintenance and clearance of screens.

7. Construction and Commissioning

7.1 Overview

612. Thirteen of the 114 submissions raised issues that are best responded to under Construction and Commissioning.

613. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding:

- The construction of the Proposed Project (excluding comments on the environmental effects of the construction of the Proposed Project which, where relevant, are considered in Chapters 8 - 27); and
- Matters related to the construction approach such as Construction Compounds, Pipe Storage depots and the Construction Programme.

614. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:

- Chapter 5 (Consideration of Reasonable Alternatives)
- Chapter 6 (Proposed Project Description;
- Chapter 9 (Traffic and Transport); and
- Chapter 21 (Materials Assets).

615. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.

616. There were a large number of comments raised regarding the environmental effects of the Proposed Project and these are addressed in the relevant topics in Chapters 8 – 27 however, there were relatively few about the actual construction works. Most related to the impacts on land and the proposals specific to that land parcel.

617. This Chapter is structured around the following sections:

- Specific matters raised regarding construction and commissioning; and
- Specific matters raised by Prescribed Bodies regarding construction and commissioning.

7.2 Response to General Issues Raised

618. There were no general construction issues raised in the submissions.

7.3 Response to Specific Issues Raised in General Observer Submissions

7.3.1 Proposed Construction Access

619. The following submissions raised concern about the lack of clarity around proposed construction access:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_92	Judith Kohler

7.3.1.1 Applicant's Response

620. Construction access was described in the EIAR in Chapter 5 (Construction and Commissioning) in Section 5.11 and Section 5.12 and access points were identified, specifically in Figures 4.2 – 4.60 (Project Component Overview). The access points will be used to get vehicles from the public highway into the Construction Working Width (this is the typical working area for constructing the pipeline and was defined in Chapter 5 – Construction and Commissioning in the EIAR). The Construction Working Width include provision for a temporary Construction Road. Vehicles will then use the Temporary Construction Road to move up and down the length of the pipeline.

621. The access points that were included in the information in the EIAR include the locations that would be used to access the land relevant to these submissions. This is summarised in the table below:

Name of Individual or Organisation	Relevant Access
Danny Janssens	AE39 – EIAR Figure 4.59
Gordon and Leslie Beattie	From the TPR – EIAR Figure 4.60
Judith Kohler	AE39 – EIAR Figure 4.59

7.3.2 Duration of Construction Elements on Specific Landowner Lands

622. Four general observer submissions raised a specific issue relating to information on the duration of construction elements on their land not being included in the planning application:

Unique ID	Name of Individual or Organisation
WSP_SUB_84	Eamonn Dooley
WSP_SUB_86	Fintan Dunne
WSP_SUB_89	James Cullen Senior
WSP_SUB_102	Fonsell Ltd

623. The general observer submissions from Eamonn Dooley, Fintan Dunne and James Cullen Senior stated that the proposed duration that the compounds on their lands, will be in situ for, needs to be specified in the planning application.

624. The general observer submissions from Fonsell Ltd. stated that the length of time the construction working area will be required for on their lands is unclear in the planning application.

7.3.2.1 Applicant's Response

625. The Applicant acknowledges the landowner's concern that the duration of occupation for the land should be clearly defined and that the combined temporary impacts of the compound and pipeline working corridor could materially affect stocking capacity, grazing/silage management and rotational tillage, with consequential risks to enterprise continuity during the construction period.

626. The EIAR provides programme assumptions in Chapter 5 (Construction and Commissioning) for temporary land occupation and confirms that temporary working areas are controlled through programme management and possession arrangements, with the objective of limiting the period of land being out of agricultural use and requiring full decommissioning and reinstatement on completion of the relevant construction activities. In particular, Section 5.9.1 of Chapter 5 (Construction and Commissioning) sets out that each landowner would not be affected for a period of more than 18–24 months (excluding returning to the land during the commissioning phase of the works).

627. The Applicant acknowledges that Construction Compounds and Pipe Storage Depots would be in place for a longer period of time and further that there are not specific commitments to limit how long a particular Construction Compound or Pipe Storage Depot would be in place. However, there are indicative durations provided for the construction compounds at the Infrastructure Sites however, there needs to be flexibility for the contractors to manage the construction phase of the project in the most efficient way whilst dealing with uncertainties such as weather conditions and other factors that will affect the speed of the construction works. Therefore, construction compounds and pipe storage depots could be required for multiple years.

628. Indicative durations for activities have been included in the EIAR in Chapter 5 including an overarching programme in Image 5.1 and specific information on the laying of the pipeline in Images 5.56, 5.57 and 5.58.

7.3.3 Construction Working Area on Specific Landowner Lands

629. The general observer submission from Fonsell Ltd. raised a specific issue relating to information on the duration of construction elements on their land not being included in the planning application:

Unique ID	Name of Individual or Organisation
WSP_SUB_102	Fonsell Ltd

630. The general observer submission from Fonsell Ltd. stated that the construction working area on their lands is excessive.

7.3.3.1 Applicant's Response

631. With regards to the extent of the working area, Chapter 5 (Construction and Commissioning) of the EIAR, defines the construction working area to enable safe construction and its purpose, including the installation of the pipeline and the subsequent reinstatement of the land. Chapter 5 (Construction and Commissioning) (Section 5.9) describes this as the 'Construction Working Width' that is required to construct the pipeline. This is typically 50 m, with localised widening where required. The justification for the 50m corridor is set out in those same sections of those reports and is supported by Image 5.4 in Chapter 5 (Construction and Commissioning). In addition, the same chapter of the EIAR provides details of the Proposed Project's construction methodology context (including how construction compounds/working areas are used as part of delivery), the corridor/working requirements and the construction basis for the Proposed Project.

632. Chapter 5 (Construction and Commissioning) also identify, in the sections referred to above, the reasons for increasing the 50m Construction Working Width (e.g., at crossings, access/egress points, construction compounds and pipe storage depots), reflecting that the working area is not arbitrary but is a route wide requirement that varies only where necessary for constructability and safety.

633. These reasons include additional land needed for trenchless crossing techniques where these are proposed. This is the reason for the enlarged area of temporary acquisition, associated with this submission, immediately adjacent to the Grand Canal as this structure is proposed to be crossed using trenchless techniques.

7.3.4 Acquisition of Construction Compound Areas on Specific Landowner Lands

634. Two general observer submissions raised a specific issue relating to the temporary acquisition of construction compound areas on their land:

Unique ID	Name of Individual or Organisation
WSP_SUB_84	Eamonn Dooley
WSP_SUB_86	Fintan Dunne

635. The general observer submissions stated that the temporary construction compounds should be acquired by the contractor after award, or otherwise designed and sited to minimise impacts on the retained farms.

7.3.4.1 Applicant's Response

636. This was considered as a proposal for an alternative approach to the one set out for the Proposed Project and has been addressed in Chapter 5 (Consideration of Reasonable Alternatives) in this report.

7.3.5 Proposed Construction Compound Design

637. Two general observer submissions raised a specific issue relating to the design of the proposed Construction Compounds and Pipe Storage Depots on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_86	Fintan Dunne
WSP_SUB_89	James Cullen Senior

638. These general observer submissions stated that the proposed compound design had no regard to the farming enterprise on their lands.

7.3.5.1 Applicant's Response

639. Chapter 5 (Construction and Commissioning) explains that temporary plot extents are set to be adequate to safely facilitate the required construction activities within the plot boundary and to prevent construction / maintenance activities extending into adjoining lands, while also seeking to minimise land take consistent with deliverability and safety. Therefore, the design of the Pipe Storage Depots and Construction Compounds have considered the use of the land.

640. Further, Chapter 5 (Construction and Commissioning) of the EIAR includes indicative compound layouts showing that practical and environmentally manageable compound arrangements were considered (with detailed compound configuration and methods to be developed by the contractor within the submitted management framework). Figure 5.6 (Pipe Construction Compound Killananny) and Figure 5.16 (Pipe Storage Depot Graiguepottle (Indicative)) in Chapter 5 of the EIAR provide an indicative layout of the proposed compounds or depot at the relevant locations. These layouts are not a final design but demonstrate that a practical and environmentally manageable compound arrangement has been considered for the purposes of the assessment reported in the EIAR.

641. Further, the use of the land has been considered within the mitigation measures and commitments that the Applicant has set out to manage the construction phase, including the Pipe Storage Depots. The framework for managing construction is implemented through the CEMP (Appendix A5.1 in Chapter 5 (Construction and Commissioning) of the EIAR), which sets minimum requirements for mitigation, monitoring and reinstatement and provides the basis for contractor method statements and package-specific CEMPs consistent with the measures submitted with the application.

642. Specific measures related to Construction Compounds are set out in Section 5.3 of the CEMP specifically Section 5.3.1 (Construction Elements and Compounds) and Section 6 (Construction Compounds and Pipe Storage Depots - Generic Control and Mitigation Measures).

7.3.6 Recommended Construction Phase Conditions

643. The general observer submission from Yvonne Moloney recommended construction-related conditions to be attached to any grant of planning:

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney

644. This submission requested that the following conditions be attached to any grant of planning:

- Implement independent water level monitoring at Parteen Basin during construction and initial operation, with regular public reporting. Establish a legally binding drought protocol to pause construction-related abstraction if Lough Derg levels drop below defined thresholds. Apply enhanced sediment control measures, including double silt curtains and settlement ponds, with penalties for any sediment escape in SAC areas; and
- Enforce construction exclusion zones within 200m of the shoreline during July and August peak tourist season.

7.3.6.1 Applicant's Response

645. The Applicant acknowledges the recommended conditions and requirements within the submission from Yvonne Moloney and accepts the principle, spirit, and intent of the suggested conditions and requirements.

646. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.

647. The Applicant has committed to the need for monitoring water quality during construction and has defined proposed limits related to e.g. mobilisation of sediment as set out in Chapter 5 (Construction and Commissioning) of the EIAR. However, as addressed in Chapter 6 (Proposed Project Description) of this report, (Section 6.3.11), the Applicant is not responsible for managing water levels and so cannot accept conditions related to water levels, which it does not control.

648. The Applicant would also highlight that it is not feasible to construct the Proposed Project with an exclusion zone as proposed in the submission. There would be works on both the land and the water side of the shoreline that would need to continue during the summer months for the efficient construction of the Raw Water Intake & Pumping Station.

7.4 Response to Specific Issues Raised by Prescribed Bodies

7.4.1 Testing and Commissioning

649. The prescribed body submission from Inland Fisheries Ireland raised a specific issue relating to the testing and commissioning for the Proposed Project:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

650. This prescribed body submission stated that, in relation to the testing and commissioning of pipes, IFI has concerns over the filling of pipes from local watercourses and discharging of these waters following testing. The submission continued that this also has potential to be a cross-catchment transfer of waters. The submission also stated that IFI notes that there are a number of proposed wash-out valves along the

pipeline, and IFI is concerned about the potential for pollution or leakage from these pipelines during testing and commissioning. The submission requested that consultation and agreement of method statements will be required with IFI for these works.

7.4.1.1 Applicant's Response

651. The Applicant recognises the concerns raised and would highlight that the application documents including specifically the Commissioning Strategy in Appendix A5.2, the Operational Strategy in Appendix A4.1 and the CEMP in Appendix A5.1 (including a Surface Water Management Plan), of the EIAR, set out a suite of mitigation and management measures to address these concerns.

652. However, the Applicant can provide the method statement for the commissioning phase of construction, when available, during detailed design, for comment prior to undertaking the works.

7.4.2 Recommended Construction Phase Conditions

653. The prescribed body submission from the HSE recommended a number of conditions to be attached to any grant of planning, relating to the Construction Phase:

Unique ID	Name of Prescribed Body
WSP_SUB_94	Health Service Executive (HSE) - National Office for Environmental Health Services

654. This prescribed body submission recommended a number of construction-related conditions that should be attached to any grant of planning, as follows:

- A site-specific CEMP is developed for construction around Peamount Healthcare and this should be done in conjunction with representatives from Peamount Healthcare and should recognise the sensitivity of the service provision and the requirement for enhanced mitigation measures during the construction and operational phase;
- Construction work outside the proposed hours of Monday to Friday from 7am to 7pm and Saturday from 8am to 4.30pm, particularly nighttime work, should be the exception and for specific operational requirements that are clearly exceptional or specific to a construction requirement;
- Any water supply used for drinking or preparation of food in the four temporary construction compounds, and their satellite compounds, should meet the requirements of European Union (Drinking Water) Regulations 2023;
- No direct emission of foul or wastewater to ground or surface water. All foul wastewater that cannot be discharged to the public sewer should be contained and taken off site to a licensed treatment facility. A record of this should be maintained;
- A pest control plan should be implemented if construction involves excavation of existing drainage or disturbing rodent habitats near sensitive receptors;
- A dust minimisation mitigation should be continually implemented, and any complaints investigated and responded to and additional mitigation measures implemented when required; and
- Floodlighting of compounds and the use of artificial light in areas of construction activity should be done according to methodology that reduces the likelihood of creating a nuisance to sensitive receptors whilst ensuring correct and safe illumination for different activities. The use of artificial light and the impact on the Peamount Healthcare facilities should be explicitly considered as part of the Lighting Plan (noting there is a published Lighting Plan for the MetroLink Project that addresses common issues for large scale construction projects with regard to artificial light).

7.4.2.1 Applicant's Response

655. The Applicant acknowledges the recommended conditions and requirements within the submission from the HSE. The Applicant is committed to ongoing consultation with HSE throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. General comments from the Applicant on consent conditions are included in Chapter 2 (Overarching Matters) of this report in Section 2.9.
656. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP in EIAR Appendix A5.1 which are included in the planning application documentations.
657. Similar, matters raised by HSE in relation to air quality and noise are covered in those respective chapters of this report: Chapter 15 (Air Quality) and Chapter 8 (Noise and Vibration).

7.4.3 Construction Disturbance in County Offaly

658. The prescribed body submission from Offaly County Council raised concerns about construction disturbance in County Offaly:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

659. This prescribed body submission stated that, while the Proposed Project delivers regional and national benefits, host counties such as Offaly carry the localised impacts, including construction disturbance. The submission recommended the inclusion of conditions to be attached to any grant of planning that require an updated CEMP and that all mitigation measures as outlined in the submitted CEMP shall be implemented by the Applicant for the Construction and Operational Phase of the Proposed Project.

7.4.3.1 Applicant's Response

660. The Applicant is committed to delivering the CEMP and must do so already given the measures are relied upon within the EIAR. Therefore, the Applicant supports the spirit and intent of this proposed condition.
661. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.
662. The Applicant would note that the CEMP is not intended, and in practice cannot apply, to the operational phase as requested by the Council.

7.4.4 Reinstatement and Security of Temporary Construction Compounds

663. The prescribed body submission from Tipperary County Council raised concerns about the reinstatement and security of temporary construction compounds:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

664. This prescribed body submission stated that additional concerns relate to the reinstatement and security of temporary compounds. The submission raised concerns regarding the management of the temporary works sites until same are reinstated and handover is complete. The submission stated that the

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responsibility to ensure these sites do not become used for unauthorised development or as unauthorised encampments rests with the Applicant.

7.4.4.1 Applicant's Response

665. The Applicant agrees that it must maintain the security of the temporary works sites including the Construction Compounds and the Pipe Storage Depots until the land is handed back to the landowner.

7.4.5 Recommended Construction Phase Conditions from Tipperary County Council

666. The prescribed body submission from Tipperary County Council recommended conditions to be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

667. This prescribed body submission requested that the following condition be attached to any grant of planning:

- The CEMP shall incorporate measures to manage noise, vibration and dust, surface water drainage and traffic management during construction;
- A high level of monitoring and reporting on the CEMP will be required to ensure that the contractor reports any unexpected ecological findings and updates mitigation as necessary;
- Plans for Environmental Incident Response and for Reporting and Environmental Records that are described in the CEMP require additional details and commitments to demonstrate how the implementation of mitigation and monitoring measures will ensure that thresholds or criteria will not be exceeded, so that environmental effects do not exceed what has been predicted in the EIAR. The audit plan should be proactive rather than reactive, identifying action levels at which remedial actions will be triggered rather than aiming to address exceedances after they occur. It should also ensure transparency of compliance. This should ensure inter alia that auditing and monitoring results are presented in an accessible format and not require stakeholders to need to pour through lengthy sheets of data. Details of implementation and reporting should not be left to the discretion of the appointed contractor post consent;
- A condition to manage lighting;
- Construction works to be undertaken between 07:00-18:00hrs Monday to Fridays and between 08:00-14:00hrs on Saturdays, with no works on Sundays or public holidays. Deviation to be allowed in exceptional circumstances and only where written approval has been received from the Planning Authority;
- Condition to ensure adequate reinstatement of all construction compounds / pipe storage compounds and to manage these sites when vacated and prior to handover to landowner; and
- Adequate mitigation will be required throughout construction, particularly in sensitive areas along the proposed pipeline route, to avoid negative impacts to surrounding ecology and waterbodies. In addition, subsidence concerns (particularly in peat substrate) will require significant mitigation to protect local waterbodies. Specific risks requiring mitigation identified in the EIAR will require robust and ongoing management during construction and post-construction reinstatement.

7.4.5.1 Applicant's Response

668. In the event of a grant of permission, the Applicant will be bound by the conditions attached to the grant of permission, including compliance to the plans and particulars submitted with the planning application. This is a legal obligation. This will include adherence to, and compliance with, the mitigation measures

contained in the NIS, EIAR and CEMP. The Applicant is a state agency, carrying out water services on behalf of the state, including on behalf of local authorities. We are regulated and funded by central government and trust and transparency is integral to how we operate. The planning application and associated environmental data is robust. Care needs to be taken in over complicating planning condition compliances. Introducing additional, unnecessary steps such as identifying ‘action levels that may trigger actions’ or ‘pre-agreeing monitoring’, to regulate what will be a robust planning decision and associated conditions, needs to be carefully considered to avoid over-burdening a stretched planning sector and / or introducing uncertainty on discharging conditions and potential delays to construction of the project.

669. The Applicant is committed to ongoing consultation with Tipperary County Council throughout the development of the Proposed Project.
670. The Applicant would note that such conditions need to be related to the Working Hours as set out in the CEMP in Appendix A5.1 of Chapter 5 – Construction and Commissioning (which are slightly different to those quoted by the Council), or as per Working Hours conditioned by ACP in the event that the planning permission is granted. d.

7.4.6 Clarification on Response Plan for Leakages

671. The prescribed body submission from Tipperary County Council requested clarification on incident response for leakages during the Operational Phase:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

672. This prescribed body submission stated that the EIAR does not include details or proposals relating to a typical response time for detecting and fixing leaks. The submission continued that details and proposals relating to detecting and fixing leaks should be included in a Response Procedure which would be activated in the event of the occurrence of an incident. The submission further stated that the Applicant should detail a typical timeline for addressing leaks occurring in ecological hotspots versus less ecologically sensitive areas and clarification on this issue is sought. The submission also stated that it is not clear where alarms are situated along the pipeline, and clarification is required as to whether small leaks will be easily detected if they were located a significant distance from the position of the nearest sensor. In light of this, Tipperary County Council would welcome clarification insofar as this issue relates to County Tipperary.

7.4.6.1 Applicant's Response

673. Regarding the pipeline itself, coated steel has been selected as the pipeline material as catastrophic failures on steel pipelines are extremely rare and this is described in Chapter 3 (Consideration of Reasonable Alternatives) in the EIAR.
674. The Applicant has set out in the EIAR in Chapter 4 (Proposed Project Description) and Appendix A4.1 (Operational Strategy) the measures in place to monitor the pipeline, specifically the use of Cathodic Protection as set out in 4.13.6 and 4.13.11 of Chapter 4 (Proposed Protection Description) in the EIAR.
675. Significant leaks are detected immediately by the flow monitoring equipment and the pipeline can be remotely shut down. Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur. Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners is minimised.

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676. Any smaller less significant leaks would be picked up during routine inspections or reported by landowners. For the whole of the Proposed Project pre-emptive monitoring and inspections will be carried out routinely to allow the Applicant to identify and address any potential issues before they arise.

677. Therefore, the Applicant does not consider that there is a typical response time for detecting / fixing leaks. The selection of the materials, as described in Chapter 3 (Consideration of Reasonable Alternatives) of the EIAR and the operational strategy, including the use of Cathodic Protection, as described in Chapter 4 (Proposed Project Description) of the EIAR and the Strategy itself in Appendix 4.1 are based on preventing leaks from occurring.

7.4.7 Adequacy of Mitigation Measures in the Construction Environmental Management Plan

678. The prescribed body submission from Tipperary County Council raised concerns about the adequacy of mitigation measures in the CEMP:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

679. This prescribed body submission stated that the level of specification of many of the proposed measures leaves them open to interpretation, which may fail to ensure that they are effective in practice, for example:

- Construction Phase auditing is referred to in the CEMP (Appendix A5.1) however, the CEMP states '*The Contractor will inform Uisce Eireann of any pre-determined thresholds or criteria that are exceeded*'. Details of implementation and reporting should not be left to the discretion of the appointed contractor post consent.

680. The submission continued that the consent process should ensure that procedures are in place to ensure that the designs of any elements that are unspecified at this time are subject to specified and transparent approval procedures in order to ensure that environmental effects do not exceed those predicted in the EIA process.

7.4.7.1 Applicant's Response

681. The Applicant agrees with the Council that monitoring requirements need to be clear and enforceable. The provision states that 'any exceedance' of pre-determined thresholds / criteria must be reported and this is what will be required during construction.

7.4.8 Excessive Land-Take at the Water Treatment Plant Site

682. The prescribed body submission from Tipperary County Council raised a concern in relation to land take at the proposed WTP site:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

683. This prescribed body submission stated that the five-year construction phase would result in substantial disruption, including extensive land-take at the WTP site.

7.4.8.1 Applicant's Response

684. The Applicant recognises the large scale of the Proposed Project, including specifically the size of the Water Treatment Plant and the duration of the construction works at that site. The application explains the criteria used to select the location for the infrastructure sites and the routing of the pipeline primarily

in EIAR, Chapter 3 (Consideration of Reasonable Alternatives). The extent of the sites both permanent and temporary have been explained in EIAR, Chapter 4 (Proposed Project Description) and Chapter 5 (Construction and Commissioning) and these are supported by figures showing the temporary and permanent layouts including for the Water Treatment Plant in Figure 4.61 – Proposed Site Layout Plan and Figure 5.2 – Indicative Site Compound Plan.

685. The duration of the construction has been set out in the EIAR and assessed within the topic chapters.

7.4.9 Adequacy of Design Information Regarding Temporary Access to the Strategic Road Network

686. The prescribed body submission from TII raised concerns regarding design reports for temporary accesses to the strategic road network:

Unique ID	Name of Prescribed Body
WSP_SUB_99	Transport Infrastructure Ireland

687. The prescribed body submission from TII stated that:

“This TII Publication Standard sets out the procedures to be followed for the technical aspects of the Design Phase of scheme types including development led schemes. TII Publication (Standards) DN-GEO-03030 requires the preparation and submission of a Design Report to TII for agreement. Crucially, section 8 of the Standard states: “Statutory Planning Procedures (Phase 4J should not commence prior to the review and satisfactory responses to any comments from TII of the Design Report.”

688. TII requested that design reports be submitted.

689. In addition, TII requested:

- A revised proposed project boundary site layout as indicated on Treated Water Pipeline (Pumped) Plan and Longitudinal Section drawings Sheets 4 and 5 be overlain at an appropriate scale with the MMARC maintenance boundary to enable assessment of any overlap.
- Based on the outcomes of the revised site layout TII recommends that the applicant revise the EIAR documentation to take account of any proposals/works/actions which will be undertaken within the to the EIAR and MMaRC Network Area B.

7.4.9.1 Applicant’s Response

690. TII has requested further information in respect of the temporary accesses and an overlay of the Motorway Maintenance and Renewal Contractor (MMaRC) maintenance boundary on the long section. In response to this submission the Applicant is planning further engagement with TII. The Applicant can prepare these documents if ACP considers it appropriate.

691. The Applicant does not agree that the overlay of the MMaRC is a matter for a revised EIAR as there are no new or different likely significant effects arising from this interface from those already reported in the EIAR submitted with the SID planning application, as the overlap is small and the environmental effects have already been considered as part of the assessment reported in the EIAR.

692. The Applicant notes that there were overlaps in requests from TII for further information related to construction matters, Road Safety Audits and settlement which due to the structure of this report are considered in Chapter 7 – Construction and Commissioning, Chapter 9 – Traffic and Transport and Chapter 21 – Material Assets. These responses should be considered in conjunction with one another.

8. Noise and Vibration

8.1 Overview

693. Twenty-seven of the 114 submissions raised the issue of noise and vibration in relation to the Proposed Project.

694. An assessment of noise and vibration was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 6 – Noise & Vibration. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.

695. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding noise and vibration. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:

- Chapter 6 Project Description;
- Chapter 7 Construction & Commissioning;
- Chapter 9 Traffic and Transport; and
- Chapter 18 Human Health.

696. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.

697. The majority of submissions were in relation to noise impacts during construction of the Proposed Project, which have been assessed in the EIAR and appropriate mitigation measures proposed.

698. This Chapter is structured around the following sections:

- General matters raised in all general observer and Prescribed Body submissions regarding noise and vibration;
- Specific matters raised in general observer submissions regarding noise and vibration; and
- Specific matters raised by Prescribed Bodies regarding noise and vibration.

699. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.

8.2 Response to General Issues Raised

8.2.1 General Noise Impacts Associated with the Proposed Project

700. The following submissions raised concerns about the potential for general noise impacts as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_16	Joanne Skehan

Unique ID	Name of Individual or Organisation
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_72	Carol Killeen
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne
WSP_SUB_114	Tipperary County Council

8.2.1.1 Applicant's Response

701. The submissions relate to the potential noise impacts from constructing the Proposed Project. A construction noise assessment was carried out and reported in EIAR Chapter 6 – Noise & Vibration. This assessment considered the full range of construction related noise sources associated with the Proposed Project, including noise from construction activities along the Proposed Project, construction related vibration and noise from construction traffic movements.

702. The noise assessment reported in EIAR Chapter 6 – Noise & Vibration is based on a number of recognised best practice guidelines, including British Standard (BS) 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Noise, Design Manual for Roads and Bridges (DMRB) LA 111 Noise and Vibration, and the TII Noise Guidelines (TII 2014), all of which are considered appropriate for the Proposed Project. Construction noise thresholds for the Proposed Project have been set in accordance with these guidance documents, taking into account the nature of the works and where relevant the characteristics of the receiving environment.

703. The assessment presented within EIAR Chapter 6 – Noise & Vibration concluded that prior to the implementation of mitigation measures, there would be potential for likely significant effects on noise levels due to constructing the following elements of the Proposed Project:

- Set up of Construction Compounds and Pipe Storage Depots where there are noise sensitive locations (NSL) with 50m of these sites;
- Termination Point Reservoir;
- Road construction at the south-west perimeter of Peamount Hospital;
- Piling at one location along the pipeline between chainages TWB – 24500 and TWB – 25000; and
- Night-time works at trenchless crossings where there are NSL within 220m of the works, and where the duration of the works would exceed 10 nights in any 15 consecutive night period

704. Mitigation measures for noise are outlined in Section 6.5 of EIAR Chapter 6 and within the Noise and Vibration Management Plan (NVMP) (Annex D of EIAR Appendix A5.1 – Construction Environmental Management Plan (CEMP)). The NVMP will be updated by the Appointed Contractor(s) and included in

future updates of the CEMP prior to the commencement of works. The NVMP will be divided into site specific measures for each of the major infrastructure sites (i.e. RWI&PS, WTP, BPT, BPS, FCV and TPR) and the pipeline route. Key examples of mitigation measures include, but are not limited to:

- Selection of low noise and low vibration plant and equipment, where feasible;
- Employ best means practicable, including proper maintenance of plant, to reduce the noise produced by on-site operations;
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract;
- For all materials handling, the appointed Contractor will implement best practice site noise control measures including prohibiting materials from being dropped from excessive heights and using drop chutes/dump trucks that are lined with resilient materials;
- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use;
- Noise screening, including site perimeter screening and localised screening around noisy plant or activities, will be used and careful planning of the construction site layout will be considered, using site buildings, such as offices and stores, as provide further noise screening;
- Ongoing contact with local residents shall be maintained to ensure any complaints relating to construction noise for the project from local residents can be addressed. Prior to any particularly noisy activities, local residents will be contacted in order to reduce the perceived noise impact; and
- A designated noise liaison officer will be appointed by the Contractor(s) during construction works. All noise complaints will be logged and followed up in a prompt fashion by the liaison officer.

705. In addition to these mitigation measures, there is a general commitment to keep construction noise levels below the thresholds set out in Section 6.2.6.1 of EIAR Chapter 6 and Section 1.4 of the NVMP (notwithstanding the elements for the Proposed Project that would result in likely significant effects due to exceeding these thresholds).

706. Noise monitoring will be undertaken during construction at NSLs to monitor noise levels against these thresholds (as set out in Section 1.5.6 of the NVMP). Noise monitoring will be conducted in accordance with ISO 1996-1:2016 Acoustics – Description, Measurement and Assessment of Environmental Noise – Part 1: Basic Quantities and Assessment Procedures (ISO 2016); and ISO 1996-2:2017 (ISO 2017). The selection of monitoring locations will be based on the nearest NSLs to the working area which will progress along the length of the Proposed Project. Where noise monitoring indicates an exceedance of the applied construction thresholds, the adopted mitigation on-site will be reviewed and improved where feasible.

707. Mitigation measures will be effective at reducing noise below levels that would result in significant effects for the majority of NSLs. However, following the implementation of mitigation measures, there would be likely significant residual effects during construction at the following locations (see Section 6.6 of EIAR Chapter 6 – Noise & Vibration):

- Three NSLs within 50m of the Pipe Storage Depot at Carrigatogher, one NSL within 50m of the Pipe Storage Depot at Graiguepottle, and one NSL within 50m of the Pipe Storage Depot at Barberstown Upper. These effects would only occur during the setup of the Pipe Storage Depots and would therefore have a temporary duration (i.e. less than one year); and
- 36 NSLs within 190m of night-time trenchless crossing works where the duration of works would exceed 10 nights in any 15 consecutive night period. These effects would only occur during the pipe installation and backfilling phases of the works and would therefore have a temporary duration.

8.3 Response to Specific Issues Raised in General Observer Submissions

8.3.1 Potential Construction Noise Impacts at Specific Landowner Lands

708. Four general observer submissions raised specific issues relating to potential noise impacts at specific landowner lands as a result of the construction of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_74	John Hensey
WSP_SUB_90	James Waldron (Corr Property Consultants on behalf of)
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

709. The general observer submission from John Hensey raised concerns about the potential noise impacts resulting from the construction works on his land, in addition to the construction depot that will be located in close proximity, and the subsequent construction traffic and pipe haulage from the depot on the local road beside the farm.

710. The general observer submission from James Waldron raised concerns about the potential construction noise impacts on his property, and particularly on the highly sensitive equine stock on the property.

711. The general observer submissions from John Quinn and Sandra Frayne, and Robert Frayne, raised concerns about the potential impact of construction noise on their ability to work from home, in addition to their sensitive equine stock and other wildlife on their property.

8.3.1.1 Applicant's Response

712. In relation to the submission from John Hensey, the Construction Compound in question is the principal compound at Lisgarraff. As explained in Section 6.4.2.1.1 of EIAR Chapter 6 - Noise & Vibration, there would be no likely significant noise effect from this compound due to the distance between the compound and the nearest NSL. Regardless, standard best practice mitigation will apply at this compound to reduce noise levels, including but not limited to the use of hoarding as noise screening around the perimeter of the compound (as set out in Section 6.5 of EIAR Chapter 6 – Noise & Vibration, and summarised in Section 8.2.1 of this report). The submission also raises concerns in relation to traffic using the Haul Road next to the farm. The Haul Road in this area is the N52 (also referred to as Link H in the traffic assessment in EIAR Chapter 7 – Traffic and Transport), which is a national road. As set out in Table 7.46 of EIAR Chapter 7, this road is expected to experience a 10% increase in annual average daily traffic using the road, and an 8% increase in the proportion of heavy vehicles using the road, during peak periods of the construction phase. As explained in Section 6.4.2.1.14 of EIAR Chapter 6 – Noise & Vibration, this would result in a noise increase of less than 3 dB, which is considered a minor impact and therefore there would be no likely significant noise effect in relation to construction traffic noise.

713. The submission from James Waldron relates to noise impacts on horses at Drumachon Stud. Drumachon Stud has been assessed as an equine farm in EIAR Chapter 11 - Agriculture and was subject to a site visit and assessment from an equine specialist (Equine Veterinary Consultancy). As set out in EIAR Appendix A11.2 - Table of Impact Assessment - Pipeline Infrastructure, the farm would experience a moderate agricultural effect during construction, which is a significant effect. However, this would be primarily the result of the installation of electricity poles for a power connection, which would impact the farm due to land take and land separation, rather than impacts from noise. The farm is located approximately 100m from the Construction Working Width of the pipeline construction, with substantial screening in the form of hedgerows between the construction works and farm. At this distance, noise effects on horses are considered unlikely, based on the advice from the equine specialist. Mitigation is

proposed in the form of temporary berms of soil along the pipeline trench to add another layer of noise and visual screening. The standard best practice measures for reducing noise summarised in Section 8.2.1 of this report will also apply. It is the opinion of the equine specialist that the horses would tend to habituate to the construction noise quickly once they recognise that these stimuli (noises) are far enough away not to cause them any direct harm but it is recognised there may be a requirement to move individual horses to the other side of the farm (away from the construction works) if they do not habituate.

714. The submissions from John Quinn and Sandra Frayne, and Robert Frayne, relate to noise impacts on horses at Lyreen Farm. Lyreen Farm has been assessed as an equine farm in EIAR Chapter 11 - Agriculture and was subject to a site visit and assessment from an equine specialist (Equine Veterinary Consultancy). As set out in EIAR Appendix A11.2 - Table of Impact Assessment - Pipeline Infrastructure, the farm would experience a moderate agricultural effect during construction, which is a significant effect. This would be partially due to noise effects. Mitigation for the noise impact will include the erection of a temporary noise barrier on the southern boundary of the Construction Working Width as it crosses Lyreen Farm to provide noise and visual screening. Soil from the excavation will also be placed on the western side of the pipeline trench to provide further noise and visual screening. The standard best practice measures for reducing noise summarised in Section 8.2.1 of this report will also apply. There would still be a short-term significant residual effect for the duration of construction works in this area. As such, and in line with the recommendation of the equine specialist, the Applicant is in active discussions with the landowners in relation to temporarily removing the resident horses from the farm for the duration of construction works in this area. The submission also raised concerns regarding the ability to work from home due to construction noise. The residential property is located more than 100m from the Construction Working Width. As set out in Section 6.4.2.1.11 of EIAR Chapter 6 – Noise & Vibration, there is no potential for a residual significant noise effect beyond a distance of 35m from the pipeline construction works. It is also worth noting that the construction calculations within EIAR Chapter 6 – Noise & Vibration are highly conservative and assume all items of plant operating in one working area. In practice, the pipeline construction works would progress along the linear route, with plant operating at various distances, which would further reduce noise effects at the property in question. There would therefore be no likely significant noise effect on the residential property arising from construction noise.

8.3.2 Potential Noise and Vibration Impacts from the TPR on Peamount Healthcare

715. The general observer submission from Peamount Healthcare raised concerns about potential construction noise impacts on the patients and staff at Peamount Hospital.

Unique ID	Name of Individual or Organisation
WSP_SUB_104	Peamount Healthcare

716. The submission stated that it is anticipated that the proposed excavation, subsequent building work and ongoing maintenance and plant operation will significantly increase noise levels experienced by residents, patients and staff across the Peamount Healthcare campus, and that it will also cause vibration.
717. The submission also noted that the effect that this may have on residents in St Brid's, Neuro Disability residential and Neuro Rehabilitation Unit. This general observer submission stated that the Noise and Vibration assessment in the EIAR inadequately characterises the sensitivity of Peamount Hospital and its patients.
718. The submission also stated that, due to the presence of four protected structures on-site, stricter vibration limits based on the German standard DIN 4150 for structures of great intrinsic value and particularly sensitive to vibration should be used instead of the limits proposed in the planning application.

8.3.2.1 Applicant's Response

Misclassification of Noise Sensitive Receptors Response

719. A site visit to Peamount Hospital was undertaken on 17 October 2024 with the project team and Peamount Hospital facilities team to identify which buildings were currently occupied and noise sensitive and to discuss the likely distances of construction works associated with the TPR works to the nearest NSLs. St Brid's was identified as the nearest NSL building within Peamount Hospital to the TPR works, and all calculations were undertaken at the closest distance between this building and the likely TPR works. This approach ensured the most conservative assessment for Peamount Hospital was undertaken as all other sensitive buildings are set back at further distances to those assessed in the EIAR.
720. With regard to the vibration assessment, the residential receptors at Peamount Hospital have been considered highly sensitive (as all other human receptors have been). No differentiation, in terms of sensitivity was applied for residents of the hospital compared with other residential receptors.
721. All NSLs identified in the EIAR are treated as high sensitivity and are assessed on the same basis against the criteria within EIAR Chapter 6 – Noise & Vibration. The noise assessment reported in EIAR Chapter 6 is based on a number of best practice guidelines, including British Standard 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Noise, Design Manual for Roads and Bridges LA 111 Noise and Vibration, and the TII Noise Guidelines, all of which are considered appropriate for the Proposed Project based on our professional expertise.
722. In relation to the noise impacts from constructing the TPR, the methodology in Section 6.2.6.1.2 of EIAR Chapter 6 – Noise & Vibration is deemed appropriate to assess the likelihood of significant effects. The approach adopted requires the designation of a NSL into a specific category (A, B or C) based on existing ambient noise levels in the absence of construction noise. This then sets a threshold noise value (CNT) that, if exceeded at the location, indicates a potential significant noise effect from the construction activities, depending on the context. This method is based on British Standard 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Noise, which is a widely used standard for assessing and managing construction noise on sensitive receptors, including buildings in health or community use, such as hospitals. The NSLs within Peamount Hospital have been assigned the most stringent daytime noise threshold of 65 dB $L_{Aeq,T}$ from this standard reflecting the measured existing baseline noise environment at the site and also reflecting the sensitivity of the facility. This best practice methodology recognises that while construction noise may represent a measurable change relative to baseline, levels at or below the CNT fall below the level at which significant adverse effects would occur. Accordingly, although a change from baseline may be perceptible, the guidance in EIAR Chapter 6 provides a basis for concluding that construction noise below or equal to the CNT would not give rise to significant adverse effects, which aligns with accepted best practice and definitions of significance.
723. In addition to the hospital being fully considered within the noise and vibration impact assessment, it was also fully considered with regard to effects on human health in EIAR Chapter 15 – Human Health. As discussed within EIAR Chapter 15, Peamount Hospital is considered as a highly sensitive receptor and the results of the noise and vibration impact assessment informed the assessment of likely significant health effects. This topic is responded to further in Chapter 18 – Human Health of this report.
724. While the construction noise assessment within EIAR Chapter 6 – Noise & Vibration applies recognised threshold-based criteria for the purposes of determining the likely significant environmental effects, it is acknowledged that Peamount Hospital includes specialist neurological and long-term residential units that are particularly sensitive to disturbance. For this reason, mitigation will be implemented as included within the NVMP (Annex D of EIAR Appendix A5.1 – Construction Environmental Management Plan), including planning of site layout, boundary hoarding and localised screening and restriction of particularly

noisy activities during sensitive periods. A real focus of mitigation at this location will include real-time monitoring at hospital-adjacent locations and ongoing liaison with Peamount Hospital. These measures will ensure that construction activities are implemented in a manner that affords appropriate protection to vulnerable patients, beyond that required solely to demonstrate the absence of likely significant environmental effects.

Construction Noise Response

725. In relation to construction noise, the main activities that would have likely significant effects on the NSLs within the Peamount Hospital site are the construction of the TPR and the construction of the associated access road. In the absence of mitigation, there would be likely significant effects from these activities as described in EIAR Chapter 6 – Noise & Vibration.
726. The Peamount Hospital Campus is set out across an extensive suite of buildings and areas. A portion of the proposed TPR site is located adjacent to the closest hospital buildings, however, a large proportion of the construction works associated with the TPR are set back at significant distances from the hospital buildings. All construction noise calculations within EIAR Chapter 6 – Noise & Vibration are calculated at the nearest NSL within Peamount Hospital (St Brid's Neurological Unit) from any construction activity. NSLs within Peamount Hospital vary in distance from approximately 15m to 300m from the Planning Application Boundary. The TPR site is situated to the north of the hospital site with limited construction activities required within the southern portion of the TPR site closest to the nearest NSLs. Regardless of this, mitigation as outlined within Section 6.5.2.1 of EIAR Chapter 6 – Noise & Vibration will be implemented to reduce noise levels at all NSLs within Peamount Hospital.
727. Standard best practice mitigation measures outlined within Section 6.5.2.1 of EIAR Chapter 6 – Noise & Vibration and the NVMP (Annex D of EIAR Appendix A5.1 – Construction Environmental Management Plan) is summarised in Section 8.2.1 of this report. These include, but are not limited to, careful planning of site layout, boundary hoarding and localised screening, restriction of particularly noisy activities during sensitive periods, real-time monitoring at hospital-adjacent locations, and ongoing liaison with Peamount Hospital.
728. All relevant mitigation measures will be utilised to reduce construction noise levels at NSLs within the Peamount Hospital site. Section 1.5.3 of the NVMP sets out the parameters of the noise screening to be applied.
729. With these mitigation measures in place, predicted construction noise levels would be below the stringent construction noise thresholds set out in Section 6.2.6 of EIAR Chapter 6 – Noise & Vibration, and therefore there would be no likely significant environmental effects arising from construction noise when assessed against these thresholds. Ongoing monitoring and liaison with Peamount Hospital will be carried out throughout the construction phase to ensure that the implemented mitigation measures remain effective and appropriate. The potential health effects of these noise levels are further considered in Chapter 18 – Human Health of this report.
730. The submission from Peamount Hospital also raises concerns that there would be an increase in noise from construction traffic. This was assessed in the EIAR. The construction traffic that would use the Haul Road associated with the TPR (i.e. the R120 Road) in addition to the associated effects on traffic is addressed in Section 9.3.1 of Chapter 9 – Traffic and Transport of this report. In terms of noise impacts, the assessment set out within EIAR Chapter 7 – Traffic and Transport determined that there would be an imperceptible increase in traffic as the change in annual average daily traffic using the R120 Road as a result of the Proposed Project would only be 2%, and there would be a 0% change in the proportion of heavy vehicles using the R120 as a result of the Proposed Project. As explained in Section 6.4.2.1.14 of EIAR Chapter 6 – Noise & Vibration, this would result in a noise increase of less than 3 dB, therefore there would be no likely significant noise effect.

731. In relation to noise impacting Peamount Hospital during the Operational Phase, as explained in Section 6.4.4.1.3 of EIAR Chapter 6 – Noise & Vibration, there would be no likely significant effect from noise as a result of operating the TPR. Operational noise levels during the night-time period are predicted to be less than 35 dB $L_{Aeq,8hr}$, external to the closest NSL, which is equivalent to noise levels experienced within in a quiet bedroom (see illustrative noise levels given in EIAR Appendix A6.2 - Fundamentals of Acoustics). Notwithstanding this, at the detailed design stage, consideration will be given to the selection of plant so that infrastructure sites will operate within the criteria set out in Section 6.2.6.3 of EIAR Chapter 6 – Noise & Vibration.

Construction Vibration Response

732. The prediction of construction vibration from sources of piling and trenchless construction techniques (tunnelling) was made using empirical formulas provided in BS 5228-2, however, BS 5228-2 does not provide a method for predicting groundborne vibration arising during rock breaking activities (unlike piling and tunnelling). As such, the hydraulic breaker method given in Caltrans (2013) was adopted. A conservative assessment approach was adopted, with a large excavator mounted hydraulic breaker assumed for all predictions. This prediction method, as per those in BS 5228-2, predicts a Peak Particle Velocity (PPV) vibration level at the receptor location.
733. Vibration limits for hospital buildings are not presented in BS 5228-2. Though the Standard does identify that operating theatres and sensitive equipment may be subject to lower thresholds. The presence and location of such equipment can change over time; therefore, this is something that would be considered by the appointed construction contractor through consultation with the hospital and local authority.
734. Further, in practice the vibration assessment focused on removing the risk of a vibration effect, in accordance with the mitigation hierarchy, which prioritises avoidance where that can be achieved as set out in the overarching EIA methodology. This is addressed further in the section below.
735. The submission from Peamount Hospital highlights that there are four protected structures, and another building of significant historical interest, within the hospital site. These structures are identified as sites of architectural heritage in Table 17.116 of EIAR Chapter 17 - Cultural Heritage. These sites are outside of the Planning Application Boundary and would be screened by vegetation and the TPR embankment during operation, therefore there is no potential for likely significant effects on the architectural significance of these structures, and these are not considered further in the cultural heritage assessment.
736. In terms of the effect of vibration on these structures, it is recognised in EIAR Chapter 6 - Noise & Vibration that there are sensitive receptors within the hospital site within 50m of the Planning Application Boundary that could be impacted by construction vibration. In the south-eastern part of the TPR there would be proposed works to support drainage and utility connections. However, given the sensitivity of the receptors adjacent to this area, embedded mitigation has been incorporated into the design of the Proposed Project so that no works would be undertaken that would require rock breaking to be undertaken within the land adjacent to the hospital and other receptors along the eastern side of the site.
737. The assessment undertaken identified that by avoiding rock breaking activities within approximately 50-55m of the Planning Application Boundary and approximately 60-65m of the receptors in the South Eastern Corner of the TPR site there would no significant effects on the residents of the hospital. The exact buffer will be confirmed as part of the construction method statement when the proposed methodology and equipment have been identified. Therefore, the mitigation was defined simply, as being no rock breaking to be undertaken. In essence this requires the Contractor to either, not use rock breaking techniques to undertake the works within that buffer if that would result in a vibration level above 1mm/s PPV or to move the location of the works (principally utility diversions) so that they would be further from the receptors. This embedded mitigation is included in the description of construction activities at the TPR in Section 5.22.2.3 of EIAR Chapter 5 - Construction & Commissioning.

738. While the assessment uses 8mm/s peak particle velocity (PPV) as the threshold for a potential significant structural effect from vibration, the sensitive receptors at Peamount Hospital have been assessed in terms of the disturbance to occupants of the buildings, which uses a lower threshold of 1mm/s PPV (as set out in Table 6.9 of EIAR Chapter 6 – Noise & Vibration). This is lower than the 3mm/s PPV threshold recommend in the submission.
739. Given the distance between the construction works and the sensitive receptors within the hospital site, and the embedded mitigation described above, vibration levels at these receptors would not exceed 1mm/s PPV. Therefore, as stated in Section 6.4.2.3.1 of EIAR Chapter 6 (Noise & Vibration), the disturbance to humans from vibration arising at the TPR would be short term, negative and Not Significant to Slight and consequently, the effect would not be significant.
740. Regardless of this conclusion, and as set out in the Noise and Vibration Management Plan (Annex D of EIAR Appendix A5.1 – Construction Environmental Management Plan), where rock breaking is proposed by the contractor, a pre-construction assessment will need to be undertaken by the Contractor to confirm that the selected methodology would not result in significant effects at receptors. If this identifies that there would be 10 or more days or nights in any 15 consecutive days or night period of a vibration impact above 1mm/s PPV then an alternative methodology will be considered by the Contractor. This will include consideration of alternative equipment options, such as using a rockwheel trencher (e.g. the Vermeer T655-III Trencher) instead of an excavator-mounted hydraulic breaker.

8.3.3 Potential Operational Noise Impacts from the Water Treatment Plant

741. The following observer submissions raised a specific issue relating to noise resulting from the operation of the proposed WTP:

Unique ID	Name of Individual or Organisation
WSP_SUB_52	John Sadlier
WSP_SUB_93	Michael McKeogh

742. The general observer submission from John Sadlier raised concerns about the potential noise from pumps in the proposed WTP that will be heard during the day and particularly night. The submission continued that this will be located in a quiet country area and such noise will be easily heard, and significant measures are required to reduce this. The submission further stated that noise from vehicular traffic delivering supplies, removing sludge etc. from the proposed WTP will also be an issue.
743. The general observer submission from Michael McKeogh states that, having regard to the scale of the proposed treatment plant, local residents will be adversely affected by noise associated with the facility. Inadequate mitigation measures have not been proposed to protect residents from these effects.

8.3.3.1 Applicant's Response

744. As explained in Section 6.4.4.1.3 of EIAR Chapter 6 – Noise & Vibration, the WTP site is situated approximately 300m from the nearest NSL. Noise surveys were undertaken within the vicinity of the WTP to characterise the existing noise environment, the results of which are included within EIAR Chapter 6 – Noise & Vibration. These surveys indicate low levels of noise during the day, evening and night-time periods at the locations representative of the WTP.
745. On this basis, and in order to adopt a conservative assessment approach, the nearest NSLs have been assessed against the lowest applicable thresholds for both the construction phase and operational phases of the Proposed Project in accordance with the criteria outlined within Sections 6.2.6.2 and 6.2.6.3 of EIAR Chapter 6 – Noise & Vibration.

746. The WTP site comprises of several buildings and processes that house mechanical plant with the potential to emit noise to the surrounding environment. In addition, the site includes provision for a 38 kV electricity substation, switch gear building and external pumping stations. A noise model for the site has been produced considering the buildings and plant on-site as well as the electricity substation. EIAR Figure 6.7 presents the predicted noise contours for the WTP. The calculations undertaken are conservative and are based on the assumptions outlined in EIAR Appendix A6.4 - Noise Modelling Details and Assumptions.

747. The WTP is predicted to produce operational noise levels outside the closest NSL in the order of 35 dB _{LAeq,8hr} during the night-time period. This level is in line with the significance thresholds presented within Table 6.11 in EIAR Chapter 6 – Noise & Vibration. There would therefore be no likely significant effect from the WTP during the Operational Phase. To put this into context, 35 dB is equivalent to the noise level in a quiet bedroom (see EIAR Appendix A6.2 - Fundamentals of Acoustics). Notwithstanding the above, the EIAR also sets out that, at the detailed design stage, appropriate consideration will be given to the selection of plant and facade elements so that the infrastructure site will operate within the proposed criteria set out in Section 6.2.6.3 of EIAR Chapter 6 – Noise & Vibration.

748. Operational traffic associated with the WTP is addressed in Section 9.3.2 of Chapter 9 – Traffic and Transport of this report. As set out in Section 6.4.4.1.5 of EIAR Chapter 6 – Noise & Vibration, the nature of the Proposed Project is such that the additional traffic generated during the Operational Phase would primarily relate to the employee and personnel vehicle movements between shift changes and also the transportation of residual water sludge from the WTP. For a significant effect to occur, an increase of +3 dB in traffic noise levels would have to occur. The operation of the WTP would not generate sufficient traffic to result in an increase of + 3 dB or more on the assessed road links and would therefore not result in a likely significant effect on noise from operational traffic.

8.3.4 Potential Operational Noise Impacts from the Break Pressure Tank

749. The following observer submissions raised a specific issue relating to noise resulting from the operation of the proposed BPT:

Unique ID	Name of Individual or Organisation
WSP_SUB_76	Melissa Anne Kenny

750. The general observer submission from Melissa Anne Kenny states that local residents will be adversely affected by noise associated from the BPT. Inadequate mitigation measures have been proposed to protect the adjoining residents from these effects.

8.3.4.1 Applicant's Response

751. As explained in Section 6.4.4.1.3 of EIAR Chapter 6 – Noise & Vibration, the BPT site is situated approximately 280m from the nearest NSL. Noise surveys were undertaken within the vicinity of the BPT to characterise the existing noise environment, the results of which are included within EIAR Chapter 6 – Noise & Vibration. These surveys indicate low levels of noise during the day, evening and night-time periods at the locations representative of the BPT.

752. On this basis, and in order to adopt a conservative assessment approach, the nearest NSLs have been assessed against the lowest applicable thresholds for both the construction phase and operational phases of the Proposed Project in accordance with the criteria outlined within Sections 6.2.6.2 and 6.2.6.3 of EIAR Chapter 6 – Noise & Vibration.

753. The BPT site includes provisions for both solar and Battery Energy Storage Systems which have the potential to generate noise to the surrounding environment. A noise model for the site has been produced considering the buildings and plant on-site. EIAR Figure 6.8 presents the predicted noise contours for the BPT. The calculations undertaken are conservative and are based on the assumptions outlined in EIAR Appendix A6.4 - Noise Modelling Details and Assumptions.
754. The BPT is predicted to produce operational noise levels outside the closest NSL in the order of 30 dB $L_{Aeq,8hr}$ during the night-time period. This level is in line with the significance thresholds presented within Table 6.11 in EIAR Chapter 6 – Noise & Vibration. There would therefore be no likely significant effect from the BPT during the Operational Phase. To put this into context, 30 dB is equivalent to the noise level in a quiet bedroom (see EIAR Appendix A6.2 - Fundamentals of Acoustics). Notwithstanding the above, the EIAR also sets out that, at the detailed design stage, appropriate consideration will be given to the selection of plant and facade elements so that the infrastructure site will operate within the proposed criteria set out in Section 6.2.6.3 of EIAR Chapter 6 – Noise & Vibration.

8.4 Response to Specific Issues Raised by Prescribed Bodies

8.4.1 Potential Noise Impacts at Peamount Hospital

755. The prescribed body submission from the HSE raised a specific issue relating to potential noise impacts at Peamount Hospital:

Unique ID	Name of Prescribed Body
WSP_SUB_94	Health Service Executive (HSE) - National Office for Environmental Health Services

756. The prescribed body submission states that the noise assessment includes monitoring measures without defining the appropriate trigger levels. Given the noise effects from the Proposed Project, the submission also state that a specific noise mitigation plan should be formed in consultation with Peamount Hospital.

8.4.1.1 Applicant's Response

757. The HSE submission contains issues raised by Peamount Hospital in relation to noise impacts during the Construction Phase. The response to these issues, in terms of noise effects and mitigation measures, is included in Section 8.3.2 of this report. The NVMP (Annex D of EIAR Appendix A5.1 – Construction Environmental Management Plan) sets out the measures that will be used by the Contractor(s) to manage noise and vibration generated by the construction of the Proposed Project. These measures will ensure that construction activities are implemented in a manner that affords appropriate protection to vulnerable patients, beyond that required solely to demonstrate the absence of significant environmental effects. As set out in Section 1.1 of the NVMP, the NVMP will be updated by the Contractor(s) and included in future updates of the CEMP, as appropriate and necessary, prior to commencement of works in accordance with the requirements of the CEMP. The NVMP will be divided into site specific measures for each of the major infrastructure sites (i.e. RWI&PS, WTP, BPT, BPS, FCV and TPR) and the pipeline route, or alternatively, separate NVMPs may be prepared for each project element. The NVMP for the TPR will contain the measures specific to managing the noise impact on Peamount Hospital and the NSLs within the Hospital itself, based on the measures in Annex D of EIAR Appendix A5.1 as a minimum, and this will be developed in consultation with Peamount Healthcare.
758. The trigger levels are defined in Section 1.5.6 of the NVMP and are the same as the significance thresholds set out in Section 6.2.6 of EIAR Chapter 6 – Noise & Vibration. As stated in the NVMP – *'During the Construction Phase, noise and vibration monitoring will be undertaken at the NSLs and vibration sensitive buildings to ensure construction noise and vibration thresholds outlined in Section 1.4 [of the NVMP] are not exceeded. Noise monitoring will be conducted in accordance with the ISO 1996–1 (ISO 2016) and ISO 1996–2 (ISO 2017). The selection of monitoring locations will be based on the*

nearest NSLs to the working area which will progress along the length of the Proposed Project. Where noise monitoring indicates an exceedance of the applied construction thresholds, the adopted mitigation on-site will be reviewed and improved where feasible’.

8.4.2 Planning Conditions Specific to the Kildare County Council Area

759. The prescribed body submission from Kildare County Council recommended a number of noise-related conditions for proposed works within Kildare County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

760. This prescribed body submission requested the following noise-related conditions be attached to any grant of planning for the Proposed Project:

- Noise from construction shall not give rise to sound pressure levels measured at noise sensitive locations which exceed 70dB(A) ($L_{Aeq\ 1\ hour}$) between 08:00hrs and 18:00hrs Monday to Friday, and 08:00hrs and 13:00hrs on Saturdays and sound levels from development works shall not exceed 45dB(A) ($L_{Aeq\ 1\ hour}$) at any other time; and
- The Applicant shall use Best Practice Measures to prevent / minimise noise during the Construction and Operational Phases, through the provision of proper maintenance, use and operation of all machinery to the satisfaction of the Planning Authority.

8.4.2.1 Applicant's Response

761. The Applicant acknowledges the recommended conditions and requirements within the submission from Kildare County Council. The Applicant is committed to ongoing consultation with Kildare County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. However, the Applicant notes that the recommended conditions are not wholly consistent with the measures outlined in the EIAR, as explained in the following paragraphs. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

762. The working hours suggested by Kildare County Council are not consistent with the working hours set out in the Proposed Project EIAR. The working hours for the Proposed Project are set out within EIAR Chapter 5 - Construction & Commissioning and are 07:00 – 19:00 Monday to Friday and 08:00 – 16:30 on Saturdays. Certain construction activities would need to be undertaken outside these typical working hours. These activities are detailed in Section 5.6 of EIAR Chapter 5.

763. The noise thresholds suggested by Kildare County Council are not consistent with the thresholds set out in the Proposed Project EIAR. The construction noise thresholds adopted for the Proposed Project, while differing slightly from those set out in the submission, are derived from established guidance documents and reflect current best practice and are therefore considered acceptable and appropriate for the Proposed Project. Table 6.3 in EIAR Chapter 6 – Noise & Vibration sets out the construction noise thresholds applicable to the linear elements of the Proposed Project, while Table 6.4 presents the thresholds applicable to the infrastructure and temporary infrastructure sites.

764. The noise assessment and associated criteria presented in EIAR Chapter 6 – Noise & Vibration are based on recognised best practice guidance, including British Standard (BS) 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Noise, Design Manual for Roads and Bridges (DMRB) LA 111 Noise and Vibration The TII Noise Guidelines (TII 2014) all of which are considered appropriate for the Proposed Project.

765. Mitigation measures for construction noise are outlined within Section 6.5.2.1 of EIAR Chapter 6 – Noise & Vibration and the NVMP (Annex D of EIAR Appendix A5.1 – Construction Environmental Management Plan). In accordance with these measures, best practicable means will be employed during the Construction Phase to minimise noise effects at nearby noise sensitive locations. There would be no likely significant effects during the Operational Phase. Notwithstanding this conclusion, appropriate consideration will be given to the selection of plant and facade elements during the detailed design so that the operational noise associated with any infrastructures site will operate within the proposed criteria set out in Section 6.2.6.3 of EIAR Chapter 6 – Noise & Vibration.

8.4.3 Planning Conditions Specific to the Offaly County Council Area

766. The prescribed body submission from Offaly County Council recommended a number of noise-related conditions for proposed works within Offaly County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

767. This prescribed body submission requested the following noise-related conditions be attached to any grant of planning for the Proposed Project:

- Noise emissions at the nearest noise sensitive location (such as dwellings, schools, places of worship or areas of high amenity) shall comply with recommendations set out in Chapter of EIAR and / or the EPA IPC licence requirements;
- Audible tonal or impulsive components should be minimised at any noise sensitive location; and
- The Applicant shall take reasonable measures to mitigate any environmental noise nuisance which may arise during construction. Construction shall take place during working hours 7am to 6.30pm Monday to Friday and 8am to 1.30pm Saturday unless otherwise authorised by the Planning Authority.

8.4.3.1 Applicant's Response

768. The Applicant acknowledges the recommended conditions and requirements within the submission from Offaly County Council. The Applicant is committed to ongoing consultation with Offaly County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. However, the Applicant notes that the recommended conditions are not wholly consistent with the measures outlined in the EIAR, as explained in the following paragraphs. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

769. The Applicant assumes that the reference to Chapter 11 of the EIAR in the submission is EIAR Chapter 6 – Noise & Vibration and would highlight that an EPA IPC license is not relevant to the Proposed Project.

770. The working hours suggested by Offaly County Council are not consistent with the working hours set out in the Proposed Project EIAR. The working hours for the Proposed Project are set out within EIAR Chapter 5 - Construction & Commissioning and are 07:00 – 19:00 Monday to Friday and 08:00 – 16:30 on Saturdays. Certain construction activities would need to be undertaken outside these typical working hours. These activities are detailed in Section 5.6 of EIAR Chapter 5.

771. Section 6.2.6.3 of EIAR Chapter 6 – Noise & Vibration outlines the guidance to apply during the Operational Phase of the Proposed Project with specific comment on tonality and impulsivity included – *‘The Proposed Project will be designed so that the operational noise levels will not have clearly audible tonal or impulsive noise characteristics at any NSL during night-time periods.’*

772. Mitigation measures for construction noise are outlined within Section 6.5.2.1 of EIAR Chapter 6 – Noise & Vibration and the NVMP (Annex D of EIAR Appendix A5.1 – Construction Environmental Management Plan). In accordance with these measures, best practicable means will be employed during the Construction Phase to minimise noise effects at nearby noise sensitive locations.

8.4.4 Planning Conditions Specific to the Tipperary County Council Area

773. The prescribed body submission from Tipperary County Council recommended a number of noise-related conditions for proposed works within Tipperary County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

774. This prescribed body submission requested the following noise-related conditions be attached to any grant of planning for the Proposed Project:

- Construction should be within normal working hours and no construction activity permitted on Sundays or public holidays save where an exceptional need arises (e.g. to reinstate a road trench) and prior authorisation is obtained from the consenting authority. Operational noise limits should be imposed on the three infrastructure sites in Tipperary and noise levels should be monitored to ensure compliance with specified limits; and
- A condition to control operational noise levels.

8.4.4.1 Applicant’s Response

775. The Applicant acknowledges the recommended conditions and requirements within the submission from Tipperary County Council. The Applicant is committed to ongoing consultation with Tipperary County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. However, the Applicant notes that the recommended conditions are not wholly consistent with the measures outlined in the EIAR, as explained in the following paragraphs. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

776. The working hours for the Proposed Project are set out within EIAR Chapter 5 - Construction & Commissioning and are 07:00 – 19:00 Monday to Friday and 08:00 – 16:30 on Saturdays. Certain construction activities would need to be undertaken outside these typical working hours. These activities are detailed in Section 5.6 of EIAR Chapter 5.

777. Section 6.2.6.3 in EIAR Chapter 6 outlines the guidance and limits applicable during the Operational Phase of the Proposed Project, including defined operational noise criteria for all infrastructure sites. There would be no likely significant effects during the Operational Phase. Notwithstanding this conclusion, appropriate consideration will be given to the selection of plant and facade elements during the detailed design so that the operational noise associated with any infrastructures site will operate within the proposed criteria set out in Section 6.2.6.3 of EIAR Chapter 6 – Noise & Vibration. On this basis, the operational noise assessment within the EIAR is founded on compliance by design, rather than on the adoption of operational noise monitoring.

9. Traffic and Transport

9.1 Overview

778. Thirty of the 114 submissions raised the issue of traffic and transport in relation to the Proposed Project.

779. An assessment of traffic and transport was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 7 – Traffic & Transport. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.

780. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding traffic and transport. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:

- Chapter 6 – Proposed Project Description;
- Chapter 7 – Construction and Commissioning;
- Chapter 14 – Agriculture; and
- Chapter 21 – Material Assets.

781. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.

782. The majority of submissions were in relation to the following, all of which have been considered in the EIAR and appropriate mitigation measure proposed:

- Construction traffic impacts, including increased HGV movements on local and regional roads;
- Traffic management measures, including the need for a Traffic Management Plan (TMP);
- Road safety concerns, particularly in relation to rural roads width, visibility, and interaction with existing traffic;
- Disruption to local communities, including temporary road closures, noise, and dust;
- Impacts on agricultural access and farm operations during the construction phase;
- Suitability of the existing road network to accommodate construction traffic; and
- Site access arrangements and potential conflicts with existing access points.

783. This Chapter is structured around the following sections:

- General matters raised in all general observer and Prescribed Body submissions regarding traffic and transport;
- Specific matters raised in general observer submissions regarding traffic and transport; and
- Specific matters raised by Prescribed Bodies regarding traffic and transport.

784. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.

9.2 Response to General Issues Raised

9.2.1 General Construction Traffic Impacts

785. The following submissions raised concerns regarding potential volumes of construction traffic associated with the Proposed Project on local and regional roads, including increased heavy goods vehicle (HGV) movements and abnormal load deliveries during the construction phase.

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_16	Joanne Skehan
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_57	Lucy Murphy
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_72	Carol Killeen
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh
WSP_SUB_114	Tipperary County Council

9.2.1.1 Applicant's Response

786. A number of responses have raised issues in relation to the suitability of haul roads that will be used by the Proposed Project during construction. As explained in Section 7.2.6.1 of EIAR Chapter 7 - Traffic & Transport, haul roads were selected by reviewing all potential crossings and access points along the pipeline route, focusing on collision risk, road condition, bridge clearance, width, and suitability for large vehicles. Only roads capable of accommodating traffic volumes for plant, construction staff, and materials, and requiring at most minor upgrades such as passing bays, were identified as suitable for the Proposed Project. These haul roads considered suitable for the construction of the Proposed Project have been determined in consultation with Transport Infrastructure Ireland (TII) and the Local Authorities most directly affected by the Proposed Project.

787. As stated in Section 5.3.2 of EIAR Appendix A5.1 – Construction Environmental Management Plan, no abnormal loads, as defined in S.I. No. 5/2003 – Road Traffic (Construction and Use of Vehicles) Regulations 2003 and the Road Safety Authority Guidelines on Maximum Weights and Dimensions of Mechanically Propelled Vehicles and Trailers, Including Manoeuvrability Criteria (Road Safety Authority 2023), are required for the Proposed Project.

788. In relation to potential construction traffic impacts, EIAR Chapter 7 – Traffic & Transport acknowledges that the Construction Phase of the Proposed Project would introduce additional vehicles to the road network and consequentially would be the phase of the Proposed Project most likely to have traffic and transportation effects. During construction, the traffic generated by the Proposed Project is expected to result in increased traffic flows on national, regional, and local roads providing access to and servicing the site. Accordingly, a Traffic and Transportation Assessment (EIAR Appendix A7.1) was undertaken to evaluate the distribution of construction related traffic across the surrounding road network.

789. As stated in Section 7.6 of EIAR Chapter 7 – Traffic & Transport, the assessment concluded that there would be likely significant effects on three roads and three junctions due to the construction of the Proposed Project. This is due to increased traffic volumes, higher proportions of heavy vehicles, temporary road closures, and increased queuing and delays at the junctions. However, these effects are only expected to occur during peak construction periods and would therefore be temporary in duration, as outlined below:

- R421 – 9 weeks;
- R400 – 5 weeks;
- R422 – 4 weeks;
- Junction 18 – 5 weeks;
- Junction 30 – 4 weeks; and
- Junction 50 – 5 weeks.

790. Mitigation measures for construction traffic are included in the Traffic Management Plan (TMP), which is EIAR Appendix A7.2. Key examples of measures in the TMP include:

- Undertake pre-construction and post-construction visual pavement surveys on the haul roads. Where the surveys conclude that damage on the roadway is attributable to the construction of the Proposed Project, the Applicant will fund the appropriate reinstatement works required and agreed with the relevant Roads Authority;
- Provide a Traffic Management Operative at all accesses and at the Infrastructure Sites implement a convoy system to restrict the volume of traffic exiting onto the haul roads noted to have constraints (in Section 4.2 of the TMP);
- Heavy vehicle deliveries will avoid passing schools at opening and closing times, where it is reasonably practicable. HV deliveries will also be moved to alternative approved haul routes on the days of any major agricultural shows or sports events;
- Limiting heavy vehicle movements during the road network peak to reduce congestion risks;
- Signage for temporary traffic measures will be provided in accordance with the Department of Transport's Traffic Signs Manual (or any subsequent update of the standards that will be in place at the time of the Construction Phase);
- Advanced warning signs will be used to alert drivers to the unexpected road layout ahead (i.e. the roadworks, site access, etc.). All permanent road signs contrary to the proposed roadworks will be covered for the duration of the works and uncovered on removal of the temporary traffic management measures;
- The appointed Contractor(s) will be required to provide wheel cleaning facilities, and any other necessary measures to remove mud and organic material from vehicles;
- In advance of a required road closure, the appointed Contractor(s) will consult and comply with the Roads Authority, An Garda Síochána and other emergency services to agree a suitable diversion route prior to implementing a road closure. The appointed Contractor(s) will be contractually required to adhere to the advertising and consultation requirements of the Road Authority; and

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- A Logistics Management Plan will be prepared and implemented by the Contractor(s) to manage the transport to/from and onsite of employees and materials required for the construction of the Proposed Project. This will set out measures, where practicable, to reduce distances travelled and optimise journeys.

791. The submissions from Yvonne Moloney and John and Georgina Ringrose suggest that there should be restricted haulage hours to avoid tourist peak periods. The Applicant does not believe this is required as the TMP already includes a commitment to limit heavy vehicle movements during the road network peak to reduce congestion risks. This would benefit the road network all year round, and therefore also during the tourist season.

9.2.2 General Safety Concerns

792. The following submissions raised road and public safety concerns in relation to the Proposed Project. The issues raised within these submissions relate to:

- Road safety concerns, particularly in relation to narrow rural roads, visibility, and interaction with existing traffic; and
- General concerns regarding public safety arising from increased construction traffic.

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline & Mark Eldridge
WSP_SUB_13	Éadaoin Kiely & Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_18	John & Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Cllr Fiona Bonfield, Alan Kelly TD, & Cllr Louise Morgan Walsh
WSP_SUB_57	Lucy Murphy
WSP_SUB_64	Portumna & District Angling & Boating Association
WSP_SUB_72	Carol Killeen
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh
WSP_SUB_97	Seamus Cullen

9.2.2.1 Applicant's Response

793. The concerns raised in relation to road safety, including the suitability of local and regional roads, visibility at access points, and interaction between construction traffic and existing road users, are acknowledged.

794. Road safety has been assessed in EIAR Chapter 7 -Traffic & Transport, which evaluates the potential impacts of construction and operational traffic on the surrounding road network, including local and regional roads. The assessment considers existing traffic conditions, predicted increases in traffic, and

the capacity and operation of the road network. The assessment also considers potential effects on other road-related issues, including road safety, vulnerable road users, and public transport.

795. Historical road traffic collision data was analysed in order to identify any existing safety issues or clusters of collisions along the proposed haul road. This assessment was undertaken using Road Safety Authority data which provided details of recorded collisions along the relevant sections of the road network. The analysis did not identify any significant clustering of fatal or serious collisions along the haul roads that would indicate a particular safety concern requiring avoidance. The recorded collisions comprised approximately 4% fatal and 8% serious incidents, with the majority categorised as minor. These findings are illustrated in Figure 7.18 to Figure 7.21 of EIAR Chapter 7.
796. The TMP (EIAR Appendix A7.2) will be implemented to manage construction-related traffic. This will include measures such as use of designated haul roads, traffic management measures at key locations, coordination of construction vehicle movements, and appropriate signage and traffic control, where required. These measures will ensure that potential interactions between construction traffic and existing road users, including agricultural vehicles, pedestrians and cyclists, are appropriately managed.
797. Additional mitigation measures will be implemented to ensure safe interaction between construction traffic and existing road users. These include a contractual requirement for the appointed Contractor(s) to provide a TMO at locations where there are constraints in relation to visibility splays or vehicle swept path requirements. The TMO will manage vehicle movements at access points to ensure safe ingress and egress during construction activities.
798. For all proposed infrastructure site accesses, the design of junctions, where feasible, provide visibility splays in accordance with the minimum requirements set out in the relevant Local Authority Development Plans. The required visibility envelopes will be maintained free from obstruction for the full extent of the sightline, including the control of signage, vegetation, or other potential impediments.
799. The Applicant has identified that at the BPT the sightline on the western side of the entrance would be constrained by the existing properties and so will not reach the full length required and this is stated in the SID Engineering Report (Section 6.2.12) and Chapter 4 (Proposed Project Description) (Section 4.8.3). The permanent access for the BPT will replace an existing access / entrance from the land onto the L1064 and the constraint adjacent to the existing access cannot be removed. The Applicant has included a splayed entrance at the access point from the L1064 to help the situation but acknowledges that additional measures, such as a speed reduction may be required. The Applicant would welcome further dialogue with the Council on this matter.
800. In relation to visibility and access arrangements, the design of all proposed access points has been developed having regard to applicable road design standards and safety requirements, including those set out by TII, and includes the provision of appropriate sightlines and safe access and egress arrangements.
801. Road Safety Audits have been undertaken for the preliminary design and will continue to be carried out at subsequent stages of the project, including a Stage 2 Road Safety Audit at detailed design stage and a Stage 3 Road Safety Audit following construction, in accordance with TII guidance GE-STY-01024. These audits provide an independent review of the design and built infrastructure to ensure that road safety considerations are fully addressed.
802. With the implementation of the proposed mitigation measures, the EIAR concludes that the potential effects on road safety during both the construction and operational phases of the Proposed Project would be not significant.

9.2.3 Disruption to Local Communities

803. The following submissions raised concerns regarding disruption to local communities in relation to the Proposed Project. The issues raised within these submissions relate to:

- Temporary road closures and associated disruption to local access; and
- General disruption to daily activities within local communities during the construction period.

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline & Mark Eldridge
WSP_SUB_14	Eva Killeen
WSP_SUB_16	Joanne Skehan
WSP_SUB_18	John & Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Cllr Fiona Bonfield, Alan Kelly TD, Cllr Louise Morgan Walsh
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_57	Lucy Murphy
WSP_SUB_64	Portumna & District Angling & Boating Association
WSP_SUB_72	Carol Killeen

9.2.3.1 Applicant's Response

804. As set out in the response in Section 9.2.1 of this report, the construction phase of the Proposed Project will involve additional vehicle movements on the surrounding road network and will be managed in accordance with a TMP and CEMP (EIAR Appendices A7.2 and A5.1), which will be implemented by the appointed Contractor(s) and overseen by the relevant Roads Authorities and the project authority, in agreement with the relevant local authorities and stakeholders.

805. Where temporary traffic management measures or road closures are required, these will be kept to the minimum duration necessary to safely complete the works and will be implemented in consultation with the relevant Roads Authority, emergency services, local authorities and stakeholders.

806. While an increase in construction traffic will occur during the construction phase, these effects will be temporary in nature, localised in extent, and managed through the implementation of the mitigation measures outlined above.

807. Traffic effects were considered in EIAR Chapter 14 – Population, along with other issues such as road closures from road crossings, to assess the effect on community severance. The conclusion from EIAR Chapter 14 was that there would be no likely significant effects on community severance.

9.2.4 Impacts on Agricultural Access and Farm Operations During the Construction Phase

808. The following submissions raised concerns regarding potential impacts on agricultural access and farm operations during the construction phase of the Proposed Project, including temporary disruption to farm access routes and interference with agricultural activities.

809. The issues raised within these submissions relate to:

- Temporary disruption to access routes serving agricultural lands during construction;
- Impacts on the movement of livestock, farm machinery, and equipment;
- Temporary constraints on access to farmyards and agricultural holdings; and
- The duration and extent of disruption to farm operations within affected areas.

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Cllr Fiona Bonfield, Alan Kelly TD, & Cllr Louise Morgan Walsh
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_72	Carol Killeen
WSP_SUB_74	John Hensey
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_91	James Waldron (McEnteggert Consultancy on behalf of)
WSP_SUB_92	Judith Kohler
WSP_SUB_93	Michael McKeogh
WSP_SUB_97	Seamus Cullen

9.2.4.1 Applicant's Response

810. As outlined in EIAR Chapter 7 - Traffic & Transport, the construction phase will involve temporary works along sections of the route which may result in localised and short-term disruption to agricultural access. These impacts are confined to specific work fronts and are temporary to short-term in nature, occurring only for the duration of construction activities in a given area.

811. The EIAR recognises the importance of maintaining agricultural access and minimising disruption to farm operations where practicable. The Proposed Project does not involve permanent severance of agricultural lands, and access will be maintained wherever feasible throughout the construction phase.

812. Mitigation measures for agricultural access are included in the CEMP and TMP (EIAR Appendices A7.2 and A5.1). Key measures include:

- Maintaining access to agricultural lands where practicable during construction works;
- Provision of temporary alternative access arrangements where direct access is temporarily affected;
- Phased construction sequencing to minimise duration of disruption at individual landholdings;
- Advance consultation with affected landowners prior to and during construction activities;
- Coordination of construction activities to accommodate ongoing farm operations where practicable; and
- Reinstatement of agricultural land, boundaries, and access routes following completion of construction works.

813. Where construction activities interface with ongoing agricultural operations, these will be managed in coordination with landowners to ensure safe and practicable arrangements are maintained.

814. This response addresses traffic related issues. Responses in relation to the agriculture assessment are included in Chapter 14 – Agriculture of this report.

815. The submission from Seamus Cullen raises specific design matters in relation to access. These are addressed in Section 6.3.4 of Chapter 6 – Proposed Project Description of this report.

9.2.5 Site Access Arrangements and Potential Conflicts with Existing Access Points

816. The following submissions raised concerns regarding site access arrangements for the Proposed Project and the potential for conflicts with existing access points along the public road network during the construction phase.

817. The issues raised within these submissions relate specifically to:

- Lack of clarity regarding how construction areas will be accessed;
- The location and suitability of proposed construction access points;
- Potential conflicts between construction traffic and existing residential and agricultural access points;
- Visibility and safety at junctions and entrances used for construction access; and
- The interaction between construction traffic movements and local road users at access locations.

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline & Mark Eldridge
WSP_SUB_13	Éadaoin Kiely & Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_18	John & Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD

Unique ID	Name of Individual or Organisation
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_93	Michael McKeogh
WSP_SUB_97	Seamus Cullen
WSP_SUB_104	Peamount Healthcare

9.2.5.1 Applicant's Response

818. Site access arrangements have been designed as part of the overall project development process and are set out within EIAR Chapter 7 - Traffic & Transport. Construction access points have been selected based on engineering feasibility, road safety considerations, visibility requirements, and the ability to safely accommodate construction traffic.

819. The proposed access and egress points for the Proposed Project are set out in Table 7.8 in EIAR Chapter 7 - Traffic & Transport. This table details the location of each access point, its function, and the duration for which it will be in use during the construction phase. The development of these access and egress points is described in Section 7.2.6.2 of EIAR Chapter 7, which outlines the design rationale and assessment process applied to each location.

820. The design of all access points has been undertaken in accordance with applicable road design standards, including TII standards, namely DN-GEO-03060 (Geometric Design of Junctions), as applicable, with provision for adequate visibility splays in accordance with the required design criteria to ensure safe ingress and egress of construction traffic. Visibility splays for all proposed access points have been included in the Planning Application Boundary. In addition, further mitigation measures, as set out below, will be implemented.

821. Where construction access interfaces with existing residential, agricultural, or third-party access points, potential conflicts will be managed through the implementation of mitigation measures within the TMP, which is EIAR Appendix A7.2. Key measures include:

- Provision of Traffic Management Operatives at constrained access locations where required;
- Control and coordination of construction vehicle movements at site entrances and exits;
- Temporary traffic management signage and warning systems in the vicinity of access points;
- Advance notification to local communities and landowners regarding construction activities affecting access;
- Scheduling of construction deliveries to minimise peak-time conflicts where practicable; and
- Liaison with the relevant Roads Authority and emergency services in relation to access arrangements and any temporary traffic management measures.

9.2.6 Suitability of the Existing Road Network to Accommodate Construction Traffic

822. The following submissions raised concerns regarding the suitability of the existing road network to accommodate construction traffic associated with the Proposed Project, including HGV movements and construction-related traffic flows during the construction phase.

823. The issues raised within these submissions relate specifically to:

- The ability of narrow rural and regional roads to accommodate construction traffic;
- The structural and geometric suitability of the existing road network for HGV movements;

- The capacity of local roads and junctions to safely accommodate increased traffic volumes;
- The interaction between construction traffic and existing agricultural and local road users; and
- The potential for accelerated wear and deterioration of the road network during construction.

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline & Mark Eldridge
WSP_SUB_13	Éadaoin Kiely & Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_16	Joanne Skehan
WSP_SUB_18	John & Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_57	Lucy Murphy
WSP_SUB_64	Portumna & District Angling and Boating Association
WSP_SUB_72	Carol Killeen
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh

9.2.6.1 Applicant's Response

824. The suitability of the road network has been assessed in detail within EIAR Chapter 7 - Traffic & Transport, which includes an evaluation of existing road classifications, geometry, baseline traffic flows, junction performance, and structural suitability for construction traffic, including HGV movements.

825. As part of the assessment, haul roads were identified through a systematic review of the surrounding road network, considering factors such as road width, alignment, visibility, bridge and junction constraints, collision risk, and overall suitability for construction traffic. Only roads assessed as capable of accommodating construction traffic, either in their existing condition or with minor localised improvements such as passing bays or temporary widening, were included.

826. The assessment confirms that the selected haul roads form part of the existing regional and local road network and are capable of accommodating the forecasted construction traffic flows. While increases in traffic volumes would occur during peak construction periods, these increases are temporary in nature and have been assessed within the capacity of the receiving network.

827. In order to ensure that the structural integrity of the road network is maintained, a number of mitigation and monitoring measures will be implemented. The Applicant will undertake pre-construction and post-construction visual pavement surveys on the haul roads. Where these surveys identify that any deterioration or damage is attributable to construction activities associated with the Proposed Project, the Applicant will fund and agree appropriate reinstatement works with the relevant Roads Authority.

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828. In addition, for the proposed regional and local haul roads in County Kildare, it will be a contractual requirement that the appointed Contractor(s) undertake Level 1 Falling Weight Deflectometer surveys both pre- and post-construction (at a minimum of 50m centres in each carriageway), as agreed with Kildare County Council.

829. Where construction traffic interacts with more sensitive or constrained sections of the network, further mitigation measures will be implemented through the TMP, which is EIAR Appendix A7.2. These measures include:

- Routing of construction traffic along designated haul routes agreed with the relevant Roads Authorities;
- Scheduling of deliveries to avoid peak traffic periods where practicable;
- Use of Traffic Management Operatives at constrained locations where required;
- Provision of signage and advance warnings for road users; and
- Coordination with relevant authorities to manage any temporary traffic management measures.

9.3 Response to Specific Issues Raised in General Observer Submissions

9.3.1 Potential Traffic Impacts at Peamount Hospital

830. The general observer submission from Peamount Healthcare raised a specific issue relating to the potential for traffic impacts to affect patients at Peamount Hospital.

Unique ID	Name of Individual or Organisation
WSP_SUB_104	Peamount Healthcare

831. Peamount Healthcare raises concerns regarding the proposed construction access arrangements, particularly the proximity of the access route and junction to the hospital campus and residential care facilities.

832. The submission highlights that the current proposal would result in construction and operational traffic passing close to sensitive healthcare environments, potentially impacting patients, including long-term residents with neurological conditions.

833. Peamount Healthcare states that an alternative access route via the Grange Castle West Access Road is available and was not adequately considered in the Alternatives Assessment. It is argued that this route would utilise existing, higher-capacity infrastructure and avoid impacts on the hospital.

834. The submission also objects to the inclusion of certain lands within the Compulsory Purchase Order (CPO), on the basis that the alternative access arrangement would remove the need for these lands and reduce impacts on the hospital.

9.3.1.1 Applicant's Response

835. In relation to increased traffic as a result of the location of the TPR, EIAR Chapter 7 – Traffic & Transport provides the breakdown of construction traffic anticipated to use the TPR access road via access point AE040 and the construction compound at the TPR. It is anticipated that there would be an AADT of 90 light vehicles, consisting of cars, vans and shuttle buses (Table 7.42 and Table 7.43 in EIAR Chapter 7) and 62 heavy vehicles (Table 7.44) accessing AE040 and the construction compound at the TPR during the construction period of the TPR.

836. To put these numbers into context, the R120 (also referred to as Link BE in EIAR Chapter 7), which the TPR access road connects to, has a Do-Minimum of 7,614 AADT. The change in AADT on the R120 as a result of the Proposed Project, including construction traffic accessing the TPR at AE040, would be approximately 2%, with no change in the proportion of heavy vehicles (Table 7.46 in EIAR Chapter 7). From a traffic assessment perspective, this change would be imperceptible, as set out in Table 7.52 of EIAR Chapter 7, and no junctions would experience significant effects in terms of delay or queuing.
837. The level of construction traffic associated with the TPR is low in absolute terms and will occur over a defined and short-term construction period. A TMP will be implemented to manage construction traffic, including routing and scheduling of deliveries to minimise potential impacts on the surrounding road network.
838. During operation, the TPR is anticipated to generate peak hourly traffic of 10 light vehicles and one heavy vehicle. This would result in a negligible increase in AADT on the R120 (i.e. of less than 1%), and therefore the effect on traffic would be imperceptible, as set out in Section 7.4.3 in EIAR Chapter 7 – Traffic & Transport. No junctions would experience significant effects in terms of delay or queuing as a result of the operation of the TPR.
839. On this basis, the EIAR concludes that the impact of construction and operational traffic associated with the TPR would be not significant.
840. In relation to the potential alternative, permanent access, via the Grange Castle West Access Road, as raised in the submission, the EIAR, including Chapter 3 - Consideration of Reasonable Alternatives, outlines the approach to the identification of feasible access arrangements having regard to engineering, environmental, and land constraints. The selected access via AE040 reflects the outcome of this design and assessment process having regard to these constraints. This issue is further addressed in Section 5.3.2 of Chapter 5 – Consideration of Reasonable Alternatives of this report.
841. In relation to the concerns raised regarding the CPO, the Applicant has responded to this in the letter responding to the CPO objection.

9.3.2 Potential Impact of the Construction and Operation of the Water Treatment Plant on Traffic

842. The following submission raised concerns about the potential traffic impacts associated with the construction and operation of the WTP:

Unique ID	Name of Individual or Organisation
WSP_SUB_93	Michael McKeogh

843. The submission raises concerns that the construction and operation of the proposed WTP will generate a sustained increase in heavy goods vehicle traffic on local rural roads, which are not designed to accommodate this traffic.

9.3.2.1 Applicant's Response

844. In terms of the suitability of the Haul Roads, this is covered in the response to submissions in Section 9.2.6 of this report – these roads have been selected based on their ability to accommodate traffic from the Proposed Project, in consultation with local authorities and TII.
845. In terms of construction effects, the traffic assessment in EIAR Chapter 7 – Traffic & Transport concluded that there would be no likely significant effects on any roads or junctions in Tipperary, where the WTP is located, as a result of the Proposed Project, following the adoption of the proposed mitigation measures.

Without these mitigation measures, three of the road links within Tipperary that would be used by construction traffic accessing the site of the WTP had the potential for significant effects, as set out in Section 7.4.2.5.1 of EIAR Chapter 7 – Traffic & Transport. These were:

- The R445 (also referred to as Link C in EIAR Chapter 7), a regional road with a medium sensitivity, which would experience a 15% increase in annual average daily traffic (AADT) due to peak construction traffic from the Proposed Project, which is considered a high magnitude impact; and
- Two links on the N52 (Links H and I in EIAR Chapter 7) would experience a medium magnitude 10% increase in AADT during peak construction periods, but as they are high sensitivity roads, they were assessed as potential significant effects.

846. However, the standard best practice measures that will be put in place to reduce disruption on the local road network during construction, as set out in the TMP (EIAR Appendix A7.2) and summarised in the response in Section 9.2.1 of this report, would reduce the effects on these road links to a level that would not be significant, as described in Section 7.6 of EIAR Chapter 7 – Traffic & Transport.

847. Junction 18 is located in Offaly (junction of the N52 and R440) and would accommodate traffic for the WTP Construction Compound, in addition to other construction elements such as the RWI&PS, a Pipe Storage Depot and 12 no. access points along the Construction Working Width. As stated in the response in Section 9.2.1 of this report, Junction 18 would experience a significant effect during the Construction Phase. This effect would only occur during the peak construction period for this junction. As explained in Section 7.4.2.6.2 of EIAR Chapter 7 – Traffic & Transport, the significant effect associated with construction traffic at Junction 18 is considered temporary, as the peak period of the Construction Phase for this junction is five weeks. As per the TMP (EIAR Appendix A7.2), to mitigate the effects from heavy vehicles during the peak construction activity period on the surrounding road network, where temporary significant impacts are anticipated at Junction 18 (five weeks), it is proposed to limit the number of heavy vehicles for essential deliveries only.

848. The operation of the Proposed Project would generate low levels of traffic movements and consequently there would be limited potential for impacts on traffic and transport. The activities relevant to the WTP would be:

- Maintenance or other operational vehicle movements;
- Operatives travelling to and from site; and
- The removal of waste arising from the WTP (primarily dried residual water treatment sludge).

849. As set out in Section 7.4.3 of EIAR Chapter 7 – Traffic & Transport, peak hourly operational traffic associated with the WTP is anticipated to be 16 light vehicles and 15 heavy vehicles, however, note that it is assumed that stored sludge would be removed every six months, therefore this peak would only occur once every six months. The relevant roads in the vicinity of the WTP that would be affected by this operational traffic are the R494 and R445 (also referred to as Link B and C in EIAR Chapter 7). As a result of the Proposed Project, there would be an increase of 1% and 7% in AADT for the R494 and R445 respectively, and 3% and 5% increase in heavy vehicles respectively (during peak periods). This would be a low magnitude impact, at worst, and therefore would not result in a likely significant effect on the traffic using these roads. No junctions would have significant effects from delays and queuing as a result of the operation of the WTP.

9.3.3 Potential Impact of the Construction of the Break Pressure Tank on Traffic

850. The following submission raised concerns about the potential traffic impacts associated with the construction of the BPT:

Unique ID	Name of Individual or Organisation
WSP_SUB_76	Melissa Anne Kenny

851. The submission raises concerns that the construction and plant will significantly increase heavy vehicle traffic on local roads within the area around the BPT. These roads are not suited for such use. The property is located in a rural country area which would not be used to a huge volume of traffic or to disruption. This raises safety concerns for pedestrians, cyclists, local motorists and threatens the integrity of the road.

9.3.3.1 Applicant's Response

852. In terms of the suitability of the haul roads, this is covered in the response to submissions in Section 9.2.6 of this report – these roads have been selected based on their ability to accommodate traffic from the Proposed Project, in consultation with local authorities and TII.

853. The R490 and L1064 would serve the construction of the BPT and its associated Construction Compound. Junction 13 (proposed junction between the BPT access road and L1064) and Junction 14 (junction of the R490/R491) are associated with these haul roads. In terms of construction effects, the traffic assessment in EIAR Chapter 7 – Traffic & Transport concluded that there would be no likely significant effects on these roads or junctions (see Section 7.4.2.5.2 and 7.4.2.6.1 of EIAR Chapter 7).

854. Although not required to avoid likely significant effects, standard best practice measures will be put in place to reduce disruption on the local road network during construction, as set out in the TMP (EIAR Appendix A7.2) and summarised in the response in Section 9.2.1 of this report.

855. As per the response in Section 9.2.2 of this report, the Proposed Project would not have a significant effect on road safety. EIAR Chapter 7 – Traffic & Transport assessed the effect on pedestrian and cyclist accessibility, which includes the impact to the level of general unpleasantness, fear, intimidation and delay experienced by pedestrians and other vulnerable road users from the change in traffic volume, composition, and speeds. As per Section 7.4.2.7 in EIAR Chapter 7, there would be no likely significant effect on construction phase pedestrian and cyclist accessibility.

856. In relation to the integrity of the road, as per the response in Section 9.2.6 of this report, the Applicant will undertake pre-construction and post-construction visual pavement surveys on the haul roads. Where these surveys identify that any deterioration or damage is attributable to construction activities associated with the Proposed Project, the Applicant will fund and agree appropriate reinstatement works with the relevant Roads Authority.

9.4 Response to Specific Issues Raised by Prescribed Bodies

9.4.1 Traffic Management Plan (TMP)

857. The following submission stated that the TMP should be revised and agreed with TII where the national road network forms part of the proposed haul route:

Unique ID	Name of Individual or Organisation
WSP_SUB_99	Transport Infrastructure Ireland (TII)

858. The prescribed body submission from TII stated that the TMP shall include the following information in relation to the national road network:

- Details demonstrating compliance of proposed works to the national road network, including signage, to facilitate construction traffic with TII Publications;

- Demonstration of consultation with TII Bridge Management Section to ensure that national road structures are not adversely affected and to ensure adherence to required standards and procedures;
- Demonstration of consultation with all relevant PPP Companies, MMarC Contractors and road authorities over which the haul route traverses to ascertain any operational requirements such as delivery timetabling to ensure that the strategic function of the national road network is maintained;
- Copies of any proposals agreed between the road authority, PPP Concessions and MMarC Companies and the applicant impacting on national roads;
- Demonstration of consultation with thirdpartyworks@tii.ie where temporary works within national road network maintenance boundaries are required to facilitate construction traffic to site, as a works specific Deed of Indemnity may be required by TII before the works can take place; and
- Include that any damage caused to the pavement of the existing national road due to construction traffic shall be rectified in accordance with TII Pavement Standards and details in this regard shall be agreed with the Road Authority prior to the commencement of any development on site.

9.4.1.1 Applicant's Response

859. The Applicant acknowledges the recommended conditions and requirements within the submission from TII. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

860. As outlined in 6.2 of EIAR Appendix A7.2 (TMP) the appointed Contractor(s) must apply for key consents, licences, notifications, and permissions likely to be required for the Proposed Project such as permission from the Motorway Maintenance and Renewal Contractor (MMaRC)/Public Private Partnership Contractor (PPP) on the relevant national roads, such as delivery timetabling, to ensure that the strategic function of the national road network is maintained.

861. As set out in Section 4.1 of EIAR Appendix A7.2 (TMP) pre-construction and post-construction road condition surveys will be undertaken. Where the Pavement surveys conclude that damage on the roadway is attributable to the Construction Phase of the Proposed Project, the Applicant will fund the necessary repairs and rehabilitation of any damage caused by the construction traffic; details of which will be agreed with the Roads Authority.

862. The Applicant is committed to ongoing consultation with TII throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR, CEMP and TMP which are all included in the planning application documentation.

863. As stated in Section 1 of the TMP (EIAR Appendix A7.2), the TMP will be further developed by the appointed Contractor(s) and approved by the relevant Roads Authority, including TII, prior to the commencement of construction and throughout the construction phase as required.

9.4.2 Road Safety Audits

864. The following prescribed body submissions raised specific issues relating to road safety audits:

Unique ID	Name of Prescribed Body
WSP_SUB_99	Transport Infrastructure Ireland (TII)
WSP_SUB_111	Kildare County Council

Response to Submissions Report

865. The prescribed body submission from TII strongly recommends that Road Safety Audits for proposed development elements on the N52 and N62 where the maximum 100 kmph speed limit applies shall be undertaken, and all recommendations of the Road Safety Audits shall be incorporated into final designs. TII advise that neither the current Offaly County Development Plan nor Tipperary County Development Plan provide any agreed "exceptional circumstances" cases for development accessing a national road such as that currently proposed.

866. The prescribed body submission from Kildare County Council stated that a Road Safety Audit for the proposed works in County Kildare should be submitted.

9.4.2.1 Applicant's Response

867. The Applicant notes that there were overlaps in requests from TII for further information related to design matters, construction matters and settlement which due to the structure of this report are considered in Chapter 6 – Proposed Project Description, Chapter 7 – Construction and Commissioning and Chapter 21 – Material Assets of this report. These responses should be considered in conjunction with one another.

868. The Applicant notes that a Road Safety Audit (RSA) Stage 2 and 3 was not included for any temporary infrastructure. This includes the proposed temporary entrance on the N52 for the temporary Construction Compound (CC2 Lisgarraff, County Tipperary) and the proposed temporary entrance on the N62 for the temporary Pipe Storage Depot (PSD3 Boveen, County Offaly). This approach was based on TII GE-STY-01024, which indicates that RSAs are typically undertaken for permanent changes only.

869. For clarity, the proposed layby opposite the Pipe Storage Depot on the N62 and entrance gate from the layby to the adjacent line valve and an RSA can be made available if ACP considers it appropriate.

870. The Applicant notes that TII and Kildare County Council have requested additional information. The Applicant can prepare these documents if ACP considers it appropriate.

871. Alternatively, in the event of a grant of permission, should ACP consider it appropriate, the requirement to undertake an RSA Stage 2 and Stage 3 for temporary accesses may be conditioned to be included in the mitigation measures for the Proposed Project.

9.4.3 Planning Conditions Specific to the Kildare Country Council Area

872. The prescribed body submission from Kildare County Council recommended a number of traffic-related conditions for proposed works within County Kildare be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

873. This prescribed body submission requested the following traffic-related conditions be attached to any grant of planning for the Proposed Project:

- Submit a review of all haul routes in County Kildare including the requirement for the installation of passing bays;
- Undertake and submit a report on comprehensive Pre-Construction Road Condition Surveys of all public roads to be used by construction traffic and shall include photographic condition records, pavement condition assessments and pre-work falling weight deflectometer testing;

Response to Submissions Report

- Submit a detailed Road Reinstatement Methodology which will be agreed in writing with Kildare County Council and will specify permanent reinstatement requirements consistent with Kildare County Council standards and the Purple Book, pavement strengthening or overlay design (where required), temporary reinstatement standards, timelines and maintenance responsibilities and materials, construction methods and quality control testing;
- Implement a monitoring regime throughout the proposed works;
- Undertake a Kildare-specific Construction Traffic Management Plan for agreement with the Roads Authority based on the methodologies of the EIAR;
- Undertake full repair or reconstruction of pavement to the satisfaction of the Roads Authority (at the Applicant's own expense);
- Undertake Post-Construction Road Surveys and FWD testing on completion of the works and submit to Kildare County Council;
- Commission and submit an independent Road Safety Audit for the proposed works within County Kildare, with details included on sightlines, swept path analysis, wheel wash facilities car parking requirements and arrangements and an outline of operational arrangements and coordination between compound CC6 and Monaghan Mushrooms;
- Provide specific details on open cut excavation, trenching, ducting and directional drilling within or under local and regional road in the Kildare County Council area, with these works to be carried out under a Road Opening Licence submitted to the Maynooth and Celbridge Municipal District Office;
- The Applicant will provide and fund a full-time Resident Engineer to supervise road works on the Kildare County Council road network, with the appointed to be agreed with the Planning Authority;
- Submit names and contact details of the Project Supervisor for the Design Process and Project Supervisor for the Construction Stage for all road works in County Kildare to the Kildare County Council Transport, Mobility and Open Spaces Department, and agreed in writing with the Planning Authority;
- Obtain a licence for the erection of fencing / hoarding on the public footpath, prior to works commencing, pursuant to Section 254 of the Planning and Development Act 2000, as amended;
- The Applicant shall coordinate all construction activities, haul route use, road occupations, temporary traffic management measures and utility works with any other ongoing developments or road improvement schemes / utilities works;
- No spoil, dirt, debris or other materials shall be deposited on the public road network, footpaths or verges;
- All contractor parking storage, loading and unloading shall occur within the site and not on the public road network;
- Construction works affecting the public road network shall be limited to 08:00-18:00hrs Monday to Friday and 08:00-13:00hrs on Saturdays. No Sunday or public holidays works, unless approved;
- No surface water from the proposed works shall discharge onto the public road network, footpaths or verges and the Proposed Project shall not impair existing land and road drainage;
- Prior to construction, the Applicant shall engage in writing with the Maynooth and Celbridge Municipal District Engineer and arrange for necessary inspections to be carried out on roads in the vicinity of the proposed works; and
- The EIAR figure 7.2 to 7.8 outlines haul routes with access points, these drawings are not detailed enough, Kildare County Council will require a drawing for each access point showing sight lines and swept path analysis.

9.4.3.1 Applicant's Response

874. The Applicant acknowledges the recommended conditions and requirements within the submission from Kildare County Council. The Applicant is committed to ongoing consultation with Kildare County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR, CEMP and TMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

875. The Applicant provides the following response for consideration:

- A comprehensive review of haul routes has been undertaken, including the identification of potential pinch points along the network, as identified in Table 4.1 of EIAR Appendix A7.2 (TMP). Based on this assessment, the Applicant does not propose the provision of passing bays at this stage. Instead, the identified constraints will be managed through appropriate traffic management measures, as outlined in Section 4.2.1 of EIAR Appendix A7.2, to be implemented as part of the Construction Phase TMP for the Proposed Project. However, as stated in EIAR Appendix A7.2, these represent minimum commitments that the Contractor(s) shall adhere to, with additional measures to be developed during the construction phase in consultation with relevant stakeholders, including the local authorities;
- As set out in Section 4.1 of EIAR Appendix A7.2 (TMP) pre-construction road condition surveys will be undertaken as part of the pre-construction works, with the associated report to be prepared and submitted for all affected public roads;
- As set out in Section 1.3 of EIAR Appendix A7.2 (TMP), the appointed Contractor will comply with the requirements in the Department of Transport Guidelines for Managing Openings in Public Roads (Purple Book). Any required pavement strengthening or overlay design will be carried out in accordance with these guidelines;
- As set out in Section 6.11 and 6.12 of EIAR Appendix A7.2 (TMP), the appointed Contractor will implement a Logistics Management Plan to manage construction traffic and will ensure the use of GPS tracking for all heavy goods vehicles. The appointed Contractor will comply with approved haul routes, facilitate monitoring and auditing requirements, and implement measures to reduce transport impacts, including promoting efficient journey planning, vehicle sharing, and the use of low-emission transport where practicable;
- As is normal construction practice, an overall Traffic Management Plan will be developed in consultation with, and subject to the agreement of, all relevant local / roads authorities, which will take account of local scenarios, such as those raised by Kildare County Council, as appropriate;
- As stated in Section 4.1 of EIAR Appendix A7.2 (TMP), the Applicant will undertake pre-construction and post-construction visual pavement surveys on the haul roads. Where the Pavement surveys conclude that damage on the roadway is attributable to the Construction Phase of the Proposed Project, the Applicant will fund the necessary repairs and rehabilitation of any damage caused by the construction traffic; details of which will be agreed with the Roads Authority;
- As stated in Section 4.1 of EIAR Appendix A7.2 (TMP), for the proposed regional and local haul roads in County Kildare, it will be a contractual requirement that the appointed Contractor(s) undertake Falling Weight Deflectometer (FWD) surveys;
- Road Safety Audits have been undertaken for the preliminary design and will continue to be carried out at subsequent stages of the project, including a Stage 2 Road Safety Audit at detailed design stage and a Stage 3 Road Safety Audit following construction, in accordance with TII guidance GE-STY-01024. These audits provide an independent review of the design and built infrastructure to ensure that road safety considerations are fully addressed. The Applicant notes

the request that the Road Safety Audit should include coordination with the operation of Monaghan Mushrooms, however this would not be within the remit of a Road Safety Audit. The Applicant confirms that coordination with Monaghan Mushrooms will be included in the Construction TMP;

- The location of crossings is shown on EIAR Figure 4.2 – 4.60 – Project Component Overview. Plans showing details on open cut excavation, trenching, ducting and directional drilling within or under local and regional road in the Kildare County Council area will be produced as part of the detailed design. As outlined in Section 6.2 of EIAR Appendix A7.2 (TMP) the appointed Contractor(s) must apply for key licenses such as Road Opening Licence for these works and will submit to the relevant offices specifically Maynooth and Celbridge Municipal District Office in Kildare;
- As stated in Section 6.14 of Appendix A7.2 (TMP), the appointed Contractor(s) will agree and implement monitoring measures to monitor the effectiveness of the TMP and ensure compliance of same. It is not intended to appoint a Resident Engineer for TMP compliance, rather this will be managed via contract execution, as is normal practice;
- The appointed Contractor(s) will submit names and contact details of the Project Supervisor for the Design Process and Project Supervisor for the Construction Stage for all road works in Kildare to the Kildare County Council Transport, Mobility and Open Spaces Department, and agree in writing with the Planning Authority;
- As outlined in Section 6.2 of EIAR Appendix A7.2 (TMP), the list of consents, licences, notifications and permissions is non-exhaustive. This list will be further populated as required through planning compliance and stakeholder engagement to ensure that any additional consents are identified at the earliest opportunity. This will include obtaining a licence for the erection of fencing/hoarding on the public footpath, prior to works commencing, pursuant to Section 254 of the Planning and Development Act 2000, as amended;
- As outlined in Section 6.9 of EIAR Appendix A7.2 (TMP), the appointed Contractor(s) will liaise with the management of other construction projects who may be using the same haul roads and the local authority to co-ordinate deliveries;
- As outlined in Section 6.11 of EIAR Appendix A7.2 (TMP), regular visual surveys of the road network in the vicinity of the sites will be required to be carried out by the appointed Contractor(s). Where identified and required, as part of the contractual requirements the appointed Contractor(s) shall carry out road sweeping operations, employing a suction sweeper to remove any project related dirt and material deposited on the road network by construction/delivery vehicles. It will be a requirement of the works contract that the appointed Contractor(s) will be required to provide wheel cleaning facilities, and any other necessary measures to remove mud and organic material from vehicles. In addition, the cleaning of delivery lorries such as concrete delivery lorries shall be carried out at the material storage yard;
- As outlined in Section 4.3 of EIAR Appendix A7.2 (TMP), an additional contractual requirement will also be included to ensure that the appointed Contractor(s) will not be permitted to undertake loading and unloading activities off the side of the existing road network;
- The working hours suggested by Kildare County Council are not consistent with the working hours set out in the Proposed Project EIAR. As outlined in Section 6.9 of EIAR Appendix A7.2 (TMP), the typical working hours for the Construction Phase are Monday to Friday, 07:00 to 19:00, and 08:00 to 16:30 on Saturdays. Certain construction activities would need to be undertaken outside these typical working hours. These activities are detailed in Section 5.6 of EIAR Chapter 5. As per section 5.2 of the CEMP (EIAR Appendix A5.1), if activities require work outside the standard hours, and are not one of the defined activities included in Section 5.6 of EIAR Chapter 5, arrangements will be developed in consultation with the relevant Local Authority for these on a case-by-case basis to reflect the strategic nature of this project. It is also noted in Section 6.5.1.4 of EIAR Appendix A7.2 (TMP) that, following consultation with Kildare County Council, it was agreed to permit construction phase-generated traffic through Celbridge during night-time hours and for a limited period in the morning to facilitate access to the

Construction Working Width (RDX109 and RDX110), namely between 20:00 and 07:00 and between 10:00 and 11:30;

- No surface water arising from the proposed works will be discharged onto the public road network, footpaths or verges (mitigation measures in relation to surface water and drainage are included in the Surface Water Management Plan, which is Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan). Appropriate drainage and mitigation measures will be implemented in accordance with TII and local authority drainage requirements, to ensure that existing land and road drainage is not impaired as a result of the Proposed Project;
- The Applicant will engage in writing with the Maynooth and Celbridge Municipal District Engineer and arrange for pre-construction visual pavement surveys on the haul roads; and
- Detailed access point drawings will be developed as part of the detailed design.

9.4.4 Planning Conditions Specific to the Limerick Country Council Area

876. The prescribed body submission from Limerick County Council recommended a number of traffic-related conditions for proposed works within County Limerick be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council

877. This prescribed body submission requested the following traffic-related conditions be attached to any grant of planning for the Proposed Project:

- Any works requiring access from the public road network, temporary traffic management, or the movement of materials or equipment must be managed to safeguard road safety and residential amenity;
- Should access be required from any Limerick City and County Council public road to facilitate mast replacement or uprate works, the Applicant should be required to engage with the Roads Section in advance of commencing works. This is necessary to confirm suitability of access points, identify any constraints, and ensure that construction traffic is managed appropriately in a rural setting;
- Depending on the nature and location of works, a site-specific Temporary Traffic Management Plan may be required and must be agreed in advance with the Roads Section, and should include detailed traffic management drawings, advance warning signage, protection measures for vulnerable road users, and procedures to manage intermittent works along the corridor;
- Wheels and undercarriage of construction vehicles must be cleaned as necessary to prevent the carryover of soil or debris. A wheel wash system or equivalent measure must be installed at any site exit, and any soiling of the public road arising from construction traffic must be cleaned immediately;
- If any Limerick public roads are proposed to be used as haul routes, these must be submitted to Limerick City and County Council for prior written agreement which is recommended to form the basis of a condition; and
- Where the transport of abnormal loads through County Limerick is required, an Abnormal Load Permit. must be obtained from Limerick City and County Council in advance.

9.4.4.1 Applicant's Response

878. The Applicant acknowledges the recommended conditions and requirements within the submission from Limerick City and County Council. The Applicant is committed to ongoing consultation with Limerick City and County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or

monitoring measures in the EIAR, CEMP and TMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

879. The Applicant provides the following response for consideration:

- A TMP has been prepared and is included in EIAR Appendix A7.2. This details the measures for managing the construction traffic from the Proposed Project;
- As is normal construction practice, an overall Traffic Management Plan will be developed in consultation with, and subject to the agreement of, all relevant local / roads authorities, which will take account of local scenarios, such as those raised by Limerick City and County Council, as appropriate. As stated in Section 6.4 of EIAR Appendix A7.2 (TMP), the specific details of each temporary traffic measure will be developed by the appointed Contractor(s) for each site access, in consultation with the Roads Authority, An Garda Síochána and other emergency services, before being submitted to the Roads Authority for formal approval, prior to any works taking place. This will include detailed traffic management drawings, advance warning signage, protection measures for vulnerable road users, and procedures to manage intermittent works along the corridor, in line with the minimum requirements set out in EIAR Appendix A7.2 (TMP);
- As outlined in Section 6.11 of EIAR Appendix A7.2 (TMP), regular visual surveys of the road network in the vicinity of the sites will be required to be carried out by the appointed Contractor(s). Where identified and required, as part of the contractual requirements the appointed Contractor(s) shall carry out road sweeping operations, employing a suction sweeper to remove any project related dirt and material deposited on the road network by construction/delivery vehicles. It will be a requirement of the works contract that the appointed Contractor(s) will be required to provide wheel cleaning facilities, and any other necessary measures to remove mud and organic material from vehicles. In addition, the cleaning of delivery lorries such as concrete delivery lorries shall be carried out at the material storage yard;
- As outlined in Section 3.2 of EIAR Appendix A7.2 (TMP), the proposed haul roads have been determined following consultation with the relevant local authorities, including Limerick City and County Council, and are shown in Annex A of EIAR Appendix A7.2. Use of these routes will be a contractual requirement imposed on the appointed contractor(s). Where material sources and disposal/recovery sites are established by the appointed Contractor(s) and are not located along the designated haul roads off the national road network, the appointed Contractor(s) shall consult and agree in writing any amendments to haul roads with the relevant local authorities; and
- As per the response in Section 9.2.1 of this report, no abnormal loads are required for the Proposed Project.

9.4.5 Planning Conditions Specific to the Offaly County Council Area

880. The prescribed body submission from Offaly County Council recommended a number of traffic-related conditions for proposed works within County Offaly be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

881. This prescribed body submission requested the following traffic-related conditions be attached to any grant of planning for the Proposed Project:

- Pre / post full pavement analysis of all haul routes within County Offaly. The post-construction analysis shall be submitted within 12 months of completion;
- Pre / post structural survey including load bearing Capacity analysis of all bridges / culverts, or any other load bearing infrastructure along the proposed hauls routes within County Offaly. The post-construction survey shall be submitted within 12 months of completion;

- Prior to commencement of development, the developer shall undertake analysis of haul routes to ensure adequate width is available to accommodate the relevant plant that will utilise the routes;
- Prior to commencement of the development, the Applicant shall submit to Offaly County Council, details of the proposed maintenance and inspection regime for roads being utilised as haul routes through County Offaly to facilitate the development. The proposed Inspection regime shall be at monthly intervals, shall record defects encountered, maintenance issues identified, contain geo-located photographic records, and shall propose interventions to be undertaken to rectify defects/ maintenance issues at the Applicant's expense and a timeframe for doing so. Such reports shall be submitted to Offaly County Council on a monthly basis for review and acceptance. The Applicant shall be responsible for any public liability claims that arise in connection with damage caused on haul routes by the developer or their agents;
- Details of all access points from the public roadways in County Offaly into the site including access road tie in details, details of site boundary security measures adjoining public roads, wheel wash facilities, measures to mitigate dust and site material being deposited onto the public roadway, measures to mitigate impacts on existing roadside drainage, measures to control vehicle movements into and off of the site, maintenance of sightlines and security provisions at access points to site. Cleaning of Roads used as haul routes shall be carried out daily and as required at the Applicant's expense;
- Confirmation that abnormal load permits will be applied for as per Offaly County Council's requirements, a minimum of six weeks prior to anticipated load transportation to site;
- Due to peat based subgrades - the following routes are unsuitable for construction traffic, notably the L-1014-1 and R400-6,7,8,9,10; Should the developer wish to utilise these routes to facilitate development, a proposal to upgrade these routes, shall be submitted to, and agreed with Offaly County Council, with upgrades completed at the developers expense, prior to utilising these routes for construction related activities. A full pavement re-construction design shall be submitted to Offaly County Council for agreement, including Geotechnical and Site Investigation analysis undertaken, pavement design details and relevant supporting calculations used to establish the design proposal;
- Deviation from haul routes submitted within the planning application is not permitted unless written agreement has been received in advance from Offaly County Council;
- Roads shall be kept free from vehicles and obstructions throughout the duration of the development. Unloading / loading of materials on the public roadway is not permitted at any stage of the Proposed Project. Parking of vehicles along the public roadway is not permitted and the developer shall include such unloading / loading and parking provisions within the curtilage of the development site;
- Prior to commencement of development the developer shall submit detailed designs for the written agreement of the Planning Authority showing roadside drainage details at all site entrances within County Offaly;
- Lines of sight at all proposed entrances to the site shall be constructed and maintained strictly in accordance with the requirements of Table 1.3: Design Speed Related Parameters of TII Rural Link Road Design DN-GEO-03031, April 2017 in the interest of traffic safety;
- A Traffic Management Plan for each stage of the project where there is an interface with the public road network are required a minimum of four weeks prior to commencement of such works, and updated CEMP will be submitted to the Planning Authority for agreement prior to the commencement of any development;
- The Applicant shall maintain hedges and verges for the entire extent of traffic management signage and first sign forward sight distances for the duration of the traffic management. Where necessary, the Applicant shall provide a report from a suitably qualified person, outlining mitigation measures for hedge and verge maintenance between 1st March and 30th September;

- The costs and associated costs of a dedicated Resident Engineer per Municipal District (Birr, Tullamore and Edenderry) to be appointed by Offaly County Council for the duration of the development phase shall be borne by the Applicant for the duration of the project. Agreements of such costs shall be agreed in writing with the Planning Authority a minimum of nine months prior to commencement of the development;
- The Applicant shall consult with Offaly County Council, An Garda Síochána, Emergency Services and Bus Operators in relation to each stage of the works;
- Details of pipeline interactions with the public road network (crossings) at each interface location;
- (public and non-public roads) will be submitted. The details shall include, construction details, construction programme, traffic management designs, temporary traffic arrangements / controls on roads, reinstatement details and measures to protect existing public infrastructure during development works;
- A phasing programme indicating the timescale within which it is intended to use each public route to facilitate construction of the Proposed Project;
- Where Road Closures are required to facilitate works, details of Road Closures, including; Road No, Townland, start and end points, detour routes, traffic management plans, proposed start and end dates and times and purpose of road closure must be submitted to Offaly County Council eight weeks prior to required closure date;
- Appropriate engagement to be undertaken with TII in relation to proposed road crossings and haul routes on national secondary roads within County Offaly;
- The requirement for early communication on diversions / impacts on traffic flow on the County Offaly road network should be clearly reflected within the updated CEMP;
- Details of the Applicant's Project Management Structure for the Proposed Project and points of Contact during the management of the project;
- The Applicant shall submit a proposed schedule of project update meetings to be held with Offaly County Council Management and the Applicant's Management at agreed intervals throughout the duration of the Proposed Project; and
- Consultation with Irish Rail in respect of the proposed trenchless crossing on the Dublin-Galway railway line between Killeigh and Geashill.

9.4.5.1 Applicant's Response

882. The Applicant acknowledges the recommended conditions and requirements within the submission from Offaly County Council. The Applicant is committed to ongoing consultation with Offaly County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR, CEMP and TMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

883. The Applicant provides the following response for consideration:

- As set out in Section 4.1 of EIAR Appendix A7.2 (TMP) pre-construction and post-construction road condition surveys will be undertaken. The Applicant acknowledges Offaly County Council requirement and confirms that the post-construction survey will be submitted within 12 months of completion;

- The Applicant accepts and acknowledges the Council's requirement to undertake pre- and post-structural surveys, including load-bearing capacity analysis of all bridges, culverts, and other load-bearing infrastructure along the proposed haul routes within County Offaly. This will be undertaken, and the post-construction survey will be submitted within 12 months of completion;
- A comprehensive review of haul roads has been undertaken, including the identification of potential pinch points along the network, as identified in Table 4.1 of EIAR Appendix A7.2 (TMP). The identified constraints will be managed through appropriate traffic management measures, as outlined in Section 4.2.1 of EIAR Appendix A7.2;
- As outlined in Section 6.11 of EIAR Appendix A7.2 (TMP), regular visual surveys of the road network in the vicinity of the sites will be undertaken by the appointed Contractor(s). In addition, the Applicant will submit to Offaly County Council details of a proposed maintenance and inspection regime for roads utilised as haul roads within County Offaly. This regime will be undertaken at monthly intervals and will record defects encountered, identify maintenance issues, include geo-located photographic records, and set out proposed interventions and associated timeframes to rectify any defects. As stated in Section 4.1 of EIAR Appendix A7.2 (TMP), where pavement surveys determine that damage to the roadway is attributable to the Construction Phase of the Proposed Project, the Applicant will fund the necessary repairs and rehabilitation works, with details to be agreed with the relevant Roads Authority. The Applicant shall ensure that appropriate insurance cover is put in place directly and/or through its contractors to ensure that any valid claims which may arise may be addressed accordingly;
- The Applicant accepts and agrees to the Council's requirement to provide details of all access points from the public road network in County Offaly into the site, including access road tie-in arrangements, site boundary security measures adjoining public roads, wheel wash facilities, and measures to mitigate dust and the deposition of site materials onto the public roadway. The Applicant confirms that measures will also be implemented to protect existing roadside drainage, control vehicle movements into and out of the site, and maintain adequate sightlines (or implement suitable alternative traffic management measures) and security at all access points. As outlined in Section 6.11 of EIAR Appendix A7.2 (TMP), regular visual surveys of the road network in the vicinity of the sites will be required to be carried out by the appointed Contractor(s). Where identified and required, as part of the contractual requirements the appointed Contractor(s) shall carry out road sweeping operations, employing a suction sweeper to remove any project related dirt and material deposited on the road network by construction/delivery vehicles;
- As stated in Section 5.3.2 of EIAR Appendix A5.1 (CEMP), no abnormal loads are anticipated for the Proposed Project. However, should any abnormal loads be required, the necessary applications will be made in accordance with Offaly County Council's requirements, a minimum of six weeks in advance of the anticipated transportation of such loads to the site;
- The Applicant acknowledges the concerns raised in relation to peat-based subgrades and the suitability of the proposed haul roads listed. The proposed haul routes within County Offaly are limited to the L1014 and the R400 only. As mentioned previously no abnormal loads are anticipated for the Proposed Project. Therefore, full road reconstruction is not expected to be required. Pre- and post-construction surveys will be carried out. If these surveys indicate that significant deterioration has occurred and is attributable to construction traffic, the Applicant will submit a detailed proposal to Offaly County Council for agreement in advance of any remedial works. This will include a full pavement reconstruction design supported by geotechnical and site investigation data, design details, and relevant calculations. Any required works will be undertaken at the Applicant's expense;
- The Applicant accepts and agrees that deviation from the haul roads submitted within the planning application shall not be permitted unless written agreement has been received in advance from Offaly County Council;
- As stated in 4.3 of Appendix 7.2 (TMP) an additional contractual requirement will also be included to ensure the appointed Contractor(s) that they will not be permitted to undertake loading and unloading activities off the side of the existing road network;

- The Applicant accepts and agrees that, prior to the commencement of development, detailed designs for roadside drainage at all site entrances within County Offaly will be submitted to the Planning Authority for written agreement;
- The Applicant accepts and agrees that sight lines at all proposed entrances will be constructed and maintained (or suitable alternative traffic management measures implemented). As outlined in Section 4.3 of Appendix 7.2 (TMP) it is anticipated that a number of the proposed access points will not conform to sight line visibility splay requirements as set out by the Transport Infrastructure Ireland (TII) Publication (Standards) or in Local/County Development Plans. Where the visibility splay is constrained at an access point a TMO will be provided at accesses where there are constraints to the visibility splay requirements. The TMO will be available to control the access and egress to and from the site access;
- As stated in Section 8 of EIAR Appendix A7.2 (Traffic Management Plan), the TMP will be developed further through the Detailed Design and Construction Phase, with ongoing consultation with the local authority, An Garda Síochána, emergency services, and other relevant stakeholders. The Applicant accepts and agrees that a Traffic Management Plan for each stage of the project involving an interface with the public road network will be prepared and submitted to the Planning Authority for agreement a minimum of four weeks prior to the commencement of such works. An updated Construction Environmental Management Plan (CEMP) will also be submitted for agreement prior to the commencement of development;
- The Applicant accepts and agrees that hedges and verges shall be maintained for the entire extent of traffic management signage and first sign forward sight distances for the duration of the traffic management. Where necessary, the Applicant will provide a report from a suitably qualified person outlining mitigation measures for hedge and verge maintenance between 1st March and 31st August (in accordance with the Wildlife Act). The Applicant confirms that hedgerows will be maintained as required to ensure and maintain optimum visibility;
- As stated in Section 6.14 of Appendix A7.2 (TMP), the appointed Contractor(s) will agree and implement monitoring measures to monitor the effectiveness of the TMP and ensure compliance of same. It is not intended to appoint a Resident Engineer for TMP compliance, rather this will be managed via contract execution, as is normal practice;
- The Applicant will consult with Offaly County Council, An Garda Síochána, Emergency Services and Bus Operators in relation to each stage of the works;
- The Applicant accepts and agrees that details of pipeline interactions with the public road network at each interface location will be submitted. These will include construction details, construction programme, traffic management designs, temporary traffic arrangements and controls, reinstatement details, and measures to protect existing public infrastructure during construction works;
- The Applicant accepts and agrees that a phasing programme will be prepared and submitted, indicating the timescale within which it is intended to utilise each public route to facilitate construction of the Proposed Project;
- The Applicant accepts and agrees that where road closures are required, full details including road number, townland, start and end points, diversion routes, traffic management plans, proposed dates and times, and purpose of closure will be submitted to Offaly County Council a minimum of eight weeks prior to the required closure date;
- The Applicant accepts and agrees that appropriate engagement will be undertaken with TII in relation to proposed road crossings and haul routes on national secondary roads within County Offaly;
- The Applicant accepts and agrees that the requirement for early communication in relation to diversions and impacts on traffic flow on the County Offaly road network will be clearly reflected within the updated Construction Environmental Management Plan (CEMP);

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- The Applicant accepts and agrees that details of the Project Management Structure for the Proposed Project, including key points of contact during the construction phase, will be submitted to Offaly County Council;
- The Applicant accepts and agrees to submit a proposed schedule of project update meetings to be held with Offaly County Council Management and the Applicant's Management at agreed intervals throughout the duration of the Proposed Project; and
- The Applicant accepts and agrees that consultation will continue with Irish Rail in respect of the proposed trenchless crossing of the Dublin–Galway railway line between Killeigh and Geashill.

9.4.6 Potential Traffic Impacts in the Tipperary Country Council Area

884. The prescribed body submission from Tipperary County Council raised concerns about the road and traffic impacts in County Tipperary resulting from the Proposed Project:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

885. This prescribed body submission raised concerns about potential damage to the road network and adequacy of proposed mitigation for road closures and construction traffic. The submission continued that the concerns are focused on HGVs accessing and egressing the site at the interface of the haul routes and the public road network, damage to the surrounding roads networks from bulk materials coming to and from the site, and large scale construction projects at the proposed WTP at Birdhill and the BPT at Cloughjordan.

9.4.6.1 Applicant's Response

886. As outlined in EIAR Appendix A7.2 (TMP), including Sections 6.4 to 6.6, detailed site-specific temporary traffic management measures will be developed by the appointed Contractor(s) in consultation with the relevant Roads Authorities, An Garda Síochána, and other stakeholders, and will be submitted for approval prior to the commencement of works. These measures will ensure the safe management of HGV movements at the interface with the public road network.

887. Mitigation measures to protect the road network include the use of designated haul routes, implementation of appropriate traffic management and signage, and the management of road closures and diversions in consultation with the relevant authorities. HGV movements will be managed through delivery timing restrictions, including avoidance of peak periods where practicable, and coordination with stakeholders.

888. Road condition monitoring and protection measures are also provided, including regular inspections and road cleaning, as well as the use of GPS tracking and traffic monitoring to ensure compliance with designated haul routes. The Applicant confirms that any damage attributable to construction traffic will be rectified in accordance with the requirements of the relevant Road Authority.

889. Accordingly, the Applicant considers that the mitigation measures set out in the EIAR and TMP are robust and will ensure that potential impacts on the road network are appropriately managed and minimised.

9.4.7 Planning Conditions Specific to the Tipperary Country Council Area

890. The prescribed body submission from Tipperary County Council recommended a number of traffic-related conditions for proposed works within County Tipperary be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

891. This prescribed body submission requested the following traffic-related conditions be attached to any grant of planning for the Proposed Project:

- To establish a detailed baseline condition of the existing roads which are likely to be impacted by the Proposed Project, a pre-condition survey is to be undertaken in advance of construction on all public roads and bridges that will be used in connection with the Proposed Project. The extent of the survey area to be agreed with Tipperary County Council and the baseline study should be carried out in accordance with the Guidelines on the Depth of Overlay to be used on Rural Regional and Local Roads (Orange Book) and should include Falling Weight Deflection (FWD) and Pavement Surface Condition Index (PSCI);
- The extent of the survey is dependent on the works activities in the vicinity of the site access points and the existing road construction. The extent of the surveys should be agreed with the Local Authority Roads Section prior to construction works commencing on-site;
- A 100m section of the existing non-bituminous roads to the access / egress points should be replaced with a bituminous construction, details to be agreed on an individual basis;
- There should be measures and protocols established to prevent overlaid vehicles involved in the Proposed Project from using the surrounding road network; and
- A wheel wash should be installed during the Construction Phase.

9.4.7.1 Applicant's Response

892. The Applicant acknowledges the recommended conditions and requirements within the submission from Tipperary County Council. The Applicant is committed to ongoing consultation with Tipperary County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR, CEMP and TMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

893. The Applicant provides the following response for consideration:

- As stated in Section 4.1 of EIAR Appendix A7.2 (TMP), the Applicant will undertake pre-construction and post-construction visual pavement surveys on the haul roads. A Falling Weight Deflectometer (FWD) survey will also be carried out as part of the pavement assessment programme. Where the Pavement surveys conclude that damage on the roadway is attributable to the Construction Phase of the Proposed Project, the Applicant will fund the necessary repairs and rehabilitation of any damage caused by the construction traffic; details of which will be agreed with the Roads Authority;
- The Contractor will be required to undertake all works in accordance with relevant legislation. This includes The Road Traffic (Construction and Use of Vehicles) Regulations, as amended, which sets out the maximum permitted weights and dimensions of mechanically propelled vehicles and trailers. As per the response in Section 9.2.1 of this report, no abnormal loads are required for the Proposed Project. However, if this changes, as per Section 3.4 of EIAR Appendix A7.2 (TMP), where it is proposed to carry a load which is such that the gross weight or axle weights are in excess of the legal limits or the dimensional or projecting limits are breached, a permit must be obtained from the relevant local authority or authorities through whose functional area(s) the load would be carried.

894. It is not proposed to replace existing non-bituminous roads to the access / egress points with a bituminous construction. As outlined in Section 6.11 of EIAR Appendix A7.2 (TMP), regular visual surveys of the road network in the vicinity of the sites will be required to be carried out by the appointed Contractor(s). Where identified and required, as part of the contractual requirements the appointed Contractor(s) shall carry out road sweeping operations, employing a suction sweeper to remove any project related dirt and material deposited on the road network by construction/delivery vehicles. It will be a requirement of the works contract that the appointed Contractor(s) will be required to provide wheel cleaning facilities, and any other necessary measures to remove mud and organic material from vehicles. In addition, the cleaning of delivery lorries such as concrete delivery lorries shall be carried out at the material storage yard.

10. Biodiversity

10.1 Overview

895. Seventy-three of the 114 submissions raised the issue of biodiversity in relation to the Proposed Project.
896. An assessment of biodiversity was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 8 – Biodiversity. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
897. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding biodiversity. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 2 (Overarching Matters);
 - Chapter 6 (Proposed Project Description);
 - Chapter 7 (Construction and Commissioning);
 - Chapter 11 (Water (Hydrological Modelling and Water Levels));
 - Chapter 12 (Water (General)); and
 - Chapter 25 (Natura Impact Statement).
898. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
899. The submissions were in relation to various elements of the biodiversity assessment, including potential impacts on habitats and protected species, potential impacts from the proposed abstraction, including in relation to water quality and fish, and potential impacts from the spread off invasive and non-native species, all of which have been considered in the EIAR and appropriate mitigation measures proposed.
900. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding biodiversity;
 - Specific matters raised in general observer submissions regarding biodiversity; and
 - Specific matters raised by Prescribed Bodies regarding biodiversity.
901. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.
902. Many of the submissions that raise concerns over the impact on the Lower River Shannon assert that the assessment has not adequately addressed the likelihood that the statutory minimum compensation flow will change in the future. The assessment does not assume that the historic origin of the 10 m³/s statutory minimum compensation flow is determinative for Habitats Directive compliance. Instead, the assessment is based on the current statutory flow regime, which is legally binding and forms part of the existing hydrological baseline for the affected water bodies. ESB maintains this minimum compensation flow under its statutory obligations, and the Proposed Project will not alter, constrain or influence these requirements.

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903. Under the Habitats Directive, a proposed plan or project shall not be authorised where it would adversely affect, or risk adversely affecting, the integrity of a site, including by undermining the conservation objectives established to secure the attainment or maintenance of the favourable conservation status of the relevant qualifying interest.
904. The hydrological modelling tests the system under varying scenarios, including normal, flood and drought conditions – the latter two being when ecological sensitivity is most prevalent, potentially.
905. The Natura Impact Statement (NIS) assesses, on the basis of the same modelling outputs, whether the proposed abstraction would impede the attainment of the European site's (Lower River Shannon Special Area of Conservation (SAC)) conservation objectives, and demonstrates that the abstraction will not prevent the achievement of those objectives necessary to secure the recovery and maintenance of the favourable conservation status of the relevant qualifying interests.
906. These assessments also inform the conclusions of the EIAR which has to account for future changes in the baseline.
907. Any future baseline regime would be decided at a programmatic level, through the River Basin Management Plan (RBMP), national policy or a regulatory process, and is independent of the Proposed Project.
908. The overall conclusion of all the assessments is that the abstraction does not limit or prejudice the State's ability to revise compensation flows in the future to achieve a more naturalised flow regime, if this were required.

10.2 Response to General Issues Raised

10.2.1 Potential Impact of the Proposed Project on Biodiversity

909. The following submissions raised concerns about the potential general impact of the Proposed Project on biodiversity:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_12	Dr. John Galvin
WSP_SUB_42	Eileen McNamara
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_60	Michael Barker and Company
WSP_SUB_65	Samuel Norris
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_90	James Waldron (Corr Property Consultants on behalf of)
WSP_SUB_92	Judith Kohler
WSP_SUB_93	Michael McKeogh
WSP_SUB_101	Edward Frayne
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

Unique ID	Name of Individual or Organisation
WSP_SUB_114	Tipperary County Council

10.2.1.1 Applicant's Response

910. Chapter 8 (Biodiversity) of the EIAR reports the assessment of the likely significant effects of the Proposed Project on biodiversity during the Construction Phase and Operational Phase, in accordance with the requirements of the EIA Directive. This chapter of the EIAR describes and assesses the likely direct and indirect significant effects of the Proposed Project on biodiversity, including interactions between flora and fauna, with particular attention to species and habitats protected under Directive 92/43/EEC (Habitats Directive) and Directive 2009/147/EC (Birds Directive).
911. Through the implementation of well-established approaches to mitigation, which will be implemented in accordance with best practice guidance, it will be possible to reduce the potential effects to not significant for the majority of ecological receptors. However, even after the application of mitigation measures, there would be likely significant residual effects on the following Key Ecological Receptors (KERs):
- Likely significant negative residual effect on terrestrial habitats at the local to international geographic scale during construction due to the permanent loss of habitat from the infrastructure sites, access roads, and other permanent infrastructure (e.g. land-take associated with the Air Valves, Line Valves, Washout Valves and Lay-Bys; Table 8.56 of the EIAR)
 - Short-term likely significant negative residual effects on bats at a local level during construction due to loss of five roosts and construction activities resulting in loss and fragmentation of habitat
 - Short-term likely significant negative residual effects on badger at a local level during construction due to loss of 33 setts.
912. Overall, the assessment demonstrates that the Proposed Project has been designed and will be implemented with a strong commitment to environmental protection and the conservation of biodiversity. The embedded and additional mitigation measures, outlined in Chapter 8 (Biodiversity) of the EIAR, reflect best practice and are informed by detailed ecological surveys, ensuring that impacts are avoided, reduced, or offset wherever feasible. While some residual effects remain, these are limited in extent, duration, and geographic scale, and are not considered to undermine the overall integrity of biodiversity within the receiving environment.
913. Importantly, the mitigation strategy includes targeted measures such as habitat reinstatement, sensitive timing of works to avoid or reduce disturbance effects on species and their habitats, species-specific protection plans, and ongoing ecological monitoring, all of which will contribute to the recovery and long-term resilience of affected habitats and species. These measures, combined with adaptive management where required, supervised by an Ecological Clerk of Works (ECOW), will ensure that ecological impacts and biodiversity protection are effectively managed throughout the lifecycle of the Proposed Project.
914. In this context, the Proposed Project aligns with the objectives of the relevant European and national biodiversity policies, and demonstrates that, with robust mitigation in place, development and biodiversity conservation can be successfully balanced.

10.2.2 Potential Biodiversity Impacts to the River Shannon

915. The following submissions raised concerns about the potential impacts on the biodiversity of the River Shannon as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_59	Melina Sharp and Michael Eversen
WSP_SUB_60	Michael Barker and Company
WSP_SUB_101	Edward Frayne
WSP_SUB_106	Liam Minehan
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

10.2.2.1 Applicant's Response

916. The potential impacts on biodiversity were comprehensively assessed in Chapter 8 (Biodiversity) of the EIAR. This assessment considered all KERs within the Zone of Influence (ZoI) of the Proposed Project, including those within Parteen Basin, as well as upstream and downstream receptors within the wider River Shannon catchment. The assessment of the River Shannon catchment was refined to focus on the ZoI, ensuring that all likely significant effects were appropriately identified and evaluated.
917. A range of potential impact pathways were evaluated, including, but not limited to: changes to hydrology and flow regimes; impacts on water quality (including sedimentation, nutrient release, and pollution risks); disturbance to aquatic and riparian habitats; direct and indirect effects on designated sites; and potential impacts on protected and notable species, including fish, mammals, birds, and aquatic invertebrates. Consideration was also given to habitat loss or alteration, habitat fragmentation, and the potential for the spread of invasive species.
918. Appropriate mitigation measures have been incorporated into the design and will be implemented during construction and operation to avoid, reduce, or offset potential impacts. These include the application of best practice construction management measures to protect water quality (such as silt and pollution control), timing of works to avoid sensitive periods for key species, and adherence to relevant environmental protection guidelines. Measures to minimise disturbance to fauna, protect and, where necessary, reinstate habitats, and prevent the introduction or spread of invasive species are also included.
919. With the implementation of these mitigation measures, it is concluded that the Proposed Project will not result in likely significant effects on biodiversity within Parteen Basin or the wider River Shannon catchment.

10.2.3 Potential Impact of the Proposed Abstraction on Habitats and Species

920. The following submissions raised concerns about the potential impact of the proposed abstraction on habitats and species:

Unique ID	Name of Individual or Organisation
WSP_SUB_02	Fight the Shannon Pipeline
WSP_SUB_05	Yvonne Moloney
WSP_SUB_07	Bridget Ginnity
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_10	Christopher Campion

Unique ID	Name of Individual or Organisation
WSP_SUB_11	Councillor Seán Hartigan
WSP_SUB_12	Dr. John Galvin
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_15	Fergal Hayes
WSP_SUB_16	Joanne Skehan
WSP_SUB_17	Joe Mayo
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_20	Kieran O'Connor
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_22	Michael Reidy
WSP_SUB_23	Michelle Keary
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannan's Fishing Club
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_30	Terry Forristal
WSP_SUB_31	Tony O'Brien
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_35	Castleconnell River Association
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan -Walsh
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_39	Derg Open Water Swim School and the swim group "Lively Wimmin Swimmin"
WSP_SUB_40	Diarmuid O' Crowley
WSP_SUB_50	James Crowley
WSP_SUB_51	John Baker
WSP_SUB_54	Killaloe Ballina District Angler's
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_57	Lucy Murphy
WSP_SUB_60	Michael Barker and Company
WSP_SUB_63	Port Omna Beo
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_66	Sarah Conroy
WSP_SUB_68	The Local Authority Waters Programme (LAWPRO)
WSP_SUB_69	The Lough Derg Anglers Association

Unique ID	Name of Individual or Organisation
WSP_SUB_72	Carol Killeen
WSP_SUB_82	Councillor Rita McInerney
WSP_SUB_88	Inland Fisheries Ireland (IFI)
WSP_SUB_112	Limerick County Council

10.2.3.1 Applicant's Response

921. Potential impacts associated with the proposed abstraction during the Operational Phase of the Proposed Project are assessed in Chapter 8 (Biodiversity) of the EIAR and in the Natura Impact Statement (NIS). The assessments considered a range of potential impacts, including hydrological changes, the introduction or spread of invasive non-native species (INNS), disturbance or displacement of fauna, pollution risks, and potential mortality risks.
922. To inform the assessment of potential hydrological and water quality impacts associated with the proposed abstraction, a hydrological model and a water quality model of Lough Derg and Parteen Basin were constructed to simulate the existing relationship between Lake levels, flows, and water quality. Model simulations used data obtained through monitoring work on Lough Derg and Parteen Basin. Full details of the models are provided in EIAR Appendix A9.1 Annex A (Hydrological Modelling Report) and EIAR Appendix A9.1 Annex B (Water Quality Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels).
923. The hydrological model was used to assess the impact of the proposed abstraction on the water levels of Lough Derg and Parteen Basin and the forward flows released to the Old River Shannon. Two constant rates of abstraction were investigated: i) 154Mld – taken to be representative of normal operation demand by the year 2050, and ii) 300Mld – projected peak need/demand at year 2050. The model was run using data from the period 1 January 1972 to 31 October 2023, allowing the simulation of daily levels and daily flows across this 52-year period with and without the proposed abstraction in place.
924. Throughout the 52 years analysed (1972 to 2023), the impacts to the Lough Derg and Parteen Basin Lake levels and forward flows to the Old River Shannon due to the modelled inclusion of the Proposed Project abstraction (as a constant flow of either 154Mld or 300Mld) are barely distinguishable from the baseline case when viewed on level/flow duration curves (a standard hydrological method for comparing long-term data series). The Lake⁴ level regimes are only simulated to be affected by the proposed abstraction during extreme drought periods (1995 and 2018) and in the days immediately after the drought (up to a week) when inflow is needed to replenish any deficit in storage caused by the Proposed Project. For approximately 99% of the 52-year model simulation period, there are no perceptible impacts to simulated Lake levels as a result of the proposed abstraction.
925. As noted in the Planning Application, ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power

⁴ Lough Derg and Parteen Basin together are referred to herein as the 'Lake'.

and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference.

926. During flood flows, when the ESB can no longer keep the water level below the top of the Normal Operating Band, the ESB can operate Ardnacrusha at full capacity as they have done in the past, and the Proposed Project abstraction flow would be provided from Lake storage resulting in a lowering of the water level compared with baseline flood conditions.
927. In drought conditions, if the water flowing into Lough Derg reduces sufficiently, ESB will cease power generation, and the minimum statutory compensation and fish pass flows are prioritised over the use of water by Ardnacrusha. In these circumstances the abstraction by the Proposed Project would be provided from the Lake storage resulting in a lowering of the water level compared with the baseline drought conditions.
928. The simulated forward flows⁵ to the Old River Shannon remain unchanged by the inclusion of the Proposed Project abstraction. The proportion of days (to the nearest whole percent) when the Old River Shannon is receiving the minimum required compensation and fish pass flows is simulated to be unchanged by the inclusion of the Proposed Project abstraction, as does the timing of the spill flows down Old River Shannon when Ardnacrusha is at full capacity.
929. From the 52-year model simulation (1972 to 2023), the 2018 drought event shows the most notable impact to simulated Lake levels from the inclusion of the Proposed Project abstraction. These 2018 drought drawdown effects are further increased when accounting for future 2080s climate change impacts. However, the additional drawdown is still fitting within the range of ESB normal observed levels, still remaining within the Lough Derg/Parteen Basin normal operating levels, and would mean no change to the Old River Shannon minimum compensation flows.
930. The hydrological model demonstrates that any abstraction-related changes to water levels are negligible and largely confined to extreme drought conditions, with no measurable influence on flood magnitude, timing, duration or frequency, therefore the proposed abstraction would not have any likely significant effect on habitats and species within Parteen Basin and the wider River Shannon catchment.
931. None of the potential direct or indirect likely significant effects associated with the Proposed Project would affect the conservation objectives of any of the qualifying interest habitats or species of the Lower River Shannon SAC. Mitigation measures are included to ensure the retention and protection of qualifying interest habitats, to ensure that the structural integrity and functioning of the habitats within the SAC are not affected during the Construction Phase or Operational Phase. These measures would ensure the protection of the receiving air and water environments, to prevent the spread/introduction of plant INNS within and to the SAC and to ensure that the Proposed Project does not present a mortality risk or barrier to the movement of the otter, salmon and lamprey populations of the Lower River Shannon SAC (refer to Table 7.5 of the NIS for how these mitigation measures relate back to the qualifying interests and conservation objectives of the Lower River Shannon SAC).
932. While no adverse effects on the integrity of the Lower River Shannon SAC are predicted, some minor residual effects on biodiversity have been identified. These include:

⁵ Simulated forward flows refers to flows downstream from Parteen Basin to the Old River Shannon.

- A permanent loss of approximately 0.55ha of mixed broadleaved/conifer woodland (WD2) and 216.87m of treelines (WL2) at the proposed Raw Water Intake and Pumping Station (RWI&PS); and
- Localised impacts on bat populations.

933. However, these residual effects are limited in scale and extent, and would not significantly affect the ecological structure, function, or overall biodiversity value of Parteen Basin. The integrity and conservation objectives of the Lower River Shannon SAC would also remain fully maintained, and the site will continue to support its qualifying habitats and species in a favourable condition.

934. Additional responses relevant to these submissions are provided in Section 10.3.5.1, Section 10.3.12.1 and Section 10.4.6.1 of this report.

10.2.4 Potential Impact of Leakages during the Operational Phase on Biodiversity

935. The following submission raised concerns about the potential impact of leakages on biodiversity, if they occur during the Operational Phase of Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_76	Melissa Anne Kenny

10.2.4.1 Applicant's Response

936. The potential for likely significant effects in relation to repair and maintenance activities during the Operational Phase has been assessed in Section 8.7 in Chapter 8 (Biodiversity) of the EIAR. Impacts considered included:

- Habitat degradation as a result of pollution (i.e. chemically treated water entering watercourses)
- Habitat degradation associated with hydrological impacts (i.e. increased sediment loading, scouring and destabilisation of the channel beds and banks).

937. In line with the Operational Strategy (EIAR Appendix A4.1), in the unlikely event that a leakage incident should occur, remotely operated automated Line Valves will be closed in order to limit the amount of water that can discharge from the affected section of pipe. If required, the section of pipe can then be drained down, water will be de-chlorinated and there will be a controlled discharge to nearby watercourses, at flow rates appropriate to their capacity. De-chlorination prior to discharge to the environment will be achieved by using sodium sulphite dechlorination tablets inserted into perforated wire mesh baskets at the washout chamber or permanent outfall structure. Dechlorination is achieved almost immediately on contact with the tablets. This method provides the most flexible approach for the removal of low chlorine residual and is suited to the infrequent discharges from Washout Valves. Levels of residual chlorine would be reduced to below <0.005mg/L, as required by the Quality of Salmonid Waters Regulations (1988). All sweetening flow discharges (required during the commissioning phase) would be monitored for chlorine residual, and de-chlorinated prior to entering any watercourse as part of the embedded design measures.

938. In addition, a number of controls and features have been designed into the system for discharging from Washout Valves as follows:

- Discharges will be made using flexible hoses where flow rates permit: discharge rates to land drain discharges from Washout Valves will be limited to a maximum of 15l/s; discharge rates to minor water bodies will be limited to a maximum of 25l/s
- Discharge to water bodies will be limited to a maximum of 20% of the stream's median annual flow (Qmed)

- The rate of release will be managed to prevent scour from or increased sediment loads to the receiving watercourses
- The flow of water from the valve chambers to the watercourse will be controlled in accordance with EPA and OPW requirements (post-planning) and will follow a draindown strategy which matches flow to capacity of the receiving watercourse to prevent scour, erosion and increased sediment load in the receiving watercourses, including:
 - Outfalls will be at a 45-degree angle and in line and at a level with the watercourse bed
 - The headwall will be set back into the channel banks so it is flush with the bank profile
 - The headwall adjacent to the riverbank will be kept free of vegetation and debris and the riverbank will be checked for scour damage and erosion regularly and defects remedied early
 - If clean water from any Principal Infrastructure Site, the RWRM, or the Treated Water Pipeline is required to be discharged into a watercourse, a baffle will be fitted to the discharge point to prevent disturbance of the watercourse bed.

939. Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur. Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners is minimised. Pre-emptive monitoring and inspections will be carried out routinely to allow the Applicant to identify and address any potential issues before they arise.

940. Following implementation of the embedded design measures to control discharges from Washout Valves (as detailed in Section 8.7.3 of the EIAR), there would be no impact on water quality during the operation of the Proposed Project and thus there are no likely significant negative effects on the aquatic habitats or plant community KERs, at any geographic scale.

10.2.5 Potential Impacts of Algal Bloom in Lough Derg

941. The following submissions raised concerns about the potential impacts of algal bloom in Lough Derg:

Unique ID	Name of Individual or Organisation
WSP_SUB_10	Christopher Campion
WSP_SUB_14	Eva Killeen
WSP_SUB_15	Fergal Hayes
WSP_SUB_17	Joe Mayo
WSP_SUB_20	Kieran O'Connor
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannan's Fishing Club
WSP_SUB_29	Suzanne Noble
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_38	Councillor Seamie Morris
WSP_SUB_39	Derg Open Water Swim School and the swim group "Lively Wimmin Swimmin"
WSP_SUB_40	Diarmuid O' Crowley

Unique ID	Name of Individual or Organisation
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_57	Lucy Murphy
WSP_SUB_58	McKeogh's Hardware Ltd.
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_63	Port Omna Beo
WSP_SUB_72	Carol Killeen

10.2.5.1 Applicant's Response

942. Algae blooms have been reported on Lough Derg, as recently as September 2025, as a result of blue-green algae (cyanobacteria). Occurring in specific temperature, light, nutrient, wind speed and direction conditions, the algae can evolve to produce toxins from a non-toxic state. Blue-green algae develop populations relatively slowly during the year, appearing in low numbers in late spring before evolving during the summer and peaking in early autumn.
943. To assess the potential impact of the Proposed Project, the Applicant commissioned a specialist water quality modelling study by MarCon Computations International. This study involved building a three-dimensional hydrodynamic and water quality model, informed by eight years of data collection, including automatic monitoring stations, weather data, and bathymetric surveys, to validate the model predictions. The modelling focused on drought conditions, specifically a drought equivalent to the one experienced in 2018 which is the worst on record for the Shannon Catchment. This is because drought conditions are when water quality risks are highest. The model tested a range of scenarios, including peak abstraction and future climate change and examined key risks such as algal blooms and pollutant concentration.
944. Findings from the water quality modelling, which are reported in EIAR Appendix A9.1 (Abstraction Assessment), as well as Annex B of Appendix A9.1 (Water Quality Modelling Report) show that across all modelled scenarios which included climate change, predicted changes in water quality were minimal and within the natural variability of the system. The modelling indicates that the Proposed Project i.e. the draw down in water levels in a drought event, would have a neutral effect on water quality in Lough Derg and Parteen Basin. Given the neutral effect on water quality, which includes nitrate and orthophosphate levels (which are key nutrients in the formation of algal bloom), the Proposed Project would not cause or worsen the occurrence of harmful algal blooms.
945. In the event that there is an algal bloom in Parteen Basin, the microfiltration plant at the RWI&PS would also remove any algal biomass prior to treatment at the Water Treatment Plant (WTP).

10.2.6 Potential for Aquatic Habitat Loss or Damage

946. The prescribed body submission from The Heritage Council raised concerns about the potential impact of the Proposed Project on aquatic habitat, particularly the potential loss or damage to this habitat type at the proposed RWI&PS site, and associated impacts on qualifying interest species of the Lower River Shannon SAC:

Unique ID	Name of Prescribed Body
WSP_SUB_98	The Heritage Council

10.2.6.1 Applicant's Response

947. The design of the RWI&PS has been developed with a strong emphasis on avoiding or reducing likely significant effects on KERs (including aquatic habitat and qualifying interests of the Lower River Shannon SAC) through embedded mitigation within the design and through Construction Phase planning. These were set out in Chapter 4 (Proposed Project Description) and Chapter 5: Construction & Commissioning of the EIAR and formed the basis of assessment.
948. The inlet structure would be located on the banks of Parteen Basin; however, the footprint has been optimised to reduce interaction with sensitive aquatic receptors. The main Raw Water Pumping Station Building substructure requires excavation of up to 14.2m below ground level, but the extent of excavation has been significantly reduced through the use of secant piled perimeter walls. This approach would substantially limit open excavation, reduce the volume of disturbed material, and provide early structural support to minimise impacts on fisheries habitat within Parteen Basin.
949. Construction would be undertaken using controlled piling and staged excavation techniques, with works sequenced to limit the spatial extent of disturbance at any one time. A temporary piling platform within Parteen Basin would be designed to safely install secant piles along the shoreline for the Intake Chamber. This platform would be fully removed following completion of substructure works, thereby reducing any permanent occupation within Parteen Basin and ensuring reinstatement of the temporary working area.
950. To prevent mobilisation of suspended sediments and to avoid deterioration in water quality, a double row of heavy-duty Type 3 silt curtains will be installed in advance of any in-water works and maintained for the full duration of construction activities. These curtains will fully enclose the works area and will be regularly inspected and maintained to ensure continued effectiveness in preventing sediment escape into the wider Parteen Basin. Dredging and reprofiling operations (approximately 70m by 25m) would only proceed once sediment control measures are fully operational, and works will be scheduled to allow sufficient settlement time before curtain removal.
951. Following completion of the Intake Chamber and Pumping Station substructure, the bed of Parteen Basin will be carefully reprofiled using controlled dredging techniques designed to minimise resuspension of sediments. Silt containment measures will remain in place throughout this phase and until monitoring confirms that suspended solids have returned to baseline or acceptable levels. The reprofiled area will then be protected with concrete revetment mats, which will be overlain with a thin layer of granular or locally sourced native material to facilitate natural recolonisation by aquatic flora and fauna. Active habitat restoration is thereby incorporated into the design to accelerate ecological recovery within an anticipated recolonisation period of approximately 12 months.
952. While temporary fisheries habitat disturbance of approximately 0.6ha is anticipated during the Construction Phase, this has been minimised through footprint reduction, construction staging, and the use of permanent protective revetment structures. Construction Phase impacts such as sediment release, habitat disturbance, and noise and vibration will be controlled through a suite of mitigation measures (as outlined in Section 8.8.3.1.1 of the EIAR), including timing restrictions, silt control systems, and strict construction management procedures.
953. Overall, through embedded design mitigation, strict construction sequencing, sediment and pollution control measures, habitat reinstatement, and ecological protection protocols, potential impacts on aquatic habitats and qualifying interests of the Lower River Shannon SAC have been substantially reduced or avoided, ensuring that any residual effects are localised, temporary, and not significant at any geographic scale.

10.3 Response to Specific Issues Raised in General Observer Submissions

10.3.1 Potential Biodiversity Impact of New Stream Crossing on Specific Landowner Lands

954. The general observer submission from John Quinn and Sandra Frayne raised a specific issue relating to the potential biodiversity impact of the new proposed stream crossing required on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_103	John Quinn and Sandra Frayne

955. This general observer submission raised concerns that the new proposed stream crossing on their land would have a negative impact on wildlife.

10.3.1.1 Applicant's Response

956. The stream in question is the Lyreen_010 (Crossing ID: WCX070), which would be an open-cut crossing, and was assessed in Section 8.5.3 and Section 8.7.3 in Chapter 8 (Biodiversity) of the EIAR. The assessment identified the potential for pre-mitigation significant effects during the Construction Phase. However, with implementation of standard, best practice mitigation measures these effects were reduced to 'no likely significant effect at any geographic scale'.

957. The standard mitigation that will be implemented to reduce the significance of effects during the Construction Phase is outlined in Section 8.8.3.1.3 in Chapter 8 (Biodiversity) of the EIAR. The measures which will be implemented include:

- Control of silt-laden water runoff and dewatering of silt water
- Appropriate stockpiling of material
- Appropriate storage of materials away from water bodies
- Containment of fuel tanks, drums, mobile bowzers and bunds
- Appropriate usage of vehicles and plant including when driving and refuelling
- Control measures when working in or near watercourses
- Avoiding use of concrete in design where possible
- Using self-contained batching plant on-site with adequate cleaning process defined.

958. These standard mitigation measures follow industry best practice and will be implemented in accordance with the Construction Environmental Management Plan (CEMP) (EIAR Appendix A5.1). This control methodology has been proven to work on other similar projects and is utilised across the construction industry. Measures have been selected to ensure suitability for the Proposed Project and the types of construction methods that would be employed.

959. In addition to this standard mitigation, Table 8.95 in Chapter 8 (Biodiversity) and Table 9.14 in Chapter 9 (Water) of the EIAR outlined site-specific mitigation measures for the crossing of water bodies:

- In-stream working will be carried out in accordance with guidelines issued by IFI (IFI 2016). This will apply to the watercourse crossings; pipeline trench works near to watercourses; and the construction of permanent outfalls for the washouts. Prior to construction, the appointed Contractors will discuss the specific requirements for any discharges with the relevant authorities. The approach to managing surface water during the construction of the Treated Water Pipelines in all peat areas will follow the standards set by the EPA for Bord na Móna

- For open trench crossings, where over-pumping is required, the watercourse will be diverted around the works by 'over-pumping'. The potential issues relating to a build-up of silt or silt-laden dewatering fluids will be addressed through the use of settlement tanks at each crossing. Under the supervision of an ECoWs, spawning gravels encountered (if any) will be removed at the stream crossing points prior to construction works taking place, subject to the prior agreement at all stages in consultation with IFI. There will be seasonal constraints on working through, and adjacent to, watercourses which are of a particular ecological interest. Works will be in accordance with IFI Guidelines (IFI 2016) or as otherwise agreed with IFI during the Construction Phase
- For open trench crossings, where fluming is required, the watercourse will be diverted around the works by gravity, most likely in an enclosed pipe. Potential issues relating to a build-up of silt, or silty dewatering fluids will be addressed through the use of settlement tanks at each crossing. Whilst the purpose of the flume is to create a dry stream/river bed for the open excavation, it may be necessary to employ a temporary sump pump to remove any additional water. Pumped discharge will be via a settlement tank to remove any solids from the dewatering
- The detailed design of works within the watercourses, particularly the reinstatement of watercourses following open trench crossings, will be undertaken with input/guidance from a geomorphologist and ECoWs. Where reinstatement of the pipeline trench occurs near a watercourse, a silt fence will be placed along the riverbank to prevent solids that are washed off the works area during heavy rainfall from entering the stream while the surface adequately revegetates. This measure will be particularly important at sites that slope to the edge of a watercourse. Typically, a silt fence will incorporate a geotextile filter fabric stretched between a series of wooden or metal fence stakes and will be installed in such a way to create pooling of runoff and thereby allowing sedimentation to take place. The reconnection of land drains temporarily altered during construction will be carried out as part of the backfill operation. After the installation of the pipeline, the backfill will be compacted in layers up to the underside of the severed drains which are to be permanently reinstated. The replacement drain will extend into the undisturbed ground on each side of the trench for a suitable distance to ensure a properly supported reconnection can be made (typically 1m or more). The undisturbed ground will be excavated by hand and a good connection formed to the existing drain. The pipeline trench backfill will then be compacted up to the subsoil surface level.

960. For open trench crossings, impacts will be reduced through careful micro-siting and staged construction, ensuring that only short trench sections are opened at any one time and remain exposed for the shortest practicable duration. This approach significantly reduces the duration and extent of in-stream and riparian disturbance. As noted, the watercourse banks, channel profile and bed material will be reinstated following construction using natural materials and to a condition at least as good as prior to construction. Post-construction monitoring of these areas will be undertaken to ensure establishment, with remedial works undertaken where required.

961. Overall, through embedded design mitigation, strict construction sequencing, sediment and pollution control measures, habitat reinstatement, and ecological protection protocols, potential impacts on aquatic ecology have been substantially reduced, ensuring that any residual effects are localised, temporary, and not significant at any geographic scale.

10.3.2 Potential Biodiversity Impact of Hedgerow Removal on Specific Landowner Lands

962. The following general observer submissions raised a specific issue relating to the potential biodiversity impact from the removal of hedgerows on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie

Unique ID	Name of Individual or Organisation
WSP_SUB_92	Judith Kohler
WSP_SUB_101	Edward Frayne
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

963. These general observer submissions raised concerns that the removal of hedgerows on their lands would have a negative impact on wildlife.

10.3.2.1 Applicant's Response

964. As outlined in Section 8.8.2.1.1 of EIAR Chapter 8 - Biodiversity, following the mitigation hierarchy of avoidance, minimisation, and restoration, where feasible, best practice designs have avoided sensitive areas with high ecological value and will ensure the quality of the landscape is retained and protected. Therefore, commitments have been made reduce hedgerows and tree loss for example, by retaining hedgerows on the boundary of the Planning Application where reasonably practicable (this cannot be done for a boundary with an access point). Agricultural mitigation in the REAC (Annex G of EIAR Appendix A5.1 – Construction Environmental Management Plan) confirms that items to be discussed and agreed with landowners in advance of works include any preparatory work for the preservation of hedges, trees, buildings or features within the Construction Working Width, and any tree pruning or tree protection required.
965. At all stages the Proposed Project sought to avoid interference with sensitive environments as much as possible. Where avoidance and minimisation are not feasible, in order to mitigate for the temporary loss of habitats and reduce significant negative effects, following completion of the construction works the general principle is that the land would be reinstated/restored on a 'like for like' basis, based on the habitat/features that were on site before the works commenced, which is considered best practice and is in line with Environmental Protection Agency (EPA) guidelines (EPA 2022). This would include the reinstatement of the soils, drainage, fencing and vegetation on a 'like for like' basis. The overall design of the Proposed Project includes management of topsoil and subsoil stockpiles and reinstatement planting (EIAR Chapter 5 - Construction & Commissioning).
966. The 'like-for-like' replanting of habitats will be in accordance with recommendations by an ECoW, taking into consideration the All-Ireland Pollinator Plan 2021-2025 (NBDC 2021) and the Pollinator Friendly Planting Code (NBDC 2022), to ensure locally sourced appropriate native species which are in line with the existing genetic strain are used. Replanting of vegetation and general landscaping will be monitored by the ECoW.
967. Prior to construction commencing, planning will occur for each area to be disturbed, giving consideration to the following aspects:
- Identification of any areas to be protected, including important ecological features;
 - Water environment features;
 - Identification of any notable features to be restored; and
 - Provision of sufficient and suitable space for the separate storage of turves/topsoil, peat and or subsoils.
968. The reinstatement of linear habitats (hedgerows and treelines) will also be carried out on a 'like-for-like' basis (where feasible) and as per the Biodiversity Guidance for Uisce Éireann Developments (UÉ-AMT-GL-021) (Uisce Éireann 2023) and EIAR Figure 4.98 (Root Barrier and Hedgerow Reinstatement) in Chapter 4 (Project Description) which will be implemented as follows:

- All severed linear habitats, with the exclusion of within the infrastructure sites and permanent access roads to the infrastructure sites, will be replanted to ensure connectivity with the wider landscape is restored. Replanting will commence once works have been completed in an area (approximately every 10km). Reinstating linear corridors along the Proposed Project once works have been completed will reduce the overall impact of habitat fragmentation. All planted vegetation will be a mix of locally sourced native species that are known to occur in the general area and for the specific habitat type.
 - Where a hedgerow/treeline is to be reinstated it will be done so using a mix of age classes from feathered whips and advanced nursery stock to develop an immediate hierarchy in the structure. Where gaps within an existing hedgerow/treeline are to be bolstered, it will also be done so using a combination of mainly feathered whips and occasional advanced nursery stock (minimum 10 to 12cm girth trees to fill gaps). This method employs the principles of ‘under-planting’ feathered whips to the inside of the existing hedgerow and ‘inter-planting’ of whips and advanced nursery stock within gaps.
 - Impacts to linear habitats caused by access requirements were avoided where practicable through the selection of designated access/egress points to the Proposed Project, and to other work sites (EIAR Chapter 5 - Construction & Commissioning) via the public road network, existing farm access points, and gaps in hedgerows. Existing gates onto local roads will be used rather than creating additional hedgerow/treeline gaps.
 - Planting of linear habitats and general landscaping will be monitored by the ECoW and will be subject to a condition assessment post-construction (see Section 8.10.2.1 of EIAR Chapter 8 - Biodiversity for further details), which will assess the condition of replanted/reinstated natural habitats for terrestrial biodiversity (Foulkes *et al.* 2013), to confirm their successful establishment.
969. Treelines cannot be reinstated over the 20m wide Permanent Wayleave as their root system would impede upon the underlying pipeline infrastructure as per Uisce Éireann Tree Protection Guidance (IW-AMT-GL-026) (Uisce Éireann 2022). In line with this guidance, certain tree species (e.g. blackthorn, hawthorn, dog rose) can be planted directly over the pipeline due to their growth habit and root system, followed by those which can be planted at a distance of 1.5m away (e.g. holly, guelder rose, elder and hazel), 3m to 6m away (crab apple, wild cherry, rowan and spindle) and those which must be planted >6m from the pipeline (oak, willow, alder, birch), with woodland planting (groups of trees) at a distance >10m. As a result, the reinstatement of treelines over the 20m wide Permanent Wayleave will consist of a mosaic habitat similar to that of a mature hedgerow.
970. Any habitats including trees, scrub or hedgerows adjacent to, or within, the Proposed Project which are intended to be retained will be afforded adequate protection by complying with the NRA guidance (NRA 2006), prior to construction works commencing. The mitigation measures which will be implemented will include as follows:
- All trees along the Proposed Project that are intended to be retained, both within and adjacent to the boundary (where the Root Protection Area (RPA) of the tree extends into the boundary), will be fenced off in the adjacent working area prior to the commencement of any on-site construction activity and for the duration of the construction works in that area to avoid structural damage to the trunk, branches or root systems of the trees. Temporary fencing will be erected at a sufficient distance from the tree so as to enclose the RPA of the tree. In general, the RPA covers an area equivalent to a circle with a radius 12 times the stem diameter (measured at 1.5m above-ground level for single stemmed trees, or above the root flare for multi-stemmed trees).
 - Where fencing is not feasible due to insufficient space, protection for the trees will be afforded by wrapping hessian sacking (or equivalent) and timber strips clad around the tree.
 - The area within the RPA will not be used for vehicle parking or the storage of materials (including soils, oils and chemicals). The temporary storage of hazardous materials (e.g. hydrocarbons) will not be undertaken within 10m of any retained trees, hedgerows or treelines.

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- If construction activities are required within the RPA, e.g. excavation work, then a qualified arborist will advise on the best methods for protecting the tree. For example, any excavation works carried out within the RPA will need to avoid damage to the protective bark covering larger roots. This may involve excavation by mini-digger and/or hand as deemed appropriate. Exposed roots will be wrapped in a hessian sacking to avoid desiccation and roots less than 2.5cm in diameter could be pruned back to a side root. The advice of a qualified arborist will be sought if larger roots that influence anchorage need to be severed. Any remedial works required to trees will be carried out by a qualified arborist.
 - Where tree removal may be required (e.g. due to health and safety considerations) in areas not previously identified, liaison with a suitably qualified ECoW will be undertaken.
971. Tree cutting and lopping will be minimised. All trees will be pollarded (with the exception of mature trees which are not suitable) by qualified foresters/tree surgeons so as to retain as much of the treeline/linear habitat structure and in a manner which retains ground flora species and does not kill the tree. The trimming regime will involve a scalloping or profiling effect which will minimise the effect on vegetation. Overall, it will not change the structure and ecological function of the linear woodland features and will not measurably affect associated fauna post construction.
972. Through the implementation of well-established approaches to mitigation, which will be implemented in accordance with best practice guidance, effects would be reduced to not significant for the majority of ecological receptors, as set out in Section 8.11 of EIAR Chapter 8 - Biodiversity. However, even after the application of mitigation measures, there would be likely significant residual effects on the following KERs:
- Likely significant negative residual effect on terrestrial habitats at the local to international geographic scale during construction due to the permanent loss of habitat from the infrastructure sites, access roads, and other permanent infrastructure (e.g. land-take associated with the Air Valves, Line Valves, Washout Valves and Lay-Bys; Table 8.56 in EIAR Chapter 8 - Biodiversity).
 - Short-term likely significant negative residual effects on bats at a local level during construction due to loss of five roosts and construction activities resulting in loss and fragmentation of habitat.
 - Short-term likely significant negative residual effects on badger at a local level during construction due to loss of 33 setts.
973. Overall, the assessment demonstrates that the Proposed Project has been designed and will be implemented with a strong commitment to environmental protection and the conservation of biodiversity including hedgerows which were specifically considered in the EIAR. The embedded and additional mitigation measures, outlined in EIAR Chapter 8 - Biodiversity, reflect best practice and are informed by detailed ecological surveys, ensuring that impacts are avoided, reduced, or offset wherever feasible. While some residual effects remain, these are limited in extent, duration, and geographic scale, and are not considered to undermine the overall integrity of biodiversity within the receiving environment.

10.3.3 Biodiversity Surveys on Landowner Lands

974. The general observer submission from John Quinn and Sandra Frayne raised a specific issue relating to a lack of biodiversity surveys on their land:

Unique ID	Name of Individual or Organisation
WSP_SUB_103	John Quinn and Sandra Frayne

975. The general observer submission from John Quinn and Sandra Frayne raised concerns that no biodiversity surveys were undertaken on their lands.

10.3.3.1 Applicant's Response

976. A number of field surveys were undertaken as part of multidisciplinary walkover surveys for the Proposed Project and previous iterations of the project between 2016 and 2025. These included habitat mapping and evaluation and surveys to detect the presence, or likely presence, of a range of protected species (NRA 2009). From these multidisciplinary walkover surveys, it was possible to refine the scope of any further surveys, restrict follow-up surveys to selected habitats, features or locations, and to underpin the selection of KERs. The surveys undertaken as part of the multidisciplinary walkover and subsequent target or species-specific surveys, are described in Section 8.2.5 of the EIAR. The study area (which was informed by the Zol of the Proposed Project) is detailed in Section 8.2.2 of the EIAR.
977. The main difficulty encountered in compiling information during the preparation of Chapter 8 (Biodiversity) of the EIAR was restricted land access or inaccessible areas to undertake baseline surveys. 'No access' lands are lands within the study area where no access permission was granted by the landowner for the surveyors, where no contact was made with the landowner, or where the presence of dense vegetation/scrub cover made areas inaccessible. Due to access restrictions, the overall area of land within the study area of the Proposed Project not surveyed in the field, once all surveys (undertaken between 2016 and 2025) were complete, was 12.5% of which 3.3% were residential properties.
978. In accordance with best practice guidelines (Chartered Institute of Ecology and Environmental Management (CIEEM) 2018), and as set out Chapter 8 (Biodiversity) of the EIAR, in the worst-case scenario, 'no access' lands were surveyed and visually assessed from adjacent lands and/or from public roads using binoculars, where possible, and were supported by information obtained from a review of aerial photography, LIDAR and oblique imagery, and desktop study data. With regard to watercourse crossings, where access was not permitted a precautionary approach was taken and an assessment was made based on information extrapolated from the surrounding environment as well as desktop study information.
979. In addition, to overcome the difficulties with limited land access, and to ensure that appropriately robust appraisals were undertaken, a precautionary approach was adopted in the design of the Proposed Project. In situations where the Proposed Project was constrained to areas with no access, LiDAR and oblique imagery, GIS datasets, and desktop study information were used to select a route of likely local importance (lower value) thereby minimising the potential for impacts of significance associated with the Proposed Project. Pre-construction surveys will also be undertaken prior to the commencement of any works in order to identify any changes from the original baseline surveys and to ensure adequate mitigation measures are put in place.
980. Notwithstanding the difficulty with regard to 'no access' lands, a comprehensive description of the baseline biodiversity of the study area, likely to be impacted by the Proposed Project, is presented in Section 8.3 of the EIAR. The inaccessible areas were considered in determining the effect significance and are reflected in the mitigation strategy. Sufficient data were gathered to reliably inform the impact assessment despite not being able to fully access these areas. Importantly, the mitigation strategy includes targeted measures such as habitat reinstatement, sensitive timing of works to avoid or reduce disturbance effects on species and their habitats, species-specific protection plans, and ongoing ecological monitoring, all of which will contribute to the recovery and long-term resilience of affected habitats and species. These measures, combined with adaptive management where required, supervised by an Ecological Clerk of Works (ECoW), will ensure that ecological impacts and biodiversity protection are effectively managed throughout the lifecycle of the Proposed Project.

10.3.4 Potential Washout Impact of the Proposed Project on the Lyreen River

981. The following general observer submissions raised concerns about the potential washout impacts on the biodiversity of the Lyreen River and downstream habitats as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

982. These general observer submissions raised concern about the consequences of the act of 'washing out' of suspended solids or chlorinated water or any other contaminants or pollutants and the temperature change or other impacts on the Lyreen River which is a tributary of the Rye Water River and the Rye Water Valley / Carton SAC.

10.3.4.1 Applicant's Response

983. In relation to discharges during the Testing and Commissioning Phase and Operational Phase from the Washout Valves to Temporary and Permanent Discharge Locations (including the Lyreen River at Washout 'WA-037'), as noted in Section 8.10.3 of the EIAR, the following measures will be employed to avoid or reduce aquatic habitat degradation associated with hydrological impacts:

- Discharges proposed to water bodies will be agreed with the relevant regulatory authorities (EPA, Inland Fisheries Ireland (IFI) and Office of Public Works (OPW)) and carried out in accordance with any conditions imposed in regulatory authorisations
- Washout Valves with a permanent outfall have been designed to minimise the impact of the discharge (should it be required) through the suitable orientation and appropriate engineering design of the outfall structure to dissipate the energy from the discharge. They will also include the construction of a chamber to facilitate the use of dechlorination media (dechlorination tablets). Discharging from Washout Valves where there is no permanent outfall will require dechlorination equipment to be brought to site as part of the operational procedure
- Levels of residual chlorine would be reduced to below <0.005mg/L, as required by the Quality of Salmonid Waters Regulations (1988).

984. In line with the Commissioning Strategy (EIAR Appendix A5.2), and as outlined in Section 7.1.4.3 of the NIS (cross referenced in Section 7.6.4.2 in relation to the Rye Water Valley/Carton SAC), a range of embedded mitigation measures will be implemented during hydrostatic testing to avoid or reduce potential impacts on European sites. Raw water abstraction will be tightly controlled, with velocities kept below 0.15m/s, abstraction limited to no more than 10% of Q95 flows under specified conditions, and no abstraction permitted below Q95 low flow levels. Abstraction will be undertaken via fine mesh intakes and supported by pre-abstraction sampling to determine appropriate treatment requirements, including controls for suspended solids, invasive species, and water chemistry. A temporary, small-scale intake system will be used, combined with modular treatment processes (including filtration and disinfection), ensuring that both abstracted and discharged water meet environmental protection standards.

985. Following testing of the pipeline, the water will either be reused in subsequent pipeline sections or discharged in a controlled manner within the same catchment to avoid inter-catchment transfer effects. Discharge water will undergo treatment including dechlorination, pH adjustment, and, where necessary, oxygenation, with verification sampling carried out prior to release. Additional controls include settlement of suspended solids to achieve a discharge standard of ≤25mg/l, use of mobile treatment systems where required, and strict limits on discharge rates and volumes relative to receiving watercourses. Discharges will not occur during flood conditions and will be carefully managed to prevent scour, erosion, or sediment release, with further safeguards such as timing works outside sensitive

ecological periods, minimising in-stream disturbance, and implementing physical protection measures (e.g. silt curtains, baffles, and controlled outfall design).

986. As a result, the NIS and Chapter 8 (Biodiversity) of the EIAR conclude that no residual direct or indirect impacts associated with the proposed washouts are predicted that could adversely affect the integrity of the Rye Water Valley/Cartron SAC, or result in likely significant effects on Lyreen River.

10.3.5 Potential Impact of the Proposed Project on Fish Migration and Passage

987. The following general observer submissions raised concerns about the potential impacts of the Proposed Project on fish migration and passage:

Unique ID	Name of Individual or Organisation
WSP_SUB_20	Kieran O'Connor
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannans Fishing Club
WSP_SUB_29	Suzanne Noble
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_63	Port Omna Beo
WSP_SUB_65	Samuel Norris

988. The general observer submission from Kieran O'Connor stated that studies show long-term declines in salmon and eel populations passing through the Ardnacrusha fish lift, and the proposed project is likely to exacerbate these impacts. Inland Fisheries Ireland has advised that derogations cannot apply to salmonid-designated waters in this case. Although the closed salmonid river lies over 4 km from the project, reduced water levels in connected tributaries and streams could still harm fish habitats and survival.
989. The general observer submission from the River Shannon Environmental Protection Alliance Company Ltd stated that reduced flows will impair attraction flows at fish passes, disrupt migration timing, and increase predation and exhaustion.
990. The general observer submission from St. Flannans Fishing Club stated that the ecological effects of the Proposed Project on Lough Derg are extremely concerning to members of the club. The submission continues that fish migration will be negatively impacted as a consequence of the Proposed Project, especially during periods of drought and low water.
991. The general observer submission from Suzanne Noble stated that there are currently no adequate fish passes in place to allow salmon and other migratory species to return upstream to Lough Derg. The submission continues that the Applicant was requested nearly 20 years ago to install proper fish passage infrastructure, yet this has still not been delivered, and that any additional abstraction pressure on the Shannon system without addressing existing ecological barriers would be irresponsible.
992. The general observer submission from Councillor Séamie Morris stated that the Environmental Protection Agency assessments have classified Lough Derg and associated Shannon water bodies as being at less than good ecological status and that pressures include barriers to fish migration.

993. The general observer submission from Friends of the Irish Environment stated that the EIAR does not clearly demonstrate potential effects during low-flow migration periods. The submission continued that the proposed abstraction is likely to have a greater impact on migratory fish populations than the physical presence of the dams.
994. The general observer submission from Garrett Reil and Cliona Geary stated that the proposed abstraction will directly compete with any future increase in flows needed for fish passage restoration.
995. The general observer submission from Killaloe Ballina District Angler's Association stated that there will be disruption to migration and life cycle from physical barriers, changes in velocity and upstream migration impediments.
996. The general observer submission from Port Omna Beo stated that local conservation groups and research have highlighted ongoing concerns about how flow alterations and existing infrastructure (like weirs and hydroelectric facilities) already impact fish movement, and that further abstraction, even at a level described as a small percentage, could exacerbate these pressures, with knock-on effects for biodiversity and local fisheries.
997. The general observer submission from Samuel Norris state that hydrological alteration may affect the migration cues, spawning habitat accessibility, and juvenile survival conditions of migratory fish. The submission continued that reduced freshwater discharge may also alter downstream estuarine salinity balance and sediment transport, and clarification is requested regarding assessment of low-flow abstraction impacts upon migratory species and estuarine ecology.

10.3.5.1 Applicant's Response

998. The observation regarding long term declines in salmon and eel populations at the Ardnacrusha fish lift is noted. However, this matter falls outside the scope of the Water Framework Directive (WFD) assessment for the Proposed Project. Under the WFD, assessments must consider potential impacts on the specific water bodies in which the Proposed Project is located, as well as any hydrologically connected water bodies where a plausible pathway for deterioration exists. In this case, the salmonid designated river referenced in the submission lies more than 4km from the proposed works and is not hydrologically connected in a manner that would allow the Proposed Project to influence its flow regime, water quality, or ecological status. The Proposed Project does not alter the operation of Ardnacrusha, does not modify flows in the headrace or tailrace, and does not interact with the fish lift or its associated migration pathways.
999. The historic pressures on salmon and eel populations at Ardnacrusha are long standing and arise from the operation of the hydropower scheme, which is regulated under a separate statutory framework. These legacy impacts are already reflected in the baseline ecological status of the relevant Shannon water bodies within the River Basin Management Plan. The WFD requires that the Proposed Project demonstrates no deterioration from this baseline and that it does not compromise the achievement of River Basin Management Plan objectives. As the proposed abstraction regime does not alter flows or ecological conditions in any water body affected by Ardnacrusha, there is no pathway by which the Proposed Project could exacerbate these historic impacts.
1000. As set out in Section 1.4.7 of Chapter 1 – Introduction and Section 11.2.6 of Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report, many of the matters raised in these submissions refer to already existing issues relating to the Lower River Shannon SAC such as compensation flows, barriers to fish migration and water levels. These issues must be addressed at a programmatic level; they are not issues which are to be addressed or resolved at a project specific level and in this instance they are not issues for the Proposed Project to address.

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1001. Inland Fisheries Ireland's position regarding derogations for salmonid designated waters is acknowledged; however, no derogation is sought or required, as the Proposed Project does not affect any such designated water body. The Proposed Project has been designed to operate within environmentally sustainable limits and remains fully compliant with the WFD no deterioration requirement.
1002. In summary, while the historic decline in migratory fish populations at Ardnacrusha is recognised, it is unrelated to the Proposed Project and does not constitute a WFD receptor. The Proposed Project does not influence the hydrology, morphology, or ecological functioning of the affected waters, and therefore the WFD does not require reassessment of these legacy impacts.
1003. As noted in Section 3.5.3 of the NIS, intake of water would occur at the bank of Parteen Basin, via Intake Chambers positioned below ground level and below the lower level of the water in Parteen Basin, as controlled by ESB, from which the raw water would flow to the wet well of the Pumping Station and would be pumped to the WTP. The proposed bankside configuration design requires a lesser extent of works on the bed of Parteen Basin during the Construction Phase in comparison to that which would have been required for an 'in-basin' design. There would be no additional barrier effects within the Lower River Shannon SAC as a result of the Proposed Project that would impact migration past the proposed intake.
1004. The Proposed Project would not change the generator discharge rate at the Ardnacrusha Generating Station, however, the duration of discharges would be reduced by approximately 2% on average. This is because the flow rates through the power station are fixed by the generator characteristics and so, to bring about the reduction in volume required to accommodate the abstraction being proposed, a reduction in time operating must occur. This would result in lower volumes of flow through the Ardnacrusha Generating Station through an unchanged generator flow rate operating for a shorter period of time, with marginally longer periods of no flow through Ardnacrusha. Smolts migrating downstream would likely marginally benefit from this scenario as smolts are attracted to higher flows. During reduced periods of hydropower generation, they would therefore be encouraged to migrate downstream over Parteen Weir, instead of through the turbines at Ardnacrusha. Furthermore, within operating guidelines which seek to increase late spring water levels to the upper limit of the Normal Operating Band, the Proposed Project would not impede the ability to adjust appropriate hydropower flows, with increased flow to the Old River Shannon during periods of smolt migration (April).
1005. A sensitivity analysis to the proposed environmental flow (Eflow) regime at Parteen Weir (CDM Smith 2021), in which the existing 10m³/s compensation and fish pass flow is replaced by a varying compensation flow with the inclusion of freshets (increased flows during a flood event or a release of additional water) to assist migratory fish up the Old River Shannon and into Parteen Basin, was undertaken. This found that similar water level differences were simulated during the droughts when the proposed abstractions were included in the Eflow scenario as were predicted for the case for a constant compensation flow. However, this assumes that freshets would not be released during flood (i.e. when spilling) or drought conditions. The basis of this drought period assumption is that if the Eflow is an attempt to mimic the natural flow regime then artificially releasing standard freshets over this period would be introducing a non-natural characteristic to the flow regime. In summary, the hydrological model found that the released flows to the Old River Shannon during periods of spill are virtually the same with or without the proposed Eflows regime in place. However, outside of flood and drought periods more water is released, together with flow variability, by the Eflows regime compared to the use of a uniform 10m³/s compensation flow. Full details of the hydrological model Eflows sensitivity analysis are provided in the EIAR Appendix A9.1 Annex A (Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels). Reinstatement of more natural water regimes would involve partly storing all flood inflows and partly spilling to the Lower River Shannon in a naturally variable freshet time profile. Having due regard to the River Shannon statutory compensation flow obligations, ESB's current practice is that late spring water

level is kept near the top of the Normal Operating Band. At winter flood times, and when autumn recovery has started, greater sharing of inflows between storage and the Old River Shannon reduces water available for use in hydropower, reducing revenue to ESB. The Proposed Project would be abstracting up to a maximum of 300Mld or 3.47m³/s and while there may be technicalities for ESB in adjusting gates to provide flow variability, the Proposed Project would not impede a flow-sharing decision between hydropower and statutory compensation flow at appropriate times of the year and is not an impediment to any Parteen Weir gate adjustments to implement it.⁶

1006. As noted in Section 8.7.3.2.3 of the EIAR, the Intake Chamber would be fitted with three passive wedge-wire cylinder (PWWC) Intake Screens (between the Intake Chamber and the Inlet Chamber) to prevent debris and/or fish or eels being taken up into the raw water pumps during the Operational Phase. The screens would be selected so that intake velocities through the screen slots (approximately 2.0m in diameter) are limited to 0.15m/s, the velocity at which juvenile fish can swim away without being trapped against the screen. A Bubble Curtain would also be provided at the inlet openings to the Intake Chamber. A Bubble Curtain is a system that produces fine bubbles of air across the entrance to the intake structure, which act as a barrier (a curtain) discouraging fish from entering the intake.
1007. In relation to concerns regarding the proposed abstraction altering 'downstream estuarine salinity balance and sediment transport', as discussed in Section 2.2.1 of the NIS, the 'downstream limit' of the abstraction Zol is the confluence of the Shannon (Limerick Dock) and the Ardnacrusha Tailrace at Limerick Dock. The diurnal tidal influence on water levels and flows at this point mean that any change in the Tailrace flow (the flow downstream of the Ardnacrusha Generating Station), resulting from a change in duration of flow through Ardnacrusha Generating Station, would be imperceptible in Limerick Dock at the confluence. Furthermore, the hydrological and water quality modelling undertaken demonstrates that the Proposed Project will not result in any measurable change to water levels, flow regimes, or flushing capacity either upstream or downstream of Parteen Basin. Abstraction will occur entirely within the Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB apply to Parteen Basin and will be managed as part of ESB's existing water level control regime. There will be no reduction in statutory compensation flows (10m³/s) to the Old River Shannon, no reduction in inflows from upstream sources, and no alteration to flows through Lough Derg. Accordingly, there will be no change to sediment transport processes, no reduction in channel flushing, and no potential for the Proposed Project to contribute to sediment accumulation or degradation of spawning habitats. Any existing sedimentation issues will neither be exacerbated nor influenced by the Proposed Project.

10.3.6 Potential Impact of the Proposed Project on the Mycelium Web

1008. The following general observer submissions raised concerns about the potential impacts of the Proposed Project on the mycelium web:

Unique ID	Name of Individual or Organisation
WSP_SUB_12	Dr. John Galvin
WSP_SUB_37	Councillor Dr. Phyll Bugler

1009. These general observer submissions stated that the bulldozing of a 50 metre corridor for the Proposed Project will result in unseen damage to the precious Mycelium web.

⁶ This is referred to as a more naturalised flow regime in Chapter 11 Water (Hydrological Modelling and Water Levels).

10.3.6.1 Applicant's Response

1010. The characterisation of the Proposed Project as involving wholesale clearance of a continuous 50m wide ecological corridor is incorrect. The Proposed Project comprises temporary and phased construction activities with limited permanent habitat loss, and includes reinstatement of temporarily disturbed areas in accordance with best practice construction and ecological mitigation measures.
1011. It is acknowledged that soil ecosystems contain complex microbial and fungal assemblages, including mycorrhizal associations between fungi and plant roots. These communities are widely distributed but spatially heterogeneous, and are influenced by soil type, vegetation, moisture regimes, and disturbance history. While sensitive to disturbance, they are generally capable of recolonisation under suitable post-construction conditions.
1012. From a scientific perspective, soil fungal communities exhibit varying degrees of resilience, including dispersal via spores and hyphal fragments, and re-establishment through recolonising vegetation. Functional redundancy may occur in some fungal guilds, although this is not uniform across all taxa or environmental contexts. Accordingly, temporary and localised soil disturbance does not necessarily result in permanent loss of soil fungal function at landscape scale. Recovery trajectories are dependent on the extent of soil handling impacts, compaction, and the successful re-establishment of host vegetation.
1013. The EIA Directive requires assessment of likely significant effects on biodiversity, soil, fauna, flora, water, air, climate, and landscape, including indirect and secondary effects where relevant. While it does not specify fungal networks as a standalone receptor, soil microbial communities are relevant insofar as they contribute to biodiversity and soil function and where impacts could give rise to likely significant effects.
1014. The Habitats Directive protects designated sites (SACs and Special Protection Areas (SPAs)) and their qualifying interests. Ecological functions, including soil processes, may be relevant where they contribute to the structure and function of Annex I habitat types or support qualifying species, but soil microbial or fungal communities are not designated conservation features in their own right unless explicitly encompassed within a listed habitat or species requirement.
1015. Standard construction environmental mitigation measures, including careful topsoil stripping, appropriate storage, and reinstatement, have been proposed to retain soil structure and biological integrity to the greatest practicable extent. Following completion of works, ecological succession and soil microbial recovery processes are expected to facilitate gradual restoration of soil functions, subject to site-specific conditions.
1016. Accordingly, while there is no explicit requirement to assess mycorrhizal networks as a standalone environmental receptor, they are considered indirectly where relevant to the maintenance of soil function and habitat integrity within the scope of biodiversity assessment under EU and Irish legislation. However, the EIAR shows that regard has been had to the requirements of the Soil Monitoring Directive by including measures to prevent contamination of soils and water, to avoid the spread or introduction of INNS, to minimize soil sealing and restore excavated sites, and by adopting the following measures:
- Timing of the clearing and topsoil-stripping of each phase of works to minimise the duration of stockpiled material and exposure of bare surfaces
 - Provision of sufficient and suitable space for the separate storage of turves/topsoil, peat and or subsoils
 - Management of topsoil and subsoil stockpiles to prevent siltation of watercourses through runoff during rainstorms, e.g. through the use of cut-off drains and silt curtains

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- As far as possible, creation of slopes at gradients suitable for the placement of soils/peat and where necessary, suitable slope stabilisation measures to assist revegetation and prevent erosion
- The machines used for the reinstatement of topsoil and subsoil would be of a suitable ground bearing pressure to minimise compaction as much as is practicable
- Replacement of soils/peat in the correct horizons
- Reinstatement will occur as soon as possible upon completion of the works in order to minimise the time for which soil or peat are required to be stored and the period of exposed excavations. However, this will be subject to careful planning by the Contractor to avoid the necessity to track back over areas of previously restored ground or further disturbance of recovering areas
- Natural regeneration of vegetation, where feasible, by reusing the stored topsoil seedbank from its original location for reinstatement
- Adoption of a phased approach to avoid tracking back or disturbing areas previously reinstated.

10.3.7 Fish Survey of Parteen Reservoir

1017. The following general observer submission raised concerns that no fish survey of Parteen Reservoir was completed for the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_45	Friends of the Irish Environment

1018. This general observer submission stated that no fish survey of Parteen Reservoir using a standard method was completed to inform the NIS and EIAR.

10.3.7.1 Applicant's Response

1019. Fish stock surveys were undertaken within Parteen Basin in June and July 2016 by IFI as part of its National Research Survey Programme (Kelly *et al.* 2017). These surveys were conducted in accordance with recognised European standard protocols (CEN 2005), ensuring methodological consistency with established best practice for freshwater fish community assessment.
1020. A multi-method fish stock survey was completed over two nights between 29 June and 1 July 2016, incorporating complementary sampling techniques designed to characterise both littoral and pelagic fish assemblages. The survey design included WFD+ multi-mesh gill netting, eight-panel braided gill netting, and pelagic survey gill netting, supplemented by hydroacoustic surveying of the pelagic zone. The integration of these methods provides a robust and comprehensive dataset, addressing inherent limitations associated with any single sampling technique and ensuring broad coverage of species, size classes, and habitat use within the basin.
1021. Full methodological details, sampling effort, and results are provided in EIAR Appendix A8.15 (Inland Fisheries Ireland, National Research Programme Lakes: Parteen Basin (Lower Lough Derg)). The survey therefore constitutes a standardised, scientifically robust baseline assessment of fish community structure and abundance, undertaken by the national competent authority responsible for inland fisheries monitoring.
1022. It is further noted that the contention that no survey using standard methods was undertaken is not accurate. The 2016 IFI programme explicitly applied CEN-compliant multi-gear methodologies, which represent the accepted European standard for lake fish stock assessment. The use of multiple gear types and hydroacoustic validation reflects current best practice rather than a single-method approach, and provides a higher level of confidence than reliance on any individual sampling method in isolation.

1023. The requirement for repeat annual surveys was subsequently reviewed in the context of the baseline data obtained. It was concluded that the 2016 dataset provides a representative and sufficiently robust characterisation of the fish community for assessment purposes, and that repetition would be unlikely to materially alter the baseline understanding in the absence of any identified significant environmental change within Parteen Basin.
1024. In addition, more targeted and spatially refined ecological information has since been obtained through diver-based ('scuba') surveys undertaken at the RWI&PS site, most recently in August 2024, with earlier surveys in August 2017, August 2019, and June 2021. These surveys specifically addressed Annex I habitat characterization and Annex II species presence, including detailed habitat suitability assessments for lamprey ammocoetes, spawning and nursery habitat evaluation, substrate classification, macrophyte distribution, and recording of fish and INNS occurrence along structured transects extending from shoreline to approximately 50m offshore.
1025. With respect to the absence of electrofishing and targeted juvenile or silver eel surveys, it is important to note that electrofishing is not an appropriate or effective method in the context of Parteen Basin due to the predominance of deeper lacustrine habitats and the limited extent of suitable shallow shoreline substrates. Where shallow marginal habitats occur, these are not representative of ammocoete habitat requirements, which are typically associated with fine sediment depositional environments. Similarly, fyke nets were in fact deployed at multiple locations during the 2016 IFI survey programme, contributing to the multi-gear dataset and further strengthening species detectability, particularly for benthic and nocturnally active species.
1026. Accordingly, the combined evidence base (comprising CEN-compliant multi-gear fish stock surveys, hydroacoustic pelagic assessment, fyke net deployment, and subsequent targeted diver-based habitat and species surveys) represents a comprehensive, methodologically sound and proportionate approach to characterising the fish community and associated ecological receptors within Parteen Basin.

10.3.8 Adequacy of the Ecological Assessment for the Shannon

1027. The following submissions raised concerns about the adequacy of ecological assessment for the Shannon water body:

Unique ID	Name of Individual or Organisation
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_50	James Crowley
WSP_SUB_68	The Local Authority Waters Programme (LAWPRO)
WSP_SUB_114	Tipperary County Council

1028. The general observer submission from Friends of the Irish Environment stated that a cumulative ecological assessment within the modified Shannon system has not been demonstrated in the planning application.
1029. The general observer submission from James Crowley stated that the planning application must demonstrate that the proposed abstraction will not undermine the conservation objectives for the Lower Shannon, particularly for flow-dependent species.
1030. The general observer submission from LAWPRO (which is reflected in the prescribed body submission from Tipperary County Council) stated that, while the environmental assessment is technically robust for hydrology at Lough Derg / Parteen, it is not sufficiently robust for ecological impacts in the Lower Shannon, particularly under drought conditions, climate change scenarios and cumulative system

stress. It specifically notes the climate analysis appears to be undertaken using a system-scale and is not receptor-specific. In addition, ecological responses to compound stressors are not quantified.

1031. The general observer submission from LAWPRO (which is reflected in the prescribed body submission from Tipperary County Council) also stated that the documentation does not capture a complete picture in terms of the unique aquatic ecology within the lake and downstream. Of heritage, scientific and cultural importance are the native fish species within Lough Derg. Some of these, such as distinct genetic groupings of trout, the Irish Pollan, and “landlocked lamprey” are unique to the lake and form some of the most interesting and important biodiversity features associated with the lough.

10.3.8.1 Applicant's Response

1032. The Habitats Directive does not require an assessment against hypothetical or undefined future ecological conditions. Under Article 6(3), the key obligation is to assess whether a plan or project, either alone or in-combination with other plans or projects, would adversely affect the integrity of a European site in view of its conservation objectives. This assessment must be undertaken on the basis of the site's current condition and the conservation objectives as defined by the competent authority. An in-combination assessment was also undertaken in Section 8 of the NIS and should be considered alongside this assessment.
1033. For sites designated as SACs, the conservation objectives reflect the ecological requirements of the qualifying habitats and species under the prevailing environmental conditions. Potential future changes in site management or ecological restoration measures do not form part of the assessment baseline unless they have been formally adopted and are sufficiently defined. Accordingly, the Appropriate Assessment (AA) is based on the best available scientific knowledge of the site's current ecological status and functioning.
1034. Article 6(4) of the Habitats Directive is only engaged where it cannot be ascertained, following AA, that a plan or project will not adversely affect the integrity of the site. In this case, the proposed abstraction does not give rise to adverse effects on the integrity of the European site, either alone or in-combination with other plans or projects. The assessment demonstrates that the proposal does not undermine the conservation objectives of the site, nor does it result in deterioration of the structure or function of qualifying habitats or the conservation status of qualifying species.
1035. Because the proposal does not trigger the legal threshold of an adverse effect on site integrity under Article 6(3), the derogation provisions under Article 6(4) are not required. Article 6(4) is a mechanism of last resort, applicable only where adverse effects cannot be ruled out and must be justified by imperative reasons of overriding public interest, alongside the consideration of alternatives and the provision of compensatory measures. Where no adverse effect on site integrity is identified, the Directive does not require further justification under Article 6(4), and the assessment remains valid when based on the current ecological baseline.
1036. The assessment concludes that the Proposed Project will not give rise to adverse effects on the integrity of any European site. Specifically, the Proposed Project does not introduce changes to hydromorphological conditions that would affect the structure or function of qualifying interest habitats, nor does it result in deterioration of the conservation status of qualifying interest species. Furthermore, the assertion of unassessed in-combination or cumulative effects is not supported, noting that such effects have been explicitly considered in the in-combination assessment presented in Section 8 of the NIS.
1037. In relation to the concerns raised regarding the proposed abstraction undermining the conservation objectives for the Lower River Shannon SAC, particularly for flow-dependent species, a detailed response is provided in Section 10.2.3.1.

1038. In relation to concerns that the climate analysis ‘appears to be undertaken using a system-scale and is not receptor-specific’ and that ‘ecological responses to compound stressors are not quantified’, the assessment set out in EIAR Appendix A9.1 Annex A (Hydrological Modelling Report) integrates the best available scientific evidence on projected climate change impacts and applies it within a robust, precautionary modelling approach designed to capture worst-case outcomes. Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.
1039. A dedicated version of the hydrological model was run to investigate the likely impacts in the future when the Lake hydrology is subject to climate change. A precautionary approach to the consideration of climate change and a ‘reasonable worst case’ for the 2080s epoch was used.
1040. Two sources of climate change information regarding how Irish fluvial flows are projected to change were used and the results compared:
- The National University of Ireland (NUI) Maynooth (2008) report supplies river flow monthly change allowances for the 2080s epoch together with an indication of uncertainties for nine catchments across Ireland. The lower allowances were used to provide a reasonable worst-case scenario
 - The ICARUS (2020) study supplies a means of selecting climate change allowances dependent on catchment characteristics for any location in Ireland.
1041. Climate change simulations for a reasonable worst-case scenario for the 2080s epoch with the inclusion of the Proposed Project abstraction indicate that simulated Lake levels would draw down closer to the bottom of the Normal Operating Band during the 2018 drought – the most impactful drought event from the 52-year model simulation period (1972 to 2023). However, the additional simulated Lake level drawdown is still fitting within the range of ESB normal observed Lake level fluctuations, resulting in Lake levels still remaining within the Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB applies to Parteen Basin, and would mean no change to the Old River Shannon compensation and fish pass flows always being met from the inclusion of the Proposed Project abstraction.
1042. These outcomes are directly relevant to ecological receptors, as they confirm the continued integrity of the hydrological regime that underpins ecological habitats and associated species, even under compounded stress scenarios.
1043. While it is acknowledged that ecological responses to multiple stressors can be complex, the assessment appropriately addresses this by focusing on the primary controlling factor, hydrological regime, and demonstrating that no material alteration to this regime arises. In this context, further quantification of ecological response is neither necessary nor proportionate, as the pathway for significant effect (i.e. hydrological change of sufficient magnitude) is demonstrably absent.
1044. Accordingly, the assessment does not rely solely on broad system-scale analysis, but instead applies conservative, scenario-based modelling that is directly informative of receptor-level outcomes. It fully satisfies the requirement to consider climate change, cumulative pressures, and scientific uncertainty in a precautionary manner. The conclusions are therefore robust, evidence-based, and consistent with best practice in environmental assessment.
1045. In relation to the statement that the ‘documentation does not capture a complete picture in terms of the unique aquatic ecology within the lake and downstream’, a response to this is provided in Section 10.4.27.1.

10.3.9 Potential Impact of the Proposed Water Treatment Plant on Biodiversity

1046. The following general observer submissions raised specific concerns about the potential impact of the proposed WTP on biodiversity:

Unique ID	Name of Individual or Organisation
WSP_SUB_35	Castleconnell River Association
WSP_SUB_93	Michael McKeogh

1047. The general observer submissions stated that the proposed WTP have the potential to result in pollution with effects on fish, permanently destroy habitats, disrupt ecological networks and remove land with ecological value.

10.3.9.1 Applicant's Response

1048. The habitat at the proposed WTP site is characterised as rush-dominated wet grassland (GS4). The land consists of heavy clay soil and is poached by cattle, with no surface water observed. The dominant vegetation species recorded include soft rush, springy turf-moss, creeping buttercup, annual meadow grass, and Yorkshire fog. The habitats present on-site did not correspond to any EU Annex I habitat type.

1049. Construction works associated with the proposed WTP would result permanent terrestrial habitat loss within the footprint of the site (including the access road), which has been assessed in Table 8.57 in Chapter 8 (Biodiversity) of the EIAR. No rare/protected flora were recorded in these areas of permanent habitat loss. The WTP site is not located within any European site, and the closest European site is the Lower River Shannon SAC. This SAC includes part of the Kilmastulla_050 waterbody (SC: 25_3881), which is located approximately 540m south of the WTP site at its closest point. No surface water was visible on the WTP site itself; however, surface water from the site in operation would discharge to a drainage ditch (WBX004) along the south side of woodland south of the WTP. This ditch flows east to west and ultimately enters the Kilmastulla_050 approximately 195m downstream of the WTP access road (see EIAR Figure 8.12).

1050. The proposed access road to the WTP approaches the site from the south, connecting to the R445 (formerly the N7 Limerick–Dublin road) and crossing open farmland and forestry. The route has been designed to avoid the boundaries of the Lower River Shannon SAC. However, it does cross Knockadromin Stream (WCX002), a tributary of the Kilmastulla River, approximately 35m upstream of the SAC boundary, as well as a drainage ditch (WBP221) approximately 150m upstream of the SAC.

1051. Regarding fauna, no Annex II species were recorded during field surveys between 2016 and 2024 within the WTP study area, with the exception of the lesser horseshoe bat. This species was recorded once during bat surveys at a derelict building within the WTP site near Birdhill (EIAR Appendix A8.9). However, this record is considered outside the normal commuting range associated with European sites within the Zol of the Proposed Project.

1052. Breeding and wintering bird surveys undertaken between 2015 and 2025 recorded Annex I and/or special conservation interest species within or near the WTP study area, including hen harrier, cormorant, and black-headed gull (EIAR Appendices A8.21 and A8.22). These species are designated as qualifying interests for several European sites within the Zol, including the Slievefelim to Silvermines Mountains SPA, Lough Derg (Shannon) SPA, River Little Brosna Callows SPA, and the River Shannon and River Fergus Estuaries SPA. However, within the WTP study area these species were typically recorded in low numbers and mainly in flight over the site.

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1053. Other Annex I bird species recorded at the WTP included little egret and peregrine falcon (EIAR Appendices A8.21 and A8.22). However, there are no European sites within the Zol designated specifically for these species.
1054. The mitigation measures outlined in Section 8.8 of the EIAR focus on habitat and watercourse protection, bat conservation, and protection of nesting birds during the Construction Phase of the proposed WTP. Overall, they aim to avoid direct ecological impacts where possible and mitigate for unavoidable losses through habitat creation, careful design, and phased construction management.
1055. In terms of habitat and water protection, the design incorporates extensive native planting (including woodland, scrub, and species-rich grassland) to enhance biodiversity and reinstate habitats within the site. The watercourse crossing over a tributary of the Kilmastulla River will use a single-span bridge structure with abutments set back from banks, ensuring no in-stream works are required. Construction vehicles will be prohibited from entering watercourses, and silt control measures will be used to prevent pollution and sediment runoff. Bank and riparian habitats will be protected and maintained through careful bridge design and construction controls.
1056. Bat mitigation is a major component due to the loss of a roost. A dedicated replacement bat house will be constructed at least one year in advance of roost loss. It will be designed to suit lesser horseshoe bats primarily, while also accommodating other species through integrated bat boxes and varied internal conditions. Its location will be close to existing flight lines and foraging areas to maximise uptake, and it will be built under specialist ecological guidance following established bat design standards. Additional roosting opportunities will be provided using bat boxes where appropriate.
1057. Mitigation measures are also included to protect breeding birds through phased vegetation clearance. Tree and scrub removal will generally avoid the nesting season (March–August). Where this is not possible, an ECoW will carry out inspections, establish buffer zones around active and potential nests, and ensure clearance only proceeds once breeding has finished.
1058. While potential biodiversity receptors are present and some ecological connectivity exists between the WTP site and downstream European sites, the potential impacts have been identified, assessed, and appropriately mitigated through the design of the Proposed Project and the implementation of standard and project-specific mitigation measures.

10.3.10 Potential Breach of S.I. No. 331/2019

1059. The following general observer submission raised specific concern about Proposed Project breaching S.I. No. 331/2019 - European Union Conservation of Wild Birds (Lough Derg (Shannon) Special Protection Area 004058) Regulations 2019:

Unique ID	Name of Individual or Organisation
WSP_SUB_02	Fight the Shannon Pipeline

1060. This general observer submission stated that the Proposed Project breaches S.I. No. 331/2019. The submission further states that continuous removal of water will destroy the massive network of SACs and SPAs affecting the Lower Shannon (site 002165) and also Lough Derg under SPA 004058 which protects the habitats, lagoons, alluvial forests and all species associated with this.

10.3.10.1 Applicant's Response

1061. The assessment of potential impacts associated with the proposed abstraction during the Operational Phase of the Proposed Project has been undertaken in accordance with the requirements of S.I. No. 331/2019 (European Communities (Birds and Natural Habitats) Regulations 2011, as amended),

including the requirements for AA under Article 6 of the Habitats Directive. The conclusions of Chapter 8 (Biodiversity) of the EIAR and the NIS demonstrate that the Proposed Project will not give rise to adverse effects on the integrity of any European site, either alone or in-combination, including the wider network of SACs and SPAs associated with the River Shannon system.

1062. In particular, the assessment has considered likely significant effects on the Lower River Shannon SAC and the Lough Derg SPA. The assertion that continuous abstraction would ‘destroy’ the hydrological and ecological functioning of these sites is not supported by the findings of the hydrological or ecological assessments.
1063. To inform the evaluation of potential hydrological and water quality effects, a detailed hydrological model and water quality model of Lough Derg and the Parteen Basin were developed, simulating the existing relationships between lake levels, flows, and water quality over a 52-year period (1972 to 2023), using long-term monitored data. Full details are provided in EIAR Appendix A9.1 Annex A (Hydrological Modelling Report) and Annex B (Water Quality Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels).
1064. The modelling assessed two abstraction scenarios (154Mld and 300Mld). Results show that, when compared with baseline conditions, the effects of abstraction on lake levels and downstream flows are negligible for approximately 99% of the simulation period. Any discernible effects are confined to short-duration extreme drought conditions (notably 1995 and 2018) and the immediate recovery period thereafter, during which lake level responses remain within the range of natural and historically observed variability.
1065. Importantly, throughout the full modelled period, lake levels remain within the ESB Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB apply to Parteen Basin. Forward flows to the Old River Shannon, including statutory compensation and fish pass flows, are unchanged by the inclusion of the Proposed Project abstraction, and compliance with these ecological flow requirements is maintained at all times.
1066. As noted in the Planning Application, ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference, with no material alteration to flow patterns or lake level behaviour at a scale that would affect European sites within the Zol.
1067. Even under extreme drought conditions and climate change scenarios (2080s ‘reasonable worst case’), model results indicate that lake level drawdown remains within the established operational range and does not result in exceedance of the Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB apply to Parteen Basin. These outcomes confirm that the Proposed Project does not alter the hydrological conditions that underpin the conservation objectives of European sites within the Zol.

1068. Accordingly, the hydrological assessment demonstrates no adverse effects on the qualifying interests or conservation objectives of the Lower River Shannon SAC or the Lough Derg SPA, nor any impact at a network level across associated SACs and SPAs. The structure, function, and ecological integrity of these European sites will be maintained.
1069. Mitigation measures set out in the NIS further ensure the protection of habitats and species, including measures addressing invasive non-native species, water quality protection, and the avoidance of disturbance or mortality risks to qualifying species such as otter, salmon, and lamprey. These measures ensure that the Proposed Project does not act as a barrier to movement or otherwise compromise site conservation objectives.
1070. While residual ecological effects have been identified (including limited habitat loss at the RWI&PS site and impacts on bat activity), these are localised, do not extend to European sites, and are not ecologically significant in the context of the wider Shannon catchment.
1071. In conclusion, the assessment under S.I. No. 331/2019 European Union Conservation of Wild Birds (Lough Derg (Shannon) Special Protection Area 004058) Regulations 2019 and the accompanying AA process demonstrates that abstraction at the proposed rates will not result in the degradation or functional loss of the Lower River Shannon SAC, Lough Derg SPA, or the wider European site network. The conservation objectives of all relevant designated sites will continue to be fully supported.

10.3.11 Adequacy of Ecology Surveys

1072. The following general observer submission raised specific concerns about the adequacy of the ecology field surveys:

Unique ID	Name of Individual or Organisation
WSP_SUB_45	Friends of the Irish Environment

1073. This general observer submission stated that the ecology field surveys completed were confined to only the footprint of proposed Raw Water Intake and Pumping Station and a small buffer area around the footprint of this proposed infrastructure. The submission continued that, after defining the spatial area that was that within the likely zone of influence (Zol), the baseline ecology surveys completed did not spatially cover this area, as the baseline surveys actually only extend to a 75m radius around the Raw Water Intake and Pumping Station, and to only 50m for the aquatic ecology surveys.
1074. The submission also stated that no fish surveys following a standard methodology were completed at the proposed abstraction point.

10.3.11.1 Applicant's Response

1075. The 'upstream limit' of the abstraction Zol is Meelick Weir. It is not physically possible for water levels in Lough Derg, in low and medium flows, to influence water levels upstream of Meelick Weir. The proposed abstraction at Parteen Basin for the Proposed Project would have no hydrological influence on the River Shannon upstream of Meelick Weir.
1076. The 'downstream limit' of the abstraction Zol is the confluence of the Shannon (Limerick Dock) and the Ardnacrusha Tailrace at Limerick Dock. The diurnal tidal influence on water levels and flows at this point mean that any change in the Tailrace flow, resulting from a change in duration of flow through Ardnacrusha Generating Station as a result of the Proposed Project abstraction, would have no hydrological influence beyond the confluence at Limerick Dock.

1077. As noted in Section 2.2 of the NIS, ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference. Thus, the study area, based on potential impacts associated with the abstraction, was contained to the RWI&PS.

1078. In relation to the statement that no fish surveys following a standard methodology were completed at the proposed abstraction point, a response to this is provided in Section 10.3.7.1.

10.3.12 Potential Impacts to Littoral and Shoreline Habitats

1079. The following submissions raised specific concerns about the potential impact of the Proposed Project on littoral and shoreline habitats:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_55	Laura Kavanagh
WSP_SUB_114	Tipperary County Council

1080. These submissions stated that the shallow margins of Lough Derg are among the most biologically productive habitats in the system, and continued that sustained water level drawdown of even 10–30 cm (centimetres) can result in desiccation of reed beds and macrophytes, the loss of invertebrate production, a reduction in fish spawning and nursery areas, and repeated drawdown leading to long-term habitat loss with slow or incomplete recovery. In shallow nearshore environments, small vertical reductions in lake level may translate into substantial lateral recession of littoral habitat, depending on shoreline gradient.

10.3.12.1 Applicant's Response

1081. As noted in the Planning Application, ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference.

1082. The hydrological modelling undertaken for the Proposed Project (EIAR Appendix A9.1 – Annex A: Hydrological Modelling Report) indicates that any deviation from baseline lake levels attributable to the Proposed Project is limited in both duration and magnitude. Perceptible effects are only predicted during extreme drought conditions (1995 and 2018) and for a short duration (typically less than one week). For approximately 99% of the 52-year simulation period (1972 to 2023), no measurable change in lake

levels is predicted. This highly constrained temporal occurrence precludes any sustained or ecologically significant effect on littoral or shoreline habitats.

1083. Where changes are predicted to occur under extreme drought conditions, their magnitude is demonstrably small. The maximum simulated drawdown during the 2018 event, the most conservative scenario assessed, is 134mm at 300Mld and 65mm at 154Mld. These values fall well within the range of natural and regulated lake level fluctuations historically recorded and managed by ESB. Littoral and shoreline habitats within Lough Derg and Parteen Basin are inherently adapted to such variability; therefore, the predicted changes do not introduce conditions outside the existing ecological baseline and Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB apply to Parteen Basin.
1084. A precautionary ‘reasonable worst-case’ climate change scenario for the 2080s was also assessed. While this results in a marginally greater maximum drawdown (168mm at 300Mld), simulated lake levels continue to remain within the existing ecological baseline and Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB apply to Parteen Basin. The magnitude, rate, and frequency of change remain consistent with historic variability. On this basis, even under combined abstraction and climate change pressures, there is no potential for likely significant effects on littoral or shoreline habitats.
1085. In EIA terms, the magnitude of impact on lake levels is negligible, the spatial extent is limited, and the duration is short-term and infrequent. The scale of water level variation is considered to be insufficient to influence shoreline processes, sediment transport, or habitat availability. When considered in the context of the sensitivity and existing adaptive capacity of littoral and shoreline habitats, the overall impact is predicted to have no likely significant effect.
1086. Further detail relative to this submission is provided in the applicant’s response in Section 10.2.3.1.

10.3.13 Potential Impact of Native Woodland Removal

1087. The following general observer submissions raised specific concern about the impact of the removal of native woodland required for the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_54	Killaloe Ballina District Angler’s Association

1088. These general observer submissions stated that a 100-metre stretch of native woodland will be directly affected and removed at the point of abstraction and its removal will result in immediate and irreversible habitat loss at the abstraction point, fragmenting shoreline ecology and compounding the wider hydrological and ecological pressures already affecting the Lower Shannon system. The submission continued that the clearance of native woodland at the abstraction point cannot be regarded as minor or localised, as it represents a direct physical impact that must be fully assessed in its own right, particularly in the context of Natura 2000 protections and the cumulative effects of abstraction-related works.

10.3.13.1 Applicant’s Response

1089. At the RWI&PS site approximately 1.4ha of the Proposed Project area lies within the Lower River Shannon SAC; 0.6ha of which is aquatic habitat in the waters of Parteen Basin and 0.8ha of which is terrestrial habitat on the eastern bank of Parteen Basin. The woodland habitat within the footprint of the

RWI&PS and within the boundaries of the SAC (i.e. the 0.8ha) is not alluvial woodland, or any qualifying interest habitat for the Lower River Shannon SAC. It conforms to mixed deciduous conifer woodland (WD2) that is gradually reverting to ash-hazel woodland (NIS, Appendix H: Parteen Basin Habitat Assessment June 2016; NIS, Appendix I: Assessment of the Woodland Near Parteen Weir; and EIAR Appendix A8.4: Targeted Habitat Surveys). It is an old conifer plantation, largely wind-thrown, in which native species have become established.

1090. The effects of habitat loss at the RWI&PS are assessed in Section 8.5.2.1 of the EIAR and in Table 8.55, as well as Section 7.1 of the NIS in the context of the Lower River Shannon SAC.
1091. The mitigation measures, outlined in Section 8.8 of the EIAR and Section 7.1.4 of the NIS, detail aquatic and terrestrial habitat protection during the Construction Phase of the proposed RWI&PS. Overall, they aim to avoid direct ecological impacts where possible and mitigate for unavoidable losses through habitat creation, careful design, and phased construction management.
1092. The design incorporates native planting to enhance biodiversity and reinstate habitats within the site including woodland planting of species similar to that of the existing habitat, mosaic planting of native scrub and trees (as per Uisce Éireann Tree Protection Guidance), retention of the existing hedgerow at the entrance with native tree planting and species rich semi-natural grassland (referred to in the Landscape Plans as wildflower mix) either side of the site access road.
1093. As noted in Section 8.11.1.1 of the EIAR, although the Proposed Project would not adversely affect the integrity of any European site, it would still have an impact on biodiversity within the boundary of the Lower River Shannon SAC after the implementation of mitigation measures. This is not the case for any other European site within the Zol, as all other European sites are remote from the Proposed Project and the potential impact pathways connecting the sites to the Proposed Project are fully mitigated.
1094. The residual effects on non-qualifying interest habitats and species within the Lower River Shannon SAC are as follows:
- At the proposed RWI&PS there would be a permanent loss of approximately 0.55ha of mixed broadleaved/conifer woodland (WD2) and 216.87m of treelines (WL2)
 - Impacts on local bat populations.
1095. None of these residual biodiversity effects compromise the overall biodiversity resource of the Lower River Shannon SAC; thus, no likely significant negative effects are predicted, at any geographic scale. Therefore, there are no likely significant negative residual effects on any European site, at any geographic scale.

10.3.14 Site-Specific Ecological Impact Assessment

1096. The following general observer submission raised specific concerns about site-specific ecological assessment:

Unique ID	Name of Individual or Organisation
WSP_SUB_55	Laura Kavanagh

1097. This general observer submission stated that there is a failure to translate hydrological modelling outputs into site-specific ecological impact assessment.

10.3.14.1 Applicant's Response

1098. Hydrological impacts during the Operational Phase of the Proposed Project are assessed in Section 7.1.3.2.1 and Table 7.5 of the NIS. The results from the hydrological and hydrodynamic models demonstrate there would be no significant effects on water levels and the flow regime either upstream or downstream of the Proposed Project, therefore, the proposed abstraction is not predicted to have any effect on the qualifying interest habitats or species of the Lower River Shannon SAC.

1099. Further detail in relation to this submission and a site-specific ecological assessment is provided in Section 10.3.8.1.

10.3.15 Recommended Conditions

1100. The following general observer submissions recommended biodiversity-related conditions to be attached to any grant of planning:

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_65	Samuel Norris
WSP_SUB_69	The Lough Derg Anglers Association

1101. These general observer submissions requested that the following conditions be attached to any grant of planning:

- Ensure restrictions on tree planting and deep cultivation, with corridor management to prevent invasive species, are in place;
- Long-term ecological monitoring requirements should be clarified; and
- Attaching a mesh from river bed to buoys as a secondary measure to prevent migration of fish toward artificially generated flows, in the proposed restriction zone on the Shannon (100mx25m of buoys).

10.3.15.1 Applicant's Response

1102. The matters raised in these submissions are already comprehensively addressed through the mitigation measures and embedded design set out in the EIAR, and therefore do not necessitate the attachment of additional planning conditions.

1103. Mitigation measures to control the introduction or spread of INNS are included in Section 8.8.2.1.3, Section 8.8.3.2 and Section 8.10.3.1 of the EIAR. Replanting will be informed by an ECoW and guided by the All-Ireland Pollinator Plan (2021–2025) and the Pollinator Friendly Planting Code, ensuring the use of appropriate locally sourced native species consistent with existing genetic stock.

1104. Table 8.95 in Chapter 8 (Biodiversity) of EIAR provides a summary of the proposed mitigation and monitoring requirements during the Construction Phase of the Proposed Project, while Table 8.96 provides a summary of the mitigation and monitoring requirements during the Operational Phase.

1105. In addition to the proposed PWWC Intake Screens, to prevent debris and/or fish or eels being taken up into the raw water pumps, as a secondary measure, the openings from Parteen Basin into the Raw Water Intake Chamber would incorporate bubble curtains whereby fine bubble blown across the opening would discourage fish from entering the chamber.

10.4 Response to Specific Issues Raised by Prescribed Bodies

10.4.1 Assessment of Abstraction from the Parteen Basin

1106. The prescribed body submission from An Taisce raised specific concern relating to the ecological assessment of the abstraction from the Parteen Basin:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce

1107. This prescribed body submission highlighted that Lough Derg is designated as the Lough Derg (Shannon) SPA (site code: 004058), and the Parteen Basin is within the Lower River Shannon SAC (site code: 002165), and therefore, they both contain important and sensitive habitat for an abundance of bird and other species, and the proposal requires robust assessment as well as the implementation of conservation measures during project construction and operations should permission be granted.

10.4.1.1 Applicant's Response

1108. Detailed assessments of the potential for adverse effects on the integrity of the Lower River Shannon SAC and Lough Derg (Shannon) SPA are provided in Section 7.1 and Section 7.12 of the NIS, respectively. An ecological baseline description is provided, an examination and analysis of likely significant direct and indirect effects is undertaken, and design requirements and mitigation measures to avoid or reduce adverse effects are included. Likely significant effects of the Proposed Project in combination with other plans and projects are assessed in Section 8 of the NIS.

10.4.2 Adequacy of Fish Surveys

1109. The prescribed body submission from An Taisce raised a specific concern about the adequacy of fish surveys for the Proposed Project:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce

1110. This prescribed body submission raised concerns about the adequacy of the fish surveys at the abstraction point, and noted the application relies primarily on a 2016 survey by IFI which is now 10 years out of date and very limited in scope. The submission therefore considers it to be insufficient for assessing the subject proposal.

10.4.2.1 Applicant's Response

1111. In relation to the concerns about the adequacy of the fish surveys at the abstraction point, a response to this is provided in Section 10.3.7.1.

10.4.3 Mitigation Measures / Survey Conditions

1112. The following prescribed body submissions recommended additional mitigation measures to protect ecology, above those in the planning application, to be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)
WSP_SUB_88	Inland Fisheries Ireland (IFI)

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Unique ID	Name of Prescribed Body
WSP_SUB_98	The Heritage Council

1113. The prescribed body submission from An Taisce emphasised the importance of adopting a mitigation hierarchy which seeks to avoid adverse impact to and removal of established biodiversity features along the entirety of the pipeline route. The submission continued that, as a last resort, any tree or vegetation removal which is considered unavoidable should engage in replacement planting which utilises native species of Irish provenance.

1114. The prescribed body submission from An Taisce also stated the following in relation to specific infrastructure elements of the Proposed Project:

- The transmission cabling route proposed for the Raw Water Intake should avoid particularly ecologically sensitive sites;
- Potential ecological impacts to facilitate construction of the new access road to the pumping station should be mitigated against, with particular regard to sensitive siting of the access road route;
- The siting of the two proposed rising water mains should have regard to ecological sensitivities, and regular maintenance and a rapid response protocols in the event of infrastructural defect should also be conditioned as part of development consent;
- It should be ensured that appropriate and rigorous ecological surveys of sufficient seasonality and duration have been carried out prior to commencement of construction works for the WTP to account for potential disturbance to species such as birds, and post-construction remediation of any disturbed habitat in the surrounds of the treatment plant would be a necessary condition of any development consent;
- A full assessment of potential construction phase impacts to nature reserves and locally important biodiversity sites should be carried out, additional to European Sites (SACs and SPAs) and pNHAs / NHAs for the proposed 37-kilometre pipeline of treated water from the WTP to the BPT; and
- The new permanent access road for maintenance at the BPT requires integration into an ecological impact assessment to ensure that the route seeks to avoid sites of highest sensitivity.

1115. The prescribed body submission from the NPWS stated that:

- Mitigation for habitat loss should ensure that local connectivity at strategic locations is maintained both temporally and spatially;
- The proposed time period for confirmatory pre-construction surveys (maximum of 10 to 12 months in advance of works) is too loose, and given the level of local otter activity, and the known existence of three holts and potential for switching between them, is not considered acceptable unless followed up by a survey immediately prior to commencement of works in the area, as specified in the NRA (now Transport Infrastructure Ireland (TII)) guidelines;
- Surveying trees for bat roosts a month before felling is insufficient, as bats may occupy them in the interim, and instead recommends re-surveying within one week of works and carrying out immediate pre-felling inspection at height;
- The submission also calls for clearer timing of tree felling, advising it should avoid the November to February hibernation period unless necessary and only in temperatures above 10°C if unavoidable;
- Any trees subject to trimming during operation should also be checked for potential bat roost features in advance by the project ecologist.

1116. The prescribed body submission from IFI requested the following conditions in relation to biodiversity:

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- Any works directly affecting watercourses or riparian habitats must first be submitted to IFI for assessment;
- Any in-stream works can only be carried out during the open season for salmonids (1 July to 30 September) of each year. A method statement for all riparian / in-stream works must first be submitted to IFI for approval;
- If stream diversions are necessary, electrofishing to remove fish from channel 'pre-diversion' may be required. If these works are carried out by a consultant, then a Section 14 licence will be required from the Inland Fisheries Section of the Department of Climate, Energy and Environment; and
- In terms of habitat loss and local continuity, interim measures including small-scale earthworks and landscaping, and local alterations to the proposed phasing sequence, as well as advance planting to ensure alternative pathways are available may need to be implemented locally in certain situations, to avoid short to medium-term interruptions to connectivity before mitigation planting becomes effectively established.

1117. The prescribed body submission from The Heritage Council stated that mitigation measures relating to biodiversity included in the planning application should be implemented in full, but recommended a number of additional mitigation measures to be attached as conditions to any grant of planning permission, which are as follows:

- Particular emphasis should be placed on the local seed bank as a source for reinstatement and restoration works;
- Scope out the possibility of providing fence / barrier free access along the linear corridor of the Proposed Project, particularly on publicly owned land, to create an ecological corridor, within the context of any CPO / legal land ownership agreements;
- Pre-construction species-specific surveys would be required as sections of the route commence works. These surveys could include more detailed view of the habitat on-site in terms of quality and composition This would be particularly important for any areas that were not accessible during the initial survey;
- Pre-construction surveys will be required for the presence of trees / features suitable for bat roost potential, badger setts, otter holts etc. For other species, similar mitigation in terms of pre-construction surveys, for example larval web survey in terms of Marsh Fritillary, would be essential;
- The phasing of the construction works is key and although this has been noted in relation to ornithology, this should also be fundamental mitigation for all species effected. The seasonal restrictions for breeding and wintering birds are especially critical and should be adequately conditioned; and
- Recommend greater effort in terms of the treatment of invasive species, to go beyond removal of plants to a licensed facility. Best practice involves more actions (i.e. to remove all soil within 7 metres of all plants, sieve it for bits of roots and then make sure to dispose of bits of roots and soil appropriately).

10.4.3.1 Applicant's Response

1118. In relation to the submission received from An Taisce:

1119. The matters raised have been comprehensively addressed within the submitted planning documentation, including the EIAR and supporting technical appendices. Repeat ecological surveys will be undertaken in 2026, where appropriate, to ensure that baseline data remains current and robust. In addition, pre-construction surveys will also be carried out, having regard to the approach outlined in Section 8.8 of the EIAR.

1120. A full assessment of likely significant effects on nature reserves and locally important biodiversity sites, in addition to European sites (SACs and SPAs) and proposed Natural Heritage Areas (pNHAs)/Natural Heritage Areas (NHAs), is provided in Chapter 8 (Biodiversity) of the EIAR. The potential for adverse effects on the integrity of European sites is further assessed in the accompanying NIS.
1121. The application has been developed in accordance with the mitigation hierarchy of avoidance, minimisation, and restoration. As outlined in Section 8.8.2.1.1 of the EIAR, the design process has sought, where feasible, to avoid areas of high ecological value and to protect landscape and habitat quality.
1122. The CEMP (EIAR Appendix A5.1) sets out the framework for ongoing implementation of the mitigation hierarchy through detailed design and the Construction Phase. This includes measures to identify further opportunities to avoid or reduce environmental impacts, including but not limited to:
- Minimising habitat loss within the Construction Working Width, where practicable, through retention of existing vegetation within the Planning Application Boundary, particularly areas of high ecological value such as woodland and habitats supporting protected species (e.g. such as devil's-bit scabious, which supports marsh fritillary)
 - Avoidance, where possible, of disturbance to protected species' breeding sites, including badger setts, otter holts, and bat roosts
 - Retention of vegetation and landscape features that provide ecological, screening, or amenity value.
1123. Any habitats, including trees, scrub or hedgerows adjacent to, or within, the Proposed Project which are intended to be retained will be afforded adequate protection, by complying with National Roads Authority '*Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes*' (National Roads Authority 2006), prior to construction works commencing. These commitments are recorded in the Register of Environmental Actions and Commitments (Annex G of EIAR Appendix A5.1).
1124. With respect to 'rapid response protocols in the event of infrastructural defect', in line with the Operational Strategy (EIAR Appendix A4.1), in the unlikely event that a leakage incident should occur, remotely operated automated Line Valves will be closed in order to limit the amount of water that can discharge from the affected section of pipe. If required, the section of pipe can then be drained down, water will be de-chlorinated and there will be a controlled discharge to nearby watercourses, at flow rates appropriate to their capacity. Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur. Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners and the environment is minimised. Pre-emptive monitoring and inspections will be carried out routinely to allow the Applicant to identify and address any potential issues before they arise.
1125. With respect to construction-phase infrastructure elements, ecological sensitivities have been considered in the design of the Proposed Project, with avoidance of highly sensitive areas incorporated where practicable. Maintenance and operational protocols, including rapid response procedures for infrastructure such as rising mains and the BPT, will be subject to appropriate environmental management controls and consent conditions, as applicable.
1126. In relation to the submission received from NPWS:
1127. The design and construction methodology has incorporated measures to ensure that habitat connectivity is maintained, insofar as practicable, throughout the Construction Phase. This includes the implementation of a phased construction approach to minimise the duration of habitat severance at any one location. Spatial connectivity will be preserved through the retention and protection of key habitat

features where possible, and the reinstatement of disturbed areas immediately following construction. In addition, site-specific mitigation measures, such as the provision of temporary crossings or ecological corridors where required, will be informed by pre-construction surveys and ongoing monitoring by an ECoW. These measures will ensure that disruption to faunal movement is minimised and that connectivity between habitats is maintained at strategic locations within the Proposed Project.

1128. Confirmatory pre-construction surveys for otter (resting or breeding places) will be undertaken prior to the commencement of any works in order to identify any changes in otter activity or holt/couch locations/status and to verify the mitigation that is to be implemented. Pre-construction surveys will be conducted no more than 10-12 months in advance of construction, as per the NRA guidelines (2008). In addition, as noted in Section 8.8 in Chapter 8 (Biodiversity) of the EIAR, a suitably qualified ECoW/team of ECoWs will be appointed by the Applicant or its agents but not the appointed Contractor (although the appointed Contractor may have their own ecologists) to oversee and implement all ecological mitigation contained in the EIAR, NIS and register of environmental actions and commitments (within EIAR Appendix A5.1: CEMP), and to act as a liaison between the Applicant and the Planning Authority in the discharge of planning conditions relating to flora and fauna. The ECoW role will be undertaken and/or supervised by an ecologist with the relevant expertise and level of experience. The role of the ECoW will include:
- Pre-construction monitoring surveys to confirm the presence of protected species
 - Monitoring habitats and species during the course of construction works
 - Providing recommendations on appropriate responses/actions to site-specific issues (e.g. identification of previously unrecorded breeding sites during construction works).
1129. With regards surveying trees for bat roosts, it was deemed prudent to undertake pre-construction surveys of any trees identified as potential bat roosts (PBRs) one month in advance of proposed works to facilitate the application of a derogation licence, if required. Such applications often require 4-6 weeks to process. Therefore, it is important to prepare for such in advance of planned tree felling works due to the short window of permitted tree felling.
1130. In consultation with the onsite ECoW and tree contractors, additional surveys will be planned and undertaken in advance of construction, where deemed appropriate (as noted in Section 8.8 in Chapter 8 (Biodiversity) of the EIAR), taking into consideration the results of pre-construction surveys and advice from the bat specialist. The pre-construction surveys will allow detailed planning of appropriate surveys according to best practice. Tree felling will avoid the colder winter months and will only be undertaken during mild weather conditions, which as stated in Collins (2023), is when air temperature is above 10°C.
1131. Should the competent authority consider that any further conditions are required, the scope and wording of same would be a matter for determination by An Coimisiún Pleanála.
1132. In relation to the submission received from IFI:
1133. As outlined in Chapter 8 (Biodiversity) of the EIAR, all works in or near surface waters will be undertaken in accordance with the mitigation measures detailed therein. These measures align with the '*Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*' (IFI 2016), or as otherwise agreed with IFI during the Construction Phase.
1134. As noted in Section 8.8.3 of the EIAR, in-stream works will not be carried out in watercourses frequented by salmon or trout during the annual close season and will be undertaken outside of the lamprey spawning season. River and brook lamprey spawn during the period March to April, while sea lamprey spawn during the period May to August. In-stream works may be carried out between October and March if juvenile lamprey are translocated; however, the salmonid spawning season will still need to be

considered. The duration of the season for salmonids varies regionally. In-stream works will take place under the direction of the ECoW. The timing of works will always be considered on a site-specific basis (typically works can be carried out during the period July to September) and in agreement with IFI, as some rivers have late spawning salmonids.

1135. A Surface Water Management Plan (SWMP) has been prepared and includes details of the proposed watercourse crossing methodologies (refer to Annex A of EIAR Appendix A5.1: CEMP). Prior to the commencement of works, the CEMP (including the SWMP) will be issued to, and discussed with, all parties involved in the construction of the Proposed Project, including sub-contractors, to ensure the protection of aquatic ecological receptors within the ZOI. The SWMP sets out a range of measures to prevent siltation, erosion, surface water runoff, and accidental pollution events, which have the potential to negatively effect water quality during the Construction Phase.
1136. As noted in Section 8.5.3 and Section 8.8.3 of the EIAR, prior to dewatering, all watercourses with fisheries potential will be electrofished (under Section 14 Authorisation) and fish will be placed upstream of works.
1137. Timing of works as a mitigation to protect KERs (as outlined in Section 8.8 of the EIAR) will be adhered to, or where it is not feasible, alternative protective measures will be put in place. The main pipeline works will be carried out outside of the winter period (which is considered to be from December to February inclusive). There will have to be some pre-advanced works, such as installation of temporary fencing, access gates and hedgerow clearance, ahead of the main pipeline works. Mitigation measures will be applied on a site-specific basis, informed by ongoing ecological monitoring by an ECoW and detailed design development, to ensure that continuity of habitat connectivity is maintained as far as practicable throughout the Construction Phase.
1138. In relation to the submission received from The Heritage Council:
1139. As noted in Section 8.8.2.1.1 of the EIAR, the general principles for reinstatement involve natural regeneration of vegetation, where feasible, by reusing the stored topsoil seedbank from its original location for reinstatement.
1140. The type of fencing provided along the Construction Working Width would be site specific, dependent on the particular farming methods at each location and agreed with landowners in advance of the works commencing. It would typically be put in place a week or two before commencement of pipeline construction and removed following reinstatement of the land. Where feasible, existing treelines and hedgerows along the boundaries of the Construction Working Width will be retained and protected in situ, recognising their importance for both agricultural delineation and ecological connectivity. The alignment of temporary fencing will, where practicable, be designed to avoid unnecessary removal or disturbance of these features. In locations where minor encroachment cannot be avoided, works will be kept to the minimum extent necessary and appropriate reinstatement or compensatory planting will be undertaken following construction.
1141. Repeat ecological surveys will be undertaken in 2026, where appropriate, to ensure that baseline data remains current and valid. Pre-construction surveys would also be carried out, having regard to the approach outlined in Section 8.8 of the EIAR.
1142. Timing and phasing of works is proposed as a mitigation measure to protect KERs, as outlined in Section 8.8 of the EIAR. This approach will be applied across all ecological receptors, where relevant, and not solely ornithology. Where adherence to these timing constraints is not feasible, alternative, site-specific mitigation measures will be implemented. These will be informed by ongoing ecological monitoring undertaken by the ECoW, as well as detailed design development. Construction activities, including the main pipeline works, will be undertaken on a phased basis, with works generally

programmed outside the winter period. While the overall construction programme is anticipated to span approximately three years, individual sections will typically be completed within shorter durations (generally within a single year), and land will usually be affected for no more than 18 to 24 months. Pre-construction activities, such as temporary fencing, access installation, and hedgerow clearance, will also be carefully scheduled and controlled in line with ecological mitigation requirements.

1143. As noted in Section 8.8.2.1.3 of the EIAR, a Non-Native Invasive Species Management Plan has been prepared and included in the CEMP (EIAR Appendix A5.1) and will be implemented sufficiently far in advance of the proposed construction works commencing so as to allow time to adequately control all target INNS populations within the Zol of the Proposed Project, having regard to the specific timing/seasonal constraints that apply in relation to each individual species. The Non-Native Invasive Species Management Plan will direct the Contractors in implementing the specific mitigation measures required in relation to individual INNS.

10.4.4 Geographical Value Ascribed to Habitats

1144. The prescribed body submission from The Heritage Council raised a specific issue relating to the geographical value ascribed to habitats in the biodiversity impact assessment:

Unique ID	Name of Prescribed Body
WSP_SUB_98	The Heritage Council

1145. This prescribed body submission stated that the geographical value ascribed to habitats in the EIAR (as categorised under Fossitt), applies a blanket value to each habitat type irrespective of the quality of the habitat at a specific location, or the prevalence of such habitat in a certain area. The submission continues that it is possible that in some locations along the route that a certain habitat may merit a higher geographical value-based judgement (e.g. County Importance), depending on the quality and composition of the habitat, and the prevalence of the habitat in that specific area. The submission also stated that, furthermore, The Heritage Council assume that should any of these habitats (in specific locations) correspond to Annex I / Priority Annex I habitats, that this would have been noted, but requests clarification on this matter.

10.4.4.1 Applicant's Response

1146. An ecological evaluation of KERs (including habitats) within the study area of the Proposed Project is provided in Table 8.52 of the EIAR. Where the same habitat type merits a higher geographical value, the habitat is given a separate row in the table (e.g. cutover bog of local importance (lower value) and cutover bog of local importance (higher value)). This same approach is followed throughout Chapter 8 (Biodiversity) of the EIAR.
1147. As noted in Section 8.2.5.1.1 of the EIAR, detailed botanical surveys for the Proposed Project and previous iterations of the project were carried out between 2017 and 2024 at target areas assessed as being of potential national importance or greater, areas identified as having potential for rare or protected flora, as well as at the infrastructure sites which would be subject to permanent habitat loss (based on a combination of interpretation of orthophotography and collation of available existing habitat information). The RWI&PS and WTP were also surveyed for fungi, lichen, and bryophytes at the request of National Parks and Wildlife Services (NPWS). It should be noted, these sites were not considered to be sensitive habitats for rare or protected fungi, lichen, or bryophytes, nor were any other sensitive habitats for these species identified within the Zol of the Proposed Project. Botanical surveys are summarised in Table 8.6.
1148. During the detailed Botanical Surveys, additional relevé (vegetation plot) data were collected. The methodologies for each of these surveys are provided in Appendix A8.4 (Target Habitat Surveys

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Report), Appendix A8.2 (Assessment of the Woodland Near Parteen Weir), Appendix A8.1 (Parteen Habitat Assessment), Appendix A8.3 (Site Description of Coagh Upper Fen, County Offaly), Appendix A8.6 (Fungi Survey Report), Appendix A8.7 (Lichen Survey Report), Appendix A8.8 (Bryophyte Survey Report) and Appendix A8.5 (Rare Plants Survey Report). Botanical surveys were not repeated for sites where the habitats and habitat conditions were verified as unchanged (i.e. the data from the botanical survey was still considered to be valid) during habitat surveys in subsequent years (as detailed in Table 8.5), or where changes to the route of the Proposed Project resulted in sites being no longer situated within the Zol.

1149. No Annex I habitats were recorded within the Proposed Project; however, Annex I habitats were recorded within the study area. Annex I habitats, identified through the desktop study analysis or recorded during habitat surveys, were avoided during the route selection process (Chapter 3: Consideration of Reasonable Alternatives). Repeat surveys were not required at sites subsequently avoided by the Proposed Project. A summary of the Annex I habitats identified within the study area are presented in Section 8.3.2.1.3.2 of the EIAR and Table 8.52.

10.4.5 Assessment Against Various Climate Change Scenarios

1150. The prescribed body submissions from An Taisce and Clare County Council raised specific concerns relating to the assessment of the proposed abstraction against various climate change scenarios:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce
WSP_SUB_110	Clare County Council

1151. These prescribed body submissions stated that climate change will have increasingly significant impacts on water and rainfall levels around the country. The submission continued that climate modelling used in the abstraction assessment uses the existing water management regime, including the current 10m³/s compensation flow and assumes this will remain in place as the baseline condition, however, this existing water management regime has not been ecologically assessed under The Habitats Directive. The submission further stated that the assessment of the proposed abstraction amounts has not considered whether or not this would impact the achievement of ecological restoration measures required under the Habitats Directive.

10.4.5.1 Applicant's Response

1152. The Habitats Directive does not require an assessment against hypothetical or undefined future ecological conditions. Under Article 6(3), the key obligation is to assess whether a plan or project, either alone or in-combination with other plans or projects, would adversely affect the integrity of a European site in view of its conservation objectives. This assessment must be undertaken on the basis of the site's current condition and the conservation objectives as defined by the competent authority.
1153. For sites designated as SACs, the conservation objectives reflect the ecological requirements of the qualifying habitats and species under the prevailing environmental conditions. Potential future changes in site management or ecological restoration measures do not form part of the assessment baseline unless they have been formally adopted and are sufficiently defined. Accordingly, the AA is based on the best available scientific knowledge of the site's current ecological status and functioning.
1154. As noted in Section 5.2.1.1.2 of the NIS, a version of the hydrological model was run to investigate the likely impacts in the future when the Lake hydrology is subject to climate change. A precautionary approach to the consideration of climate change and a 'reasonable worst case' for the 2080s epoch has been used in the EIAR. Climate change simulations for a 'reasonable worst case' scenario for the

2080s epoch with the inclusion of the Proposed Project indicate that simulated Lake levels would draw down closer to the bottom of the Normal Operating Band during the 2018 worst drought event. However, the additional simulated Lake level drawdown is still fitting within the range of ESB normal observed Lake level fluctuations, resulting in Lake levels still remaining within the Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB apply to Parteen Basin, and would mean no change to the Old River Shannon compensation and fish pass flows always being met from the inclusion of the Proposed Project abstraction.

1155. Appendix K of the NIS demonstrates that the Proposed Project would not impede the ability to restore the conservation objectives of the Lower River Shannon SAC. It should be noted that the restoration objectives associated with the hydrological regime are described in general terms (e.g. 'appropriate hydrological regime necessary for maintenance of alluvial vegetation'). Reinstatement of more natural water regimes would involve a combination of partial storage of flood inflows and controlled releases to the Lower River Shannon, reflecting a naturally variable freshet profile.
1156. As noted in Section 4.1.1.2 of the NIS, a sensitivity analysis to the proposed Eflow regime at Parteen Weir (CDM Smith 2021), in which the existing 10m³/s compensation and fish pass flow is replaced by a varying compensation flow with the inclusion of freshets (increased flows during a flood event or a release of additional water) to assist migratory fish up the Old River Shannon and into Parteen Basin, was undertaken. This found that similar water level differences were simulated during the droughts when the proposed abstractions were included in the Eflow scenario as were predicted for the case for a constant compensation flow. However, this assumes that freshets would not be released during flood (i.e. when spilling) or drought conditions. The basis of this drought period assumption is that if the Eflow is an attempt to mimic the natural flow regime then artificially releasing standard freshets over this period would be introducing a non-natural characteristic to the flow regime. In summary, the hydrological model found that the released flows to the Old River Shannon during periods of spill are virtually the same with or without the proposed Eflows regime in place. However, outside of flood and drought periods more water is released, together with flow variability, by the Eflows regime compared to the use of a uniform 10m³/s compensation flow. Full details of the hydrological model Eflows sensitivity analysis are provided in the EIAR Appendix A9.1 Annex A (Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels). Reinstatement of more natural water regimes would involve partly storing all flood inflows and partly spilling to the Lower River Shannon in a naturally variable freshet time profile. Having due regard to the River Shannon statutory compensation flow obligations, ESB's current practice is that late spring water level is kept near the top of the Normal Operating Band. At winter flood times, and when autumn recovery has started, greater sharing of inflows between storage and the Old River Shannon reduces water available for use in hydropower, reducing revenue to ESB. The Proposed Project would be abstracting up to a maximum of 300Mld or 3.47m³/s and while there may be technicalities for ESB in adjusting gates to provide flow variability, the Proposed Project would not impede a flow-sharing decision between hydropower and statutory compensation flow at appropriate times of the year and is not an impediment to any Parteen Weir gate adjustments to implement it.⁷
1157. The assessment concludes that the Proposed Project will not give rise to adverse effects on the integrity of any European site. Specifically, the Proposed Project does not introduce changes to hydromorphological conditions that would affect the structure or function of qualifying interest habitats, nor does it result in deterioration of the conservation status of qualifying interest species.

⁷ This is referred to as a more naturalised flow regime in Chapter 11 Water (Hydrological Modelling and Water Levels).

10.4.6 Potential Fisheries Impacts

1158. The prescribed body submission from IFI raised specific issues relating to the potential impacts of the Proposed Project on fisheries resources and aquatic biodiversity:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

1159. This prescribed body submission stated that fish and the aquatic environment must be considered at all stages and across all elements of this project to ensure protection of the fisheries resource, and that consultation with IFI must be on-going to allow data exchange and ultimately to maximise the environmental benefits of the project and to secure sustainable water management in the future. The submission continued that the threatened nature of these fish species listed in the submission makes them especially vulnerable to any additional pressures such as that which may arise from the current proposal.
1160. This prescribed body submission also stated that IFI has serious concerns over the sustainability of a pipeline of considerable length (c. 170 km) which will cross many watercourses and could result in significant fisheries habitat loss or damage.

10.4.6.1 Applicant's Response

1161. Potential impacts on fish and the aquatic environment during the Construction Phase are assessed in Section 8.5.3 of the EIAR. Impacts during the Testing and Commissioning Phase are addressed in Section 8.6, with cross-reference to Section 8.5, while impacts during the Operational Phase are outlined in Section 8.7.3.
1162. A SWMP has been prepared and includes details of the proposed watercourse crossing methodologies (refer to Annex A of EIAR Appendix A5.1: CEMP). Prior to the commencement of works, the CEMP (including the SWMP) will be issued to, and discussed with, all parties involved in the construction of the Proposed Project, including sub-contractors, to ensure the protection of aquatic ecological receptors within the ZOI. The SWMP sets out a range of measures to prevent siltation, erosion, surface water runoff, and accidental pollution events, which have the potential to negatively affect water quality during the Construction Phase.
1163. As outlined in Chapter 8 (Biodiversity) of the EIAR, all works in or near surface waters will be undertaken in accordance with the mitigation measures detailed therein. These measures align with the '*Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters*' (IFI 2016), or as otherwise agreed with IFI during the Construction Phase. Ongoing consultation will be maintained with IFI throughout the Construction Phase, and, where relevant, into the Testing and Commissioning and Operational Phases, to ensure that all works and mitigation measures remain appropriate and responsive to site conditions. Implementation of mitigation measures will be overseen and monitored on a daily basis by a suitably qualified ECoW, who will ensure compliance with all environmental commitments, including the maintenance and effective operation of attenuation, sediment, and erosion control measures (e.g. hydrocarbon interceptors and silt traps).
1164. Section 8.8.3.1.3 of the EIAR further notes that, in addition to mitigation measures designed to avoid or reduce likely significant effects (such as the replacement of spawning gravels), opportunities for ecological enhancement will also be considered in consultation with IFI. This may include the reintroduction of gravels at watercourse crossings along the Proposed Project. Such measures would typically be implemented upstream and downstream of scour pools where suitable salmonid spawning habitat would naturally occur. In modified or straightened channels, the installation of paired deflectors may be appropriate to promote scour and pool formation, with gravel placement at the downstream end

of the scour pool (O'Grady 2006). Any gravel reintroduction would be confined to the Planning Application Boundary (typically within approximately 50m of a watercourse, corresponding to the Construction Working Width), and would not require permanent access for maintenance. Where feasible, surplus material generated during construction would be reused for this purpose.

1165. Overall, through the application of embedded design measures, careful construction sequencing, robust sediment and pollution control, habitat reinstatement, and ecological protection protocols, potential impacts on aquatic ecology will be effectively minimised. As a result, any residual effects are predicted to be localised, temporary, and not significant at any geographic scale. The combined implementation of these measures, together with those outlined in the EIAR, Chapter 9 (Water), will ensure the effective protection of aquatic ecological receptors and fisheries resources, including those downstream of the Proposed Project.

10.4.7 Existing and Future Pressures on Special Conservation Areas Linked to Abstraction

1166. The prescribed body submission from IFI specifically raised issues relating to the assessment of existing and future pressures upon all SACs linked to abstractions and future predicted flows:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

1167. This prescribed body submission stated that, with regards to predictions of future lower flows in Irish Rivers, these systems include the critically important and internationally recognised SAC systems. The submission further stated that it is important that the Proposed Projects recognise the existing and future pressures upon all SACs linked to abstractions and future predicted flows. The submission continues that alleviation of the pressures upon these SAC systems linked to the Applicant's abstractions must be integral to this overall Proposed Project.

10.4.7.1 Applicant's Response

1168. In relation to the statement on existing and future pressures on all SACs associated with abstractions and predicted future flows, a response specific to the abstraction from Parteen Basin is provided in Section 10.2.3.1.
1169. With regard to abstractions required during the Testing and Commissioning Phase, the procedure for pipeline testing and commissioning is detailed in Appendix A5.2 (Commissioning Strategy). Hydrostatic pressure testing using filtered raw water is necessary to demonstrate the leak-tightness of the pipeline.
1170. Potential water sources for hydrostatic testing were assessed, and raw water from local watercourses was identified as the preferred option for the reasons outlined in Annex A of EIAR Appendix A5.2 (Commissioning Strategy). Watercourses along the pipeline route were evaluated, and smaller waterbodies with a Q95 flow of less than 100l/s were excluded. The 'Q95' flow represents the flow rate exceeded 95% of the time, meaning this is a conservative measure and water availability would only be constrained under exceptional conditions.
1171. A total of eight suitable waterbodies were identified for temporary abstraction associated with testing and commissioning (see Annex B of EIAR Appendix A5.2). The rate of abstraction from these sources will remain below the threshold requiring an abstraction licence.
1172. The potential for adverse effects on the integrity of European sites arising from these abstractions is assessed in Section 7 of the NIS, which considers all relevant European sites within the ZoI. In accordance with the Commissioning Strategy (EIAR Appendix A5.2), and as described in Section

7.1.4.3 of the NIS, a range of embedded mitigation measures will be implemented during hydrostatic testing to avoid or minimise potential impacts.

1173. These measures include strict control of raw water abstraction, with intake velocities maintained below 0.15m/s, abstraction volumes limited to no more than 10% of Q95 flows under defined conditions, and a prohibition on abstraction when flows fall below Q95 levels. Abstraction will be carried out using fine mesh intake systems and supported by pre-abstraction water quality sampling to determine appropriate treatment requirements, including management of suspended solids, invasive species, and water chemistry.
1174. A temporary, small-scale intake system will be used in combination with modular treatment processes, including filtration and disinfection. This approach ensures that both abstracted and discharged water meet the required environmental protection standards.

10.4.8 Potential Downstream Effects of the Proposed Project on Tailrace / Old Channel

1175. The prescribed body submission from IFI raised specific issues relating to the potential downstream effects on the ecology and environment of the tailrace and the old channel:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

1176. This prescribed body submission stated that, while there may be no impact on the lake if levels are maintained within the normal operating band, there may be downstream effects on the ecology and environment of the tailrace and the old channel. The submission continued that this will have potential implications for both up- and down-stream migrating fish and resident fish in the lower channel, and the contingency for this scenario needs to be clarified and mitigation measures defined and built into the operating procedures.

10.4.8.1 Applicant's Response

1177. As detailed in Section 5.2.1.1.3 and Section 5.2.1.1.4 of the NIS, the Proposed Project would reduce the total volume of water passing through Ardnacrusha by approximately 2%, not by altering flow rates but by slightly reducing the duration of generation. In practice, this represents a minor adjustment within the range of variability already managed by ESB under normal and extreme flow conditions.
1178. As flow rates through the turbines remain unchanged, downstream water levels in the Tailrace and Old River Shannon are not expected to change perceptibly. Any localised or short-term variations (e.g. near low tide) would be negligible and further moderated by tidal influence. Hydrological modelling confirms that flow patterns, including statutory compensation flows to the Old River Shannon, remain unaffected.
1179. Existing operations already involve substantial daily and seasonal variation in Tailrace flows, including extended no-generation periods with only minimal fish pass discharge. The proposed abstraction would marginally increase such periods, but the overall effect is insignificant in the context of current conditions.
1180. Importantly, there would be no change to compensation flows, no alteration to the hydropower regime's operational flexibility, and no additional barriers to fish migration. Furthermore, slightly longer non-generation periods may encourage downstream smolt migration via Parteen Weir rather than turbines.
1181. Overall, modelling demonstrates no significant impact on hydrology, ecology, or fish movement in the Tailrace or Old River Shannon. Accordingly, no additional mitigation measures are required beyond existing operational controls.

10.4.9 Potential Impact of the Proposed Project on Otter

1182. The prescribed body submission from the NPWS raised specific issues relating to the potential for impacts on otter:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1183. This prescribed body submission stated that, although the application for a Regulation 54 derogation licence for Otters is only concerned with three holts within the works area, the survey results record twelve additional holts within 150m of the proposed works, as well as Otter signs including couches at the watercourse crossings. The submission continued that, of the additional holts, two are in the Kilmastulla area and are 18m and 25m from the works boundary respectively. The submission further stated that, since they also have significant potential to be disturbed by the proposed works, a Regulation 54 derogation licence will be required for these additional holts. Since no further details have been provided on the couches, the likelihood that a derogation licence will also be required for disturbance to these resting places cannot be ruled out, and the EIAR should include a detailed basis for their non-inclusion in a derogation licence application, if this is the case.

1184. The submission also stated that the proposal for removal of 150m of riparian habitat upstream (to facilitate a watercourse crossing) near the holt at TW-700 is of particular concern and while consideration has been given at a broad scale to habitat reinstatement post construction, it would be expected that measures would be proposed for ensuring continuity of habitat connectivity in keeping with the Conservation Objective for Otter for the SAC.

1185. The submission also stated that proposed time period for confirmatory pre-construction surveys (maximum of 10 to 12 months in advance of works) is too loose, and given the level of local Otter activity, and the known existence of three holts and potential for switching between them, is not considered acceptable unless followed up by a survey immediately prior to commencement of works in the area, as specified in the NRA (now TII) guidelines. This survey should be sufficiently comprehensive to be definitive, and if breeding cannot be ruled out, a precautionary approach is required.

10.4.9.1 Applicant's Response

1186. With regard to '*Guidelines for the Treatment of Otter Prior to the Construction of National Road Schemes*' (NRA 2008), four of the 12 holts (located outside of the Proposed Project) referenced in Section 8.5.2.4.3 of the EIAR were classified as either:

- Active, non-breeding holts located less than 20m from works involving tracked vehicles; or
- Active breeding holts located less than 150m from works involving piling or blasting.

1187. Accordingly, these holts were assessed in the EIAR for potential impacts associated with the Proposed Project. Mitigation measures to avoid or reduce likely significant effects on otter were prescribed in Section 8.8.2.4 of the EIAR.

1188. The remaining eight holts (also located outside of the Proposed Project) do not meet the above criteria and were therefore characterised, with regards to NRA (2008), as follows:

- Active holt located outside the Proposed Project and greater than 20m from works involving tracked vehicles (no piling or blasting proposed within 150m of holt).
 - Impact: Not impacted (or negligible impact).
 - Located beyond 20m, therefore avoiding direct disturbance from general construction activities (tracked vehicles).

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- No piling or blasting within 150m; therefore, significant noise and vibration effects are avoided.
- Although the holt is active, it lies outside all key disturbance thresholds.
- This holt would not be significantly impacted and typically would not require a derogation licence, assuming no change in activity status.
- Inactive holt located outside the Proposed Project and greater than 20m from works involving tracked vehicles (no piling or blasting proposed within 150m of holt).
 - Impact: Not impacted.
 - Inactive status reduces sensitivity.
 - Located beyond 20m, therefore avoiding direct disturbance from general construction activities (tracked vehicles).
 - No piling or blasting within 150m; therefore, significant noise and vibration effects are avoided.
 - This holt would not be significantly impacted and typically would not require a derogation licence, assuming no change in activity status.
- Inactive holt located outside the Proposed Project and greater than 20m from works involving tracked vehicles but less than 150m from works involving piling or blasting.
 - Impact: Not impacted (or negligible impact).
 - Inactive status reduces sensitivity.
 - Located beyond 20m, therefore avoiding direct disturbance from general construction activities (tracked vehicles).
 - Within 150m of piling/blasting, therefore within the potential disturbance zone.
 - This holt would require pre-construction survey to confirm activity status. Should the status change to active, a Derogation Licence may be required.

1189. It should be noted that the holt referenced in the DAU submission at TW-1400 (one of the four referenced in Section 8.5.2.4.3 of the EIAR), located 18m outside the Proposed Project in an area where works involving tracked vehicles are proposed, was classified as inactive. As such, it does not meet the criteria for an 'active, non-breeding' holt within the 20m buffer (NRA 2008). However, due to its proximity to the Kilmastulla River, approximately 1.4km upstream of the Lower River Shannon SAC, a precautionary approach was adopted and the holt was assessed in the EIAR for potential disturbance/displacement impacts.

1190. Indirect effects on holts located outside the Proposed Project boundary, including those arising from noise and vibration disturbance, were not included within the scope of the Derogation Licence application. This position was based on an assessment of potential impact pathways and the incorporation of mitigation measures designed to avoid or minimise disturbance effects.

1191. Having regard to the '*Applications for Regulation 54 Derogations for Annex IV Species: Guidance for Applicants*', it was noted that a derogation is not required where it can be clearly demonstrated that the proposed works would not adversely affect the favourable conservation status of the species concerned, and would not give rise to the deterioration or destruction of breeding sites or resting places (i.e. compliant with Regulations 51 and 52). In this context, the assessment concluded that, in view of the separation distances involved and the implementation of mitigation measures, the potential for disturbance effects on holts located outside the Proposed Project boundary was either absent or reduced to a level that was not significant.

1192. The guidance further emphasises that derogation represents a measure of last resort and should only be pursued where no satisfactory alternative solution exists. In this instance, the design and implementation of mitigation measures form an integral part of the Proposed Project and were relied upon to avoid the occurrence of significant disturbance effects. As such, these measures constituted a satisfactory alternative to the need for derogation in respect of holts located outside the Proposed Project boundary.
1193. It was also noted that the guidance explicitly allows for mitigation to be taken into account in the assessment of impacts on Annex IV species. The conclusions reached were therefore contingent upon the full and effective implementation of the prescribed mitigation measures and adherence to best practice construction methodologies.
1194. The exclusion of holts located beyond the Proposed Project boundary from the Derogation Licence application was considered to be reasonable, justified, and consistent with the requirements of the Habitats Regulations.
1195. Notwithstanding the above, and following further consideration of this submission, a precautionary approach has been adopted in relation to the demonstrated effectiveness of the proposed mitigation measures in addressing potential indirect effects. On this basis, an updated Derogation Licence application will be submitted. This updated application will include the addition of all couches and active breeding holts within 150m of the Proposed Project, as well as inactive holts within 20m of the Proposed Project (i.e. inactive holt 18m from the Proposed Project at TW – 1400, on the basis it may provide supporting habitat for other active holts in the Kilmastulla area, as per the DAU recommendation). In advance of construction, pre-construction surveys will be carried out within 150m of the Proposed Project to determine whether any new active holts have been established or if any previously inactive holts have become active. Where such changes are identified, a further updated Derogation Licence application will be submitted, as required.

10.4.10 Potential for Disturbance Impacts on Whooper Swans

1196. The prescribed body submission from the NPWS raised specific issues relating to the potential for disturbance impacts on Whooper Swans:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1197. This prescribed body submission stated that the potential for disturbance and displacement of whooper swans from the Proposed Project will need to be assessed, as will the risk of collision with the upgraded 38kV power line to the south. The submission noted that the current collision risk assessment is based on infrequent sightings of low numbers of Whoopers in this area, rather than on their susceptibility to collision, which is high.

10.4.10.1 Applicant's Response

1198. As noted in Section 3.4.1.2 of the NIS, two 125mm diameter unplasticised polyvinyl chloride (uPVC) ducts have been installed as part of the Killaloe Bypass, Shannon Bridge Crossing and R494 Improvement Scheme, which facilitate the installation of a 20 kV cable along the R494 from the Birdhill 38 kV Substation to the RWI&PS. In the event that access to these ducts cannot be made available for the Proposed Project, provision has been made within the Proposed Project for the construction of alternative ducting from the Birdhill 38 kV Substation along the R494 to the RWI&PS. The ducting would be laid in the same trench, along the eastern side of the R494, for a length of approximately 1.4km from the existing Birdhill 38 kV Substation to the entrance of the proposed RWI&PS access road. The ducting would be laid with a minimum cover of 750mm and a minimum spacing of 75mm between the ducts, in

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accordance with ESB standards (EIAR Appendix A4.2: Standard Specification for ESB 38 kV Networks). The 20 kV ducting would cross the Kilmastulla River (WCX077; which is within the boundary of the Lower River Shannon SAC at this location; Figure 3.2) using horizontal directional drilling methods. The trenchless crossing of the Kilmastulla River would be approximately 20m in length. The level of the ducting would be 1.0m below the invert level of the river at the crossing point.

1199. It should be noted, Table 8.50 of the EIAR reports a summary of the baseline information in relation to other species of low conservation significance recorded during winter bird surveys for the Proposed Project. It is assumed NPWS are instead referring to Table 8.51 and the high-risk level assigned to whooper swan in relation to collision with overhead lines.

- Table 8.75 assesses the potential effects of disturbance/displacement on key wintering avian ecological receptor species as a result of the Proposed Project (including trenchless construction, but excluding the 38 kV Uprate Works)
- Table 8.76 assesses the potential effects of disturbance/displacement on key wintering avian ecological receptor species as a result of the proposed 38 kV Uprate Works
- Table 8.91 assesses the potential risk of collision on key wintering avian ecological receptor species observed within the study area as a result of the proposed 38 kV Uprate.

1200. In relation to the proposed trenchless crossing of the Kilmastulla River at WCX077, as per Table 8.75, given the short-term duration of the construction works (typically 6 to 8 weeks) and the availability of alternative habitats in the wider surroundings (i.e. River Shannon catchment), the magnitude of the impact is assessed to be of low concern. Short-term slight negative effects are predicted for whooper swan in relation to disturbance/displacement impacts.

1201. In relation to collision risk associated with the proposed 38 kV Uprate, whooper swan are noted in the EIAR to be a high-risk species in terms of collision with overhead lines. They are not considered in Table 8.91 as they were not observed flying at Parteen Basin and were recorded flying above existing overhead lines at a Vantage Point overlooking the open countryside. However, as noted in Section 8.7.5.1.3 and Table 8.92, based on the long-term existence of the transmission line associated with the 38 kV Uprate Works at its current location, with no known records of collisions to date, potential direct negative effects on wintering bird species (including whooper swan) from collisions is likely to be negligible to low in the long-term, and thus no potential significant effects are predicted.

10.4.11 Potential Impact of the Proposed Project on Bat Species

1202. The following prescribed body submissions raised specific issues relating to the potential impact of the Proposed Project on bat species:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)
WSP_SUB_113	Offaly County Council
WSP_SUB_114	Tipperary County Council

1203. The prescribed body submission from the NPWS stated that, while the survey has effectively ruled out the current use of the cottage at Inchabeg by Lesser Horseshoes as a maternity roost, the possibility remains for the building to be used as a seasonal or transitional day roost, or as a more frequently used night roost outside of the main breeding season (i.e. outside of the coverage of the survey period). The submission continued that, it is recommended that the replacement roost is of adequate dimensions to accommodate a significant maternity colony as well as being suitable for almost continuous year-round occupation. The submission further stated that the NPWS recommends that the proposal is modified so that the dimensions of the replacement roost are increased to more closely match those of the

building that it will be replacing, while retaining the current detailed design specifications (including for other bat species) which have been clearly described. The submission also stated that further information is required on the potential for permanent fragmentation of habitat for commuting and foraging bat species as a result of the Proposed Project.

1204. The prescribed body submission from Offaly County Council stated that impacts on bats, which will be subject to a derogation license should also be carefully examined in informing the planning decision.

1205. The prescribed body submission from Tipperary County Council raised impacts on bats in the county and need for derogation licences.

10.4.11.1 Applicant's Response

1206. The provision of a day/night roost fully satisfies the 'like-for-like' replacement requirement as defined in Marnell *et al.* (2022) 'Bat Mitigation Guidelines for Ireland'. Survey results confirmed that lesser horseshoe bat utilised the cottage solely for day/night roosting, with no evidence of maternity use recorded. Accordingly, the proposed mitigation directly reflects the ecological function of the impacted structure and is both appropriate and proportionate.

1207. The inclusion of a maternity roost would constitute enhanced mitigation and is not justified based on the available survey data. Furthermore, any requirement to revise the bat house design at this stage would introduce undue delays to the Planning Application process and is not considered reasonable or necessary to meet the tests of a Derogation under Regulation 54.

1208. In response to this submission (post submission of the Planning Application in December 2025), surveying was undertaken in April 2026 to provide information on potential usage of the cottage (Building 1) outside the principal bat activity season (months of May to August). A dusk survey (completed according to Collins (2023) in suitable weather conditions and using night-vision aids) was undertaken on the 6th of April 2026. In addition, a full spectrum static bat detector was placed inside the structure for three nights of surveillance (6th to 9th of April 2026; please note, three nights of surveillance was completed during the permitted access period provide by local landowners). Three static bat detectors were also deployed along linear habitat features in vicinity of the cottage for a similar three nights of surveillance. The results of the dusk survey did not record lesser horseshoe bats emerging from the building. A soprano pipistrelle roost (ten individuals) was recorded emerging from a crack in the internal wall over a window frame (sealed with plywood) at the gable end of the cottage. The static unit within the cottage did not record lesser horseshoe bats entering or roosting within the cottage during the three nights of surveillance. The static unit confirmed that a single Daubenton's bat roosted in the structure (Day Roost – Night 2) during the static surveillance for one night.

1209. The static surveillance of the linear habitats did not record lesser horseshoe bat activity over the three nights of surveillance. Six bat species were recorded on the static units: Leisler's bat, common pipistrelle, soprano pipistrelle, Natterer's bat, brown long-eared bat, and Daubenton's bat. Static surveillance offers the optimum opportunity to determine if lesser horseshoe bats are commuting, foraging, and roosting in the survey area. Lesser horseshoe bats produce an echolocation call that is highly directional and quiet and therefore the bat, to be detected, requires it to fly within 5m to 9m of the microphone (Russ 2021; Barataud 2020). The static units were erected at a height suitable for the detection of lesser horseshoe bats (erected at 1.5m height within a linear habitat, the typical flight height for this species when commuting along linear habitats) and set to recorded from 30 minutes prior to sunset to 30 minutes after sunrise. The location of the static unit with the microphone directed along the path of the linear habitat also increases the opportunity of detecting this species of bat. As the unit was recording throughout the hours of darkness it allowed surveillance for approximately 27 hours. This static surveillance, coupled with the dusk survey, provides evidence that lesser horseshoe bats were

not roosting in the cottage or active in the vicinity of the cottage during the survey period, which was outside the typical bat activity season of May to August.

1210. The lesser horseshoe bat night roost recorded in Building 1 is located in County Tipperary, which is not one of the core counties that this species of bat is distributed. Therefore, the location is not associated with a particular SAC. The nearest SAC to the location of Building 1 is the Lower River Shannon SAC, 1.8km to the west of Building 1. However, the lesser horseshoe bat is not listed as a qualifying interest for this SAC. The nearest SAC in the neighbouring county, County Clare, with this bat species listed as a qualifying interest is located 18km to the west of the building (Danes Holes, Poulnalecka SAC).
1211. The single lesser horseshoe bat recorded in Building 1 is likely to be linked to the local population in the Killaloe area of County Clare. As a result of surveys completed for the Killaloe By-pass, lesser horseshoe bats were recorded in the area and during the construction of Clarisford Park Bat House and provision was designed for lesser horseshoe bats (occupancy has been recorded during monitoring of the bat house (pers. comm. Karen Banks)). In addition, a single bat (male) was also recorded in Ballina, County Tipperary in 2015 (pers. comm. Dr. Áine Lynch, NPWS).
1212. Bontadina *et al.* (2002) recorded that lesser horseshoe bats foraging ranges are between 12ha and 53ha of preferred habitat types. This study followed radio-tracked female bats and found that they spent 50% of their time foraging within 600m of the maternity roost. However, it was noted by Bontadina *et al.* (2002) that non-lactating females could forage at a much greater distance. Downs *et al.* (2016) documented that the maximum distance travelled by radio-tracked lesser horseshoe bats between June and October was 4.6km with an average distance of 2.2km. This was supported by radio-tracking studies undertaken for the proposed ring-road for Galway City. Radio-tracked individuals in the spring season of 2015 foraged up to 3.56km from the principal roost with an average travelled distance by tracked individuals of 2.86km reported (Rush & Billington 2015). During the previous autumn season, the maximum commuting distance in September recorded was 4.4km in a single night from the maternity roost (Rush & Billington 2014). Therefore, it is likely that the single lesser horseshoe bat recorded in Building 1 in July 2020 was either a male or non-lactating female. The bat survey results over six years of surveying provides evidence of low usage of the cottage by lesser horseshoe bats and therefore the Building 1 is deemed as a Night Roost for this species of bat. Consequently, the proposed bat house design is suitable to provide 'like-for-like' as required by Marnell *et al.* 2022.
1213. Survey effort will continue in September 2026 (as well as the during the main bat activity period months of May to August) to gather further information outside the summer months. This will follow the same protocol undertaken in April 2026.
1214. In relation to the new soprano pipistrelle roost recorded during the April 2026 survey, the incorporation of bat tubes into the external walls of the bat house design is a suitable alternative bat roost for this species of bat. Bat Eco Services Ltd. have completed mitigation bat houses for Vesper bats that incorporate bat tubes. Both bat houses, as a result of bat monitoring, provide evidence of soprano pipistrelle bat usage (Aughney & Boyle 2026). Monitoring of Bective Bat House recorded a total of ten soprano pipistrelles emerging from one bat tube while an eleventh individual was recorded roosting in a second bat tube. A third bat tube was also recorded as a roosting sit for brown long-eared bats. Oldstreet Bat House, during the course of five monitoring surveys, recorded three soprano pipistrelles roosting in bat tubes along with additional individuals of common pipistrelles and Leisler's bats. Monitoring of bat tubes inserted into bridges (typical roosting site for Daubenton's bats) by Bat Eco Services Ltd. have also documented such alternative roosts used by Daubenton's bats (e.g. Ross Bridge, County Clare). Therefore, the current bat house design will facilitate providing alternative roosts for additional bat species recorded roosting in the cottage in April 2026.
1215. With regards to further information on the potential for permanent fragmentation of habitat for commuting and foraging bat species as a result of the Proposed Project, it should be noted a total of

105 locations were surveyed using full spectrum static surveillance. A median Core Sustenance Zone of 3km, applicable to the nine resident Irish bat species, was applied to ensure comprehensive spatial coverage of the Proposed Project. A 3km buffer around each static detector location achieved 97% coverage. This static surveillance, combined with data from dusk and dawn surveys, as well as walking and driving transects, provided a detailed understanding of bat activity and distribution along the Proposed Project. Accordingly, the surveys undertaken to date are considered sufficient to support an informed assessment of the Proposed Project's potential impacts.

1216. Kyheröinen *et al.* (2019) states that foraging habitats near maternity colonies are of foremost importance for habitat management to ensure that the energy demand of pregnant and lactating females is met. Fragmented landscapes, where connective features such as hedgerows and tree lines are removed, may isolate roosts from potential feeding areas. For the Proposed Project, most bat roosts recorded during the surveys completed to-date were satellite, but all roosts were taken into consideration in relation to analysis. However, the level of dependency on commuting corridors varies considerably between bat species and this factor is dependent on the morphology of the bat species which is related to flight speed and typical echolocation calls. In relation to Irish bats species:

- Leisler's bats can detect prey items from longer distances and are adapted to flying at height in open spaces (Russ 2012). It is a bat species that is less reliant on linear habitats (Lundy *et al.* 2011) compared to other Irish bat species
- Nathusius pipistrelle, is the largest of our *Pipistrellus* spp. and is capable of long flights and typically is associated with large open waterbodies (e.g. Lough Neagh – Lundy *et al.* 2011) and therefore may also commute across open fields (Arnold & Braun 2002)
- Common pipistrelle follows streets, hedgerows, treelines or woodland edges for commuting and crosses open spaces of up to a few hundred metres in a direct flight (Simon *et al.* 2004) and in Ireland is a generalist forager that feeds frequently over agricultural grassland (Lundy *et al.* 2011)
- Soprano pipistrelle produces a similar echolocation call as common pipistrelles and therefore behaves in a similar manner but with a greater preference for waterbodies and actively selects riparian woodland and habitats (Lundy *et al.* 2011).

1217. Consequently, these species can easily cross open landscapes and therefore will be less impacted by the proposed treeline and hedgerow loss to facilitate works in relation to the Proposed Project.

1218. The remaining Irish bat species tend to be more reliant on 'clutter' habitats and therefore utilise linear habitats to commute through the landscape:

- Lesser horseshoe bat is a species with high frequency echolocation calls that rapidly attenuate, severely limiting its ability to echolocate objects more than a few metres away (5-9m; Russ 2021 and Barataud 2020). This species is highly dependent on vegetative cover and the removal of linear landscape features can hinder the opportunity to forage in the landscape (Schofield 2008)
- In the study by Berge (2007), the feeding areas of Whiskered bats were recorded at distances of 200m to 2,300m from the roost, while the average was 812m. In a German study, the average distance between maternity roosts and feeding areas was around 1km (Simon *et al.* 2004). In Ireland, radio-tracking studies completed by Buckley *et al.* (2013) reported that this species is associated with riparian woodland
- Daubenton's bat uses waterways and tree lines as commuting routes (Downs & Racey 2006). They prefer water bodies with bank side vegetation both for commuting and feeding (Warren *et al.*, 2000).
- Commuting Natterer's bats were recorded by Simon *et al.* (2004) to follow hedgerows and waterways with riparian vegetation. They are particularly important in areas where the foraging habitats are fragmented. Lundy *et al.* (2011) also reported that this species has an affinity for agricultural grassland located adjacent to woodland.

- For brown long-eared bats hedgerows, treelines, fences and river edges can be used as commuting routes (Swift 1998 and Entwistle *et al.* 1996) and tends to be associated with broadleaved woodland and riparian habitats (Roche *et al.* 2014).

1219. In relation to the five Irish bat species listed above, the bat encounters recorded during all the surveys completed to-date were mapped along with all bat roosts recorded. Because of the extensive static surveillance along the route of the Proposed Project, coupled with a large array of additional surveying (e.g. dusk surveys, walking transects), the distribution of the five bat species listed above is located along the entire length of the Proposed Project. This provided sufficient coverage to plan the bat mitigation measures outlined in the EIAR, Chapter 8 (Biodiversity).
1220. Using the smallest Core Sustenance Zone of 1km (whiskered bat) a 1km buffer zone was produced around these bat encounters and roost records. The location of watercourses was mapped because this habitat type is an important linear feature that all Irish bat species will use as a commuting route and foraging habitat. The entire route of the Proposed Project was examined and where a watercourse was located within the 1km zone around a known roost and/or bat encounter for the five listed bat species, it was deemed that landscape connectivity will be present during the duration of the proposed works. Where a watercourse was not present, the network of treelines and hedgerows within the 1km zone was examined to determine the level of connectivity and where potential mitigation measures maybe required during and post works. The specific locations for the required bat mitigation measures will be undertaken in consultation with a bat specialist to ensure the locations are appropriate.
1221. In relation to bat mitigation measures proposed, as noted in Chapter 8 (Biodiversity) of the EIAR, 'in areas where the removal of linear habitats may impact on the flight lines of local bat populations, temporary screens will be required to provide alternative commuting paths until new planting is sufficient in height'. This mitigation measure is presented in Reason & Wray (2025) by CIEEM as potential mitigation to provide commuting in the short- to medium-term while permanent plants mature. In addition, temporary screens will be required within the 2km Core Sustenance Zone for lesser horseshoe bat, as this species is particularly sensitive to the loss of linear habitats in the landscape as it relies on such to navigate from the roost to its preferred foraging area. Monitoring will be implemented, according to Collins (2023) to determine the value of such mitigation.
1222. As noted in Chapter 8 (Biodiversity) of the EIAR, treelines cannot be reinstated over the 20m wide Permanent Wayleave as their root system would impede upon the underlying pipeline infrastructure as per Uisce Éireann Tree Protection Guidance (IW-AMT-GL-026) (Uisce Éireann 2022). In line with this guidance, certain tree species (e.g. blackthorn, hawthorn, dog rose) can be planted directly over the pipeline due to their growth habit and root system, followed by those which can be planted at a distance of 1.5m away (e.g. holly, guelder rose, elder and hazel), 3m to 6m away (crab apple, wild cherry, rowan and spindle) and those which must be planted >6m from the pipeline (oak, willow, alder, birch), with woodland planting (groups of trees) at a distance >10m. As a result, the reinstatement of treelines over the 20m wide Permanent Wayleave will consist of a mosaic habitat like that of a mature hedgerow. These new linear habitat features will be sufficient to provide commuting within the landscape, post works, for the five bat species of concern. In addition, these plant species are predominantly native Irish species and therefore will provide suitable insect prey items for local bat populations.
1223. The provision of hedgerows post-works is important to ensure that linear habitat features are re-connected in the landscape. While trees provide taller vegetation and, when mature, may offer greater roosting opportunities, the provision of suitable commuting habitat is of greater importance for landscape connectivity particularly to ensure reinstatement of such habitat as quickly as possible post-works. The proposed bat box scheme will also provide roosting opportunities as part of bat mitigation measures.

10.4.12 Potential Impact of the Proposed Project on Marsh Fritillary

1224. The prescribed body submission from the NPWS raised specific issues relating to the potential impact of the Proposed Project on marsh fritillary:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1225. This prescribed body submission stated that there are concerns about the vulnerable marsh fritillary, whose survival depends on a network of interconnected habitats due to its metapopulation structure. The Proposed Project is expected to cause both temporary and permanent habitat loss, leading to fragmentation that could disrupt this network and threaten local populations, especially given the species' limited dispersal range. It also notes a lack of assessment of the wider habitat availability and insufficient consideration of environmental changes affecting the species. Additionally, the proposed mitigation measure of translocating larval webs lacks detail and supporting evidence, prompting recommendations for further study and more robust planning.

10.4.12.1 Applicant's Response

1226. The Applicant acknowledges the ecological sensitivity of marsh fritillary, including its reliance on a metapopulation structure and the importance of habitat connectivity. In response to this, a robust, staged survey approach was undertaken to inform the assessment reported in the EIAR Chapter 8 (Biodiversity). The study area was initially surveyed to identify habitats with potential to support the species, with particular focus on the presence of its larval foodplant, devil's-bit scabious. Where suitable habitat was identified, targeted surveys for larval webs were completed in accordance with best practice guidance. This approach ensured a comprehensive evaluation of both habitat suitability and species presence.

1227. Survey findings were used to inform an iterative route selection process, resulting in the avoidance, where possible, of areas supporting suitable marsh fritillary habitat. Notably, no areas subject to permanent habitat loss were identified as suitable for the species. Where avoidance was not feasible, mitigation measures have been incorporated to minimise impacts. In particular, areas supporting devil's-bit scabious will be retained in situ where practicable, and protective fencing will be installed prior to construction to prevent damage. These measures significantly reduce the risk of direct habitat loss within the Proposed Project footprint.

1228. In relation to Construction Phase impacts, the works will be implemented on a phased basis. Although the overall construction programme spans approximately three years, individual sections will be completed in shorter durations, typically within a single year, and land will generally be affected for no more than 18 to 24 months. As such, habitat fragmentation effects are temporary and spatially limited.

1229. With regard to concerns about habitat fragmentation and limited dispersal ability, the assessment has considered the wider habitat mosaic within and surrounding the Proposed Project. Marsh fritillary populations occur as a series of subpopulations, the location of which within a site may vary from year to year, reflecting their metapopulation dynamics. They are known to move opportunistically throughout the landscape, utilising suitable habitat patches (Irish Peatland Conservation Council, n.d.). While temporary habitat loss will occur, it represents a small proportion of the available suitable habitat. Habitat connectivity will be maintained through the retention of habitats, where possible, in particular along the boundary of the Proposed Project, as well as through habitat reinstatement using locally sourced native species appropriate to the area and habitat type and/or a mix of age classes (i.e. feathered whips and advanced nursery stock). On this basis, the integrity of the local marsh fritillary metapopulation would not be significantly affected.

1230. In response to concerns regarding mitigation detail, Chapter 8 (Biodiversity) of the EIAR sets out a clear commitment to habitat protection, reinstatement, and monitoring. Translocation, if required, would be developed in line with best practice and informed by pre-construction surveys to ensure its appropriateness and effectiveness.

10.4.13 Potential Impact of the Proposed Project on Hen Harrier

1231. The prescribed body submission from the NPWS raised specific issues relating to the potential impact of the Proposed Project on hen harrier:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1232. This prescribed body submission stated that the assessment may underestimate potential impacts on hen harriers. Although no roosts were recorded within 500m and sightings were infrequent, the project will remove suitable heathland roosting habitat and may have overlooked a nearby winter roost within its zone of influence. Given the species' declining population, variable roosting behaviour, and sensitivity to disturbance, the conclusion of 'no significant effects' is questioned. The Department emphasises the need to properly evaluate the extent, quality, and function of affected habitat, consider cumulative impacts, and provide further information on winter roosts in the area before determining significance.

10.4.13.1 Applicant's Response

1233. A review of the planning documentation for the Ballina Wind Farm (ACP Ref: 323579) outlines that the winter roost referenced at the southern end of Esker Bog is transient in nature, with no clear evidence of consistent or habitual use. As also noted in the Department's submission, hen harriers are not strictly site-faithful and may use a range of roosting locations depending on a number of factors. Given this, and the extent of suitable alternative habitat available in the wider area, the importance of any single roost location in this context is considered to be limited.
1234. In terms of habitat within the Proposed Project footprint, most of the areas affected within and around Esker Bog consist of cutover peatland, recently re-wetted bog, and agricultural grassland. These habitats generally offer limited vegetation structure suitable for hen harrier roosting, meaning that the amount of suitable roosting habitat that will actually be lost or disturbed is low.
1235. Works in this area will generally take place during daylight hours (as set out in Table 5.7 of the EIAR), so any disturbance will largely occur outside of the main roosting period (i.e. dusk, dawn and hours of darkness). Where works do extend into twilight or darker hours, any disturbance is expected to be short-term and localised.
1236. Taking the transient nature of the nearby roost, the availability of alternative habitat, the limited suitability of the affected areas, and the short duration of works during darkness hours, it is considered that the original conclusion of no significant impact on wintering hen harrier remains appropriate.

10.4.14 Potential Impact of the Proposed Project on Molluscs

1237. The prescribed body submission from the NPWS raised specific issues relating to the potential impact of the Proposed Project on molluscs:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1238. This prescribed body submission stated that there are concerns about inadequate and outdated survey efforts for terrestrial molluscs, noting that sites with suitable habitat but no recorded species in 2020 were not re-surveyed despite the possibility of later colonization. It also points out that potential impacts of the proposed project on sensitive Vertigo species, particularly from changes in water quality such as pollution, sedimentation, and nutrient enrichment, have not been assessed, and recommends both repeat surveys and further analysis of direct and indirect effects on these species and their habitats.

10.4.14.1 Applicant's Response

1239. Habitat verification surveys were undertaken most recently in 2024, which found that the habitat conditions remained unchanged in these areas since the surveys undertaken in 2020. Nevertheless, repeat surveys for Vertigo will be undertaken in 2026 in these areas of suitable habitat.
1240. In the event that Vertigo species are recorded, buffer exclusion zones will be established, where feasible. Where this is not feasible, any snails found will be translocated to an alternative location with similar habitat outside of the working area, under licence from the NPWS. Suitable habitat for Vertigo will be maintained or restored to pre-existing water levels by preventing drainage and reinstating natural flow paths post-construction.

10.4.15 Determining Ecological Significant Effects

1241. The prescribed body submission from the NPWS raised specific issues relating to the determination of significant effects in the ecological assessment:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1242. This prescribed body submission stated that, in relation to the discounting of significant effects on local mammal populations and the conclusion that the removal of 40.1km of treelines, 46km of hedgerows and 16ha of woodland habitats is only significant at the Local Geographic Scale, it is unclear how these conclusions were reached as little explanation or justification is provided. The submission continued that, it is recognised that planting is proposed to replace some of this loss, however it will be a number of years before the proposed planting will become established enough to replace what has been lost. The submission further stated that there will also still be a residual and permanent loss of hedgerows, treelines and woodland habitats as a result of the Proposed Project, resulting in a net loss of habitat, and this does not appear to have been considered sufficiently for both habitats and species, where a precautionary approach should be followed.

10.4.15.1 Applicant's Response

1243. The submission's concern about the scale of vegetation removal and the potential implications for local mammal populations is noted. However, the characterisation of effects and the conclusions reached in Chapter 8 (Biodiversity) of the EIAR are based on the duration, extent, and reversibility of impacts, as well as the incorporation of embedded and additional mitigation and enhancement measures.
1244. With respect to the Construction Phase, works will be undertaken on phased basis. While the overall programme extends to approximately three years, individual sections will be constructed over substantially shorter periods, typically within a single construction season, with any given land parcel generally subject to disturbance for no more than 18 to 24 months. Consequently, the potential for habitat fragmentation is temporary, localised, and reversible, rather than sustained across the full Proposed Project footprint for the duration of the programme.

1245. In terms of permanent habitat loss, it is acknowledged that removal of sections of hedgerows, treelines, and woodland will occur. However, the assessment of significance has taken into account both the baseline ecological context, where the habitats affected are common and widespread at a local and regional scale, and the comprehensive suite of mitigation and enhancement measures that form an integral part of the Proposed Project. These measures go beyond reinstatement and include the creation of woodland, scrub, hedgerow, and species-rich grassland habitats across multiple project elements (including the RWI&PS, WTP, BPT, BPS, FCV and TPR sites), as well as native screen planting and mosaic planting (in accordance with Uisce Éireann’s Tree Protection Guidance).
1246. Importantly, where hedgerows and treelines are to be reinstated, planting will incorporate a mix of age classes, including feathered whips and more advanced nursery stock. This approach is specifically designed to establish structural diversity at the outset, thereby accelerating functional habitat development and reducing the temporal gap typically associated with new planting. While it is accepted that newly established habitats require time to fully mature, the combination of advanced planting stock and habitat design principles ensures that ecological functionality (such as shelter, foraging opportunities, and connectivity) is reinstated at an early stage.
1247. Chapter 8 (Biodiversity) of the EIAR also recognises that a degree of residual and permanent habitat loss will remain. This has been explicitly considered in the assessment, and the conclusion that effects are significant at the local geographic scale reflects the balance between this residual loss and the scale, quality, and distribution of both existing habitats in the receiving environment and the proposed habitat creation measures. In this context, the assessment has applied a proportionate and evidence-based approach, consistent with relevant guidance, rather than discounting effects.
1248. Overall, when considered in terms of the temporary and localised nature of construction impacts, the relatively common status of the habitats affected, and the extensive, strategically designed mitigation and enhancement measures, the conclusions of the EIAR regarding the level and geographic scale of effects on habitats and associated mammal populations are considered robust and appropriately justified.

10.4.16 Proposed Abstraction and Treatment

1249. The prescribed body submission from the NPWS raised specific issues relating to ecological impacts associated with the proposed abstraction:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1250. This prescribed body submission stated that water will be abstracted within the Lower River Shannon SAC and the existing access roads cross the Kilmastulla River part of the above SAC at Knockadromin and at Greenhills and Lackanavea townlands, with the new access road crossing a watercourse approximately 50m upstream of the SAC at Greenhills. The submission continued that the proposed WTP is also hydrologically within the catchment of the Kilmastulla River part of the SAC.
1251. The submission further stated that the proposed construction of the abstraction infrastructure in, and adjacent to, Parteen Basin, is within, and adjacent to, a water-body used by wintering birds which disperse from Lough Derg (Shannon) Special Protection Area (SPA no. 4058), especially during periods of high winds on the lake.

10.4.16.1 Applicant’s Response

1252. As outlined in Section 3.2 of the NIS, the Proposed Project overlaps with a single European site, the Lower River Shannon SAC. This overlap occurs at specific locations: at the RWI&PS on the eastern

shore of Parteen Basin, where the 38 kV Uprate Works cross the Lower River Shannon, and where two underground cable ducts installed along the R494 from Birdhill to the entrance of the RWI&PS access road (to facilitate power supply to the RWI&PS) cross the Kilmastulla River (WCX077), as illustrated in NIS Figures 3.2 and 3.3. In addition, a trenchless crossing of the Kilmastulla River is proposed for the power supply to the WTP, using horizontal directional drilling at WCX001 (refer to Section 3.4.1.3 of the NIS). Although the boundary of the Proposed Project overlaps with the Lower River Shannon SAC at this location, no works will take place within the SAC. The Proposed Project in the context of European sites is shown in NIS Figure 3.1.

1253. Significant efforts have been undertaken during the design process to avoid impacts on European sites, and as a result, the pipeline route has been selected to avoid direct impacts on any European site.
1254. Potential impacts, including habitat degradation associated with abstraction from Parteen Basin (within the Lower River Shannon SAC), as well as impacts arising from crossings of watercourses hydrologically connected to the SAC, are assessed in Section 7.1 of the NIS. Design requirements and mitigation measures to avoid or minimise the potential for adverse effects on the integrity of the Lower River Shannon SAC are set out in Section 7.1.4.
1255. Potential impacts on wintering bird species associated with the Lough Derg (Shannon) SPA, in the context of the proposed abstraction from Parteen Basin, are assessed in Section 7.12 of the NIS. The corresponding design requirements and mitigation measures to avoid or minimise adverse effects on the integrity of this European site are provided in Section 7.12.4.

10.4.17 Proposed New Water Treatment Plant Access Road

1256. The prescribed body submission from the NPWS raised specific issues relating to the proposed new WTP access road crossing near the Kilmastulla River and the decommissioning of the disused petrol station:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1257. This prescribed body submission stated that there are inconsistencies and ambiguities in the documentation regarding a proposed new bridge crossing of the Roran watercourse, including a lack of cross-referenced maps and conflicting naming (with it incorrectly referred to as the Knockadromin Stream in the NIS). It assumes the crossing is located near the Kilmastulla River SAC at Greenhills, but notes unclear mapping and site drainage references. The submission also raises concerns about potential significant adverse effects due to a nearby disused petrol station, highlighting that while no hydrocarbon contamination was detected in soil samples, the proposed mitigation measures do not adequately address the risk of oily sludge in underground tanks. It emphasizes that leaving the tanks in place could pose ongoing environmental risks and recommends proper decommissioning of this potential pollution source rather than simply infilling it.

10.4.17.1 Applicant's Response

1258. The Applicant confirms that the watercourse referenced in both Chapter 9 (Water) of the EIAR and in the NIS is the Knockadromin Stream (EPA name), located at crossing WCX002 (European Code: IE_SH_25K041000). The Applicant further confirms that the WFD designation for this watercourse is Kilmastulla_050, and that the location of crossing WCX002 is correctly shown in Figure 3.2 of the NIS. The reference to 'Roran' in Chapter 9 (Water) was derived from EPA map data; however, it pertains to the same watercourse and location as the Knockadromin Stream.

1259. With regard to concerns about the potential for adverse effects arising from the nearby disused petrol station, particularly the risk of oil sludge within underground storage tanks, as identified in the EIAR, Chapter 10 (Soils, Geology and Hydrogeology), the proposed works include the cleaning and decommissioning of these tanks. This will involve the removal of any residual oil sludge, followed by backfilling with inert materials such as sand and cement or foam concrete. In accordance with standard best practice, affected areas of ground will be isolated and subjected to contamination testing in line with the Council Decision of 19 December 2002 (2003/33/EC), which establishes criteria and procedures for the acceptance of waste at landfill sites under the Landfill Directive 1999/31/EC (as amended). Pending the results of laboratory analysis, any contaminated soil identified will be excavated, isolated, and removed from the site by a suitably permitted waste contractor. Subsequent chemical testing will determine the appropriate classification and ensure disposal or treatment at an appropriately Permitted/Licensed Waste Facility.
1260. As per the conclusions of EIAR Chapter 9 – Water and Appendix A9.3 - Non-linear Principal Infrastructure and 38 kV Uprate Works, there would be no likely significant effect on the Kilmastulla_050 from the removal of the disused petro station, given the above mitigation as well as the general pollution prevention measures in the Surface Water Management Plan (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan).

10.4.18 Barriers to Connectivity: Salmon and Lamprey Species

1261. The prescribed body submission from the NPWS raised specific issues relating to barriers to connectivity for salmon and lamprey species:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1262. This prescribed body submission stated that the conservation objectives for salmon in the Lower River Shannon SAC aim to restore favourable conservation status, including full accessibility of river channels, though existing barriers such as the Ardnacrusha hydroelectric station and Parteen weir continue to significantly hinder upstream migration despite fish passes. Similarly, sea lamprey conservation targets seek to ensure most of the river length is accessible from the estuary. In light of ongoing efforts under the Shannon Connectivity Project to improve fish passage, the submission recommends consulting Inland Fisheries Ireland for expert advice on potential impacts on salmon, lamprey species, and overall connectivity within the SAC.

10.4.18.1 Applicant's Response

1263. Inland Fisheries Ireland has been consulted in relation to the Proposed Project, and their input has informed the assessment of potential impacts on salmon, lamprey species, and overall ecological connectivity within the Lower River Shannon SAC.
1264. While the submission references conservation objectives aimed at restoring favourable conservation status for the Lower River Shannon SAC, it is important to note that there is currently no agreed or formally defined set of ecological recovery objectives specific to the Lower River Shannon SAC. The establishment of such objectives is a matter for the relevant competent authorities and falls outside the remit of the Applicant or the Proposed Project. In the absence of a formally adopted framework, the assessment presented in Chapter 8 (Biodiversity) of the EIAR and the NIS has applied the best available scientific information and guidance, focusing on whether the Proposed Project would impede existing ecological functions or constrain the implementation of future measures aimed at improving fish passage, enhancing connectivity, or supporting the attainment of favourable conservation status for the qualifying interests within the SAC.

1265. The Shannon Connectivity Project, established under Ireland's River Basin Management Plan 2018–2021, has identified a coordinated programme of measures to address fish passage barriers at Ardnacrusha and Parteen. The CDM Smith Final Report (2021) and subsequent Roadmap of Actions (2022) set out key interventions, including new or improved fish passes, fish guidance systems for upstream and downstream migration, an Eflow study programme, and the preparation of a Lower Shannon Management Plan. A key component of these measures is the potential introduction of a variable Eflow regime at Parteen Weir to support fish migration. A sensitivity analysis to the proposed Eflow regime at Parteen Weir (CDM Smith 2021), in which the existing 10m³/s compensation and fish pass flow is replaced by a varying compensation flow with the inclusion of freshets (increased flows during a flood event or a release of additional water) to assist migratory fish up the Old River Shannon and into Parteen Basin, was undertaken. This found that similar water level differences were simulated during the droughts when the proposed abstractions were included in the Eflow scenario as were predicted for the case for a constant compensation flow. However, this assumes that freshets would not be released during flood (i.e. when spilling) or drought conditions. The basis of this drought period assumption is that if the Eflow is an attempt to mimic the natural flow regime then artificially releasing standard freshets over this period would be introducing a non-natural characteristic to the flow regime. In summary, the hydrological model found that the released flows to the Old River Shannon during periods of spill are virtually the same with or without the proposed Eflows regime in place. However, outside of flood and drought periods more water is released, together with flow variability, by the Eflows regime compared to the use of a uniform 10m³/s compensation flow. Full details of the hydrological model Eflows sensitivity analysis are provided in the EIAR Appendix A9.1 Annex A (Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels). Reinstatement of more natural water regimes would involve partly storing all flood inflows and partly spilling to the Lower River Shannon in a naturally variable freshet time profile. Having due regard to the River Shannon statutory compensation flow obligations, ESB's current practice is that late spring water level is kept near the top of the Normal Operating Band. At winter flood times, and when autumn recovery has started, greater sharing of inflows between storage and the Old River Shannon reduces water available for use in hydropower, reducing revenue to ESB. The Proposed Project would be abstracting up to a maximum of 300Mld or 3.47m³/s and while there may be technicalities for ESB in adjusting gates to provide flow variability, the Proposed Project would not impede a flow-sharing decision between hydropower and statutory compensation flow at appropriate times of the year and is not an impediment to any Parteen Weir gate adjustments to implement it.
1266. The assessment demonstrates that the Proposed Project would not prevent or impede the delivery of an Eflow regime or associated fish passage improvements. While implementation of more naturalised flow regimes may require operational adjustments by others, including balancing hydropower generation and statutory compensation flows, the Proposed Project (with a maximum abstraction of 300Mld) would not restrict such operations. In particular, it would not constrain the operation of Parteen Weir gates, nor limit the ability of third parties to implement flow-sharing arrangements or future measures arising from the Shannon Connectivity Project.⁸
1267. In terms of the existing baseline, there is currently there is a 'Borland-McDonald' fish lock at Ardnacrusha station and a 'pool-traverse fish pass' at Parteen regulating weir. These both accommodate the upstream and downstream movement of fish. Fish migration may be hindered or delayed due to the existence of hydro stations and their associated fish passes because the species of fish monitored and structural design of the fishways have strong implications for both attraction and passage performance (e.g. Noonan *et al.* 2011, Brunt *et al.* 2012). The Proposed Project would not alter the existing scenario and there would be no additional barrier effects to fish in the Lower River Shannon SAC as a result of the Proposed Project. The Proposed Project would not change the generator discharge rate at the Ardnacrusha Generating Station; however, the duration of discharges

⁸ This is referred to as a more naturalised flow regime in Chapter 11 Water (Hydrological Modelling and Water Levels).

would be reduced by approximately 2% on average. This would result in lower volumes of flow through the Ardnacrusha Generating Station through an unchanged generator flow rate operating for a shorter period of time, with marginally longer periods of no flow through Ardnacrusha. Smolts migrating downstream would likely marginally benefit from this scenario as smolts are attracted to higher flows. During reduced periods of hydropower generation, they would therefore be encouraged to migrate downstream over Parteen Weir, instead of through the turbines at Ardnacrusha. Furthermore, within operating guidelines which seek to increase late spring water levels to the upper limit of the Normal Operating Band, the Proposed Project would not impede the ability to adjust appropriate hydropower flows, with increased flow to the Old River Shannon during periods of smolt migration (April).

1268. Accordingly, it is concluded that the Proposed Project would not create additional barriers to fish migration, nor would it constrain the implementation of planned or potential future measures to improve connectivity, including Eflow releases and fish passage enhancements at Parteen Weir and Ardnacrusha.

10.4.19 Potential Disturbance Effect on Wintering Waterfowl in Parteen Basin

1269. The prescribed body submission from the NPWS raised specific issues relating to potential disturbance effects on wintering waterfowl in Parteen Basin, including from Lough Derg SPA:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1270. This prescribed body submission stated that the EIAR identifies potentially significant construction impacts on 12 bird species in Parteen Basin, including key species linked to the conservation objectives of Lough Derg SPA (cormorant, goldeneye, and tufted duck). While mitigation proposes carrying out main construction works outside the winter period, the submission recommends clearer wording and stronger enforcement. Specifically, it suggests that ‘main construction works within Parteen Basin water-body, piling within 100m of Parteen Basin, and any construction works which generate sufficient noise to flight-disturb wintering waterbirds on Parteen Basin at a distance of 150m, will be carried out outside of the period 15 September to 15 March’.

10.4.19.1 Applicant's Response

1271. It should be noted that Table 8.94 in Chapter 8 (Biodiversity) of the EIAR identifies a seasonal restriction period of October to March for the RWI site at Parteen Basin. This seasonal window is based on site-specific ornithological surveys undertaken in the area, together with an established definition of the wintering waterbird seasons as set out in the methodologies of Gilbert *et al.* (1998).
1272. The suggested period of 15 September to 15 March appears to reflect the broader survey window used for wintering waterbird monitoring (e.g. Irish Wetland Bird Survey), which can capture early arrivals and/or late departures and is not specifically designed to define impact sensitive periods for assessment purposes. The October to March restriction applied in Chapter 8 (Biodiversity) of the EIAR reflects a stronger core wintering period, based on a combination of published guidance and bird activity recorded during the survey period.
1273. It is also noted that works undertaken within the RWI&PS site are located within or immediately adjacent to Parteen Basin, and at distances of less than the 100m and 150m buffers referenced in the submission. As such, the seasonal restrictions that apply to the RWI&PS site are considered to extend across the entirety of Parteen Basin, given the functional connectivity and proximity of works to supporting wintering waterbird habitat.

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1274. The existing seasonal restriction is considered appropriate, and no amendment is considered necessary.

10.4.20 Community Benefits Scheme and Biodiversity Conservation

1275. The prescribed body submission from An Taisce recommended that the potential for the Community Benefit Scheme to assist in funding ecology programmes and initiatives be considered:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce

1276. This prescribed body submission stated that An Taisce note that the Applicant seeks to align the proposed Community Benefit Scheme with policies to promote biodiversity conservation, and therefore provided the following recommendations:

- Remediation of problematic fish passes which act as barriers to upstream fish migration, causing them to experience difficulty reaching spawning grounds and other important habitats, should be considered. The submission continued that the potential for integration of such a pilot project, and the recommendations of the CDM Smith (2021) report, with the Community Benefit Scheme attached to the Proposed Project, should be investigated;
- Possibility of utilising funds from the Community Benefit Scheme for alterations to the Parteen Weir which impedes an increased flow regime should be considered;
- EPA Report on 'Investigating the Likelihood of a Lough Neagh Bloom Scenario Happening in Ireland', Lough Derg contains 14 invasive species, including zebra mussel. The submission therefore recommended that the potential for the Community Benefit Scheme to assist in funding of targeted invasive species eradication programmes should be closely considered; and
- Eutrophication impacts in Lough Derg have been reported by local community groups, and therefore, the potential for the Community Benefit Scheme to contribute to eutrophication remediation actions should also be explored.

10.4.20.1 Applicant's Response

1277. The Applicant acknowledges the recommendations made by An Taisce in relation to the proposed Community Benefit Scheme and its alignment with biodiversity conservation objectives. These matters will be taken into consideration by the Applicant in the further refinement of the Community Benefit Scheme, having regard to the overall scope, governance arrangements, and eligibility criteria for Community Benefit Scheme funding, as well as applicable environmental, regulatory, and operational constraints.

1278. The Applicant anticipate that fish passage improvement works at the Parteen weir could be of a significant quantum in scope and cost so UE suggest a dedicated funding stream from the project sponsoring agencies should be considered as the Community Benefit Scheme fund may be insufficient to support such works.

1279. The potential for the Community Benefit Scheme to assist in funding of targeted invasive species eradication programmes is noted and would align with the proposed Community Benefit Scheme Environmental funding category so UE would be of the view that Local authorities administering the fund on UE's behalf would look favourably on such applications when carrying out their evaluations.

10.4.21 Avoiding Impacts to Wetlands and Bogs

1280. The prescribed body submission from An Taisce raised specific issues in relation to avoiding impacts to wetlands and bogs:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce

1281. This prescribed body submission listed wetland / bogland sites within the Zol of the Proposed Project and stated that should be cross-referenced with sites assessed within the Applicant's EIAR and NIS, given that sites of potential ecological significance identified within Wetlands Survey Ireland mapping may not be included. The submission continued that cutover raised bog is a restorable habitat type under the Nature Restoration Law (NRL) and construction phase activity for underground pipeline and operational maintenance activity should be planned in accordance with this to ensure that works minimise further degradation as much as possible. The submission further stated that it should be ensured that pipeline installation and ancillary infrastructure development does not impede the ability of bog areas to be restored within community projects and wider NRL implementation, and that impacts to low-lying and flat bog and wetland sites require particular consideration given that topographical considerations were a prominent feature of route design to maximise flow and energy efficiency.

10.4.21.1 Applicant's Response

1282. In response to the prescribed body submission, the Applicant acknowledges the ecological importance and restoration potential of cutover raised bogs, including their potential to qualify as 'degraded raised bogs still capable of natural regeneration (7120)' under the EU Habitats Directive, and their relevance within the framework of the EU Nature Restoration Law. The Applicant further recognises the established evidence base, including Renou-Wilson *et al.* (2019), regarding the critical role of cutover bogs in carbon storage and the importance of rewetting and hydrological restoration.

1283. A comprehensive programme of desktop studies and ecological field surveys (between 2016 and 2025) was undertaken to identify and characterise wetland and bogland habitats within the Zol of the Proposed Project. These surveys, as detailed in Chapter 8 (Biodiversity) of the EIAR and supporting appendices (including Appendix A8.4: Target Habitat Surveys Report), specifically targeted habitats of potential conservation significance, including cutover bogs with restoration potential. The Zol was defined to ensure that all habitats with a source-pathway-receptor linkage for potential impacts (direct or indirect), including hydrological, connectivity were assessed. The wetland/bogland sites referenced in the submission have either been assessed in Chapter 8 (Biodiversity) of the EIAR or are beyond the Zol and are hydrologically disconnected from the Proposed Project (e.g. Gortybrigane Bog (MIW_TI241) is located greater than 80m away from the proposed 38 kV Uprate, separated by the R494 road, and beyond the Zol).

1284. As noted in Table 8.28 of Chapter 8 (Biodiversity) of the EIAR and Appendix A8.4 (Target Habitat Surveys Report), the findings of the targeted habitat surveys confirm that all raised bog habitats intersected or adjacent to the Proposed Project footprint have been subject to historical drainage and/or peat extraction and do not currently meet the Annex I criteria for 'active raised bogs (7110)' or 'degraded raised bogs still capable of natural regeneration (7120)'. Notwithstanding this classification, the Applicant recognises that certain areas retain some degree of restoration potential, contingent on landscape-scale hydrological interventions beyond the scope of the Proposed Project. For example, the area at Timahoe East (Chainage TWD–21500) would only achieve Annex I (7120) status in the context of comprehensive hydrological restoration of the wider bog complex.

1285. In line with the mitigation hierarchy, the design and routing of the Proposed Project (as outlined in EIAR Chapter 3: Consideration of Reasonable Alternatives) has sought to avoid Annex I habitats and areas of highest ecological sensitivity wherever practicable. All Annex I habitats, identified through the desktop study analysis or recorded during habitat surveys, were avoided during the route selection process. Where avoidance of wetland/bogland sites was not possible, embedded mitigation measures have

been developed to ensure that construction and operational activities do not result in significant residual effects on the ecological integrity or restoration potential of bog habitats.

1286. Critically, the construction methodology for peatland areas (Appendix A5.3: Methods of Working in Peat) has been specifically designed to minimise disturbance to peat structure and hydrology. Measures include careful excavation, segregation, and reinstatement of peat in its original stratigraphy, thereby maintaining the functional characteristics of the peat body insofar as practicable. In respect of habitat reinstatement, where habitats cannot be restored on a strictly like-for-like basis due to their complex ecological processes (e.g. non-Annex I raised bog habitats), the Applicant proposes reinstatement to the closest ecologically appropriate habitat type using best practice techniques, including reuse of excavated peat, preservation of the seedbank, and targeted re-vegetation using locally appropriate species. These measures are designed to support the recovery of semi-natural vegetation and maintain ecological functionality.
1287. Furthermore, the Proposed Project has been designed such that it will not impede future peatland restoration initiatives, including rewetting, drain blocking, or other hydrological measures that may be implemented under national or EU-led programmes. The pipeline infrastructure will be installed below ground and with the design measures outlined in the EIAR, will not act as a drainage pathway to surface or subsurface water movement when reinstatement is complete. No permanent drainage or land take is proposed that would constrain the implementation of restoration measures at a site or landscape scale.
1288. In summary, the Applicant has robustly characterised wetland/bogland habitats within the Zol, applied a precautionary and avoidance-led design approach, and embedded construction and reinstatement methodologies that safeguard both the current ecological value and the future restoration potential of these habitats.

10.4.22 Assessment of County Wetland Sites in Kildare and Compliance with the Kildare County Development Plan Policies and Objectives

1289. The prescribed body submission from Kildare County Council raised specific issues in relation to county wetland sites:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

1290. This prescribed body submission stated that the EIAR does not include an assessment (site-specific evaluation, hydrological assessment or ecological significance assessment) of county wetland sites in Kildare, despite the Proposed Project traversing or lying within the Zol of numerous wetlands identified in the County Kildare Wetlands Survey 2012-2014. The submission continues that this omission is significant given the statutory protection afforded to wetland sites under the Kildare County Development Plan policies and objectives (BI P1, BI P8, BI O1, BI O7, BI O49, BI O50 and BI O51) and states that the EIAR does not comply with the plan requirements.

10.4.22.1 Applicant's Response

1291. With regard to the concerns raised about the assessment of County Wetland Sites, additional information is provided the response in Section 10.4.21.1.
1292. The County Kildare Wetlands Survey (2012–2014), undertaken by Wetland Surveys Ireland, was used to update site descriptions, habitat information, and photographs within the Wetland Map of Ireland. This database was reviewed as part of the desktop study for the Proposed Project. In addition, field surveys were undertaken within the Zol of the Proposed Project to verify habitat conditions on the

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ground, including the presence, extent, and ecological characteristics of wetland habitats (refer to Appendix A8.4: Target Habitat Surveys Report and Appendix A8.5: Rare Plants Survey Report). These surveys were used to inform the baseline ecological assessment and impact evaluation presented in Chapter 8 (Biodiversity) of the EIAR.

1293. The EIAR therefore does include consideration of wetlands within the Zol, drawing on both published datasets and site-specific survey data. The assessment focuses on habitats and ecological receptors that could be impacted by the Proposed Project, rather than reproducing the full inventory of county-level wetland sites. This approach is consistent with standard EIAR practice, which emphasises likely significant effects and relevant receptors.
1294. With specific regard to the Kildare County Development Plan 2023–2029 policies and objectives cited (including BI P8, BI 049, BI 050 and BI 051), the EIAR has had regard to the requirement to protect and conserve wetlands and their associated biodiversity and ecosystem services. The assessment methodology applied is consistent with these policy provisions, in that it:
- Identifies wetlands and wetland-related habitats within the Zol using both desk study sources and field survey information
 - Evaluates their ecological significance in accordance with best practice ecological evaluation criteria
 - Considers potential direct, indirect and cumulative effects, including those arising from hydrological connectivity
 - Incorporates mitigation measures designed to avoid impacts on higher-value habitats, maintain existing hydrological regimes, and protect water quality.
1295. Where wetlands are hydrologically connected to the Proposed Project, the EIAR includes consideration of potential changes to surface water and groundwater interactions, supported by the Proposed Project's hydrological and hydrogeological assessments. Embedded and additional mitigation measures have been included to ensure that there is no residual effect on the integrity or functioning of these habitats.
1296. On this basis, the EIAR demonstrates alignment with the intent of the Development Plan policies by ensuring that wetlands within the Zol are appropriately identified, assessed, and protected through design and mitigation. Further detail on the assessment of wetland habitats within the Zol of the Proposed Project is provided in Section 8.5.2 of the EIAR.

10.4.23 Reliance on Outdated Ecological Survey Data

1297. The following prescribed body submissions from local authorities raised specific issues in relation to the use of outdated ecological survey data:

Unique ID	Name of Prescribed Body
WSP_SUB_110	Clare County Council
WSP_SUB_111	Kildare County Council

1298. The prescribed body submission from Clare County Council stated that there is inadequate baseline ecological data, and that assessments must be based on sufficient and reliable baseline data, and where surveys are incomplete or outdated, decision makers cannot properly assess impacts.
1299. The prescribed body submission from Kildare County Council stated that numerous ecological surveys (including marsh fritillary, freshwater mollusc and other taxa) relied upon in the EIAR are significantly out of date and do not comply with the latest CIEEM Guidelines for Ecological Impact Assessment. The

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submission continued that the outdated baseline data do not meet best practice and cannot reliably inform impact prediction and that ecological baselines should reflect current conditions, especially for mobile or rapidly changing species and habitats. The submission further stated that the EIAR does not provide updated surveys nor justification for the continued reliance on surveys up to 10 years old in a 2026 determination context.

10.4.23.1 Applicant's Response

1300. Field surveys were undertaken for the Proposed Project and previous iterations of the project between 2016 and 2025, as detailed in Section 8.2.5 of the EIAR. As noted in Section 8.1 of the EIAR, some surveys were not required to be repeated due to the data remaining valid upon verification, or where surveys were replaced by an alternative survey type. The surveys undertaken are considered to be sufficiently robust and current to accurately inform the assessment. Additional information in response to similar submissions is provided in Section 10.3.7.1 and Section 10.4.14.1.

10.4.24 Biodiversity Net Gain

1301. The prescribed body submission from Kildare County Council raised specific issues in relation to biodiversity net gain:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

1302. This prescribed body submission stated that there is no consideration of biodiversity net gain in the planning application and this is inconsistent with policies in the Kildare County Development Plan (i.e. BI P1 and BI O7). The submission continued that, given the scale and linear nature of the Proposed Project, opportunities exist for biodiversity enhancement such as pollinator planting, wetland enhancement, hedgerow rejuvenation / restoration and targeted species support actions, but these are not discussed in the planning application. This prescribed body submission stated that biodiversity integration into the design for the Proposed Project is limited and poorly justified.

10.4.24.1 Applicant's Response

1303. In Ireland, there is currently no statutory requirement to deliver biodiversity net gain as part of the planning process. While policies in the Kildare County Development Plan encourage biodiversity enhancement and nature-positive measures, these are policy objectives rather than binding legal requirements and the provision of Biodiversity Net Gain is not a statutory objective for development plans.
1304. Notwithstanding this, the design of the Proposed Project has been developed in accordance with the mitigation hierarchy of avoidance, minimisation, and restoration, with best practice measures embedded throughout. Sensitive ecological areas have been avoided where feasible, and where impacts cannot be fully avoided, reinstatement will be undertaken on a 'like-for-like' basis following construction, including the restoration of soils, drainage, fencing and vegetation consistent with pre-commencement conditions.
1305. Topsoil and subsoil management and reinstatement planting are incorporated into the design, with replanting to be informed by an ECoW and guided by the All-Ireland Pollinator Plan (2021–2025) and the Pollinator Friendly Planting Code, ensuring the use of appropriate locally sourced native species consistent with existing genetic stock.
1306. Furthermore, a range of habitat reinstatement and enhancement measures are also included across project elements, including woodland, scrub, hedgerow and species-rich grassland creation and

retention at the RWI&PS, WTP, BPT, BPS, FCV and TPR sites, alongside native screen planting, mosaic planting, and targeted hedgerow planting in accordance with Uisce Éireann Biodiversity and Tree Protection Guidance. These measures will be subject to ecological oversight and monitoring during implementation.

10.4.25 Planning Conditions Specific to the Kildare Country Council Area

1307. The prescribed body submission from Kildare County Council recommended a number of biodiversity-related conditions for proposed works within Kildare County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

1308. This prescribed body submission requested the following biodiversity-related conditions be attached to any grant of planning for the Proposed Project:

- Prior to construction commencing, the Applicant will submit a Detailed Mitigation Plan for Kildare County Wetland Sites, for the written agreement of the Planning Authority;
- Prior to construction commencing, the Applicant will submit a Biodiversity Management Plan that provides for integration of biodiversity and biodiversity net gain, for the written agreement of the Planning Authority;
- Prior to construction commencing, the existing surveys that are over two years old shall be used for information purposes to inform updated surveys;
- Monitoring of the Construction Phase shall be carried out by a suitably qualified and competent Ecological Clerk of Works and details of the name and contact for the Ecological Clerk of Works shall be available at all times to the Planning Authority;
- The Ecological Clerk of Works shall prepare and submit a Completion Report demonstrating compliance with all mitigation measures in the EIAR and the NIS in the planning application. This shall be submitted within 6 weeks of completion of the works;
- Monitoring of the Operation Phase shall be carried out by a suitably qualified and competent person to ensure all mitigation measures in the EIAR and the NIS in the planning application are fully implemented. This dedicated person shall interface with the Planning Authority and details of the name and contact for the Ecological Clerk of Works shall be available at all times to the Planning Authority; and
- All hedgerows and treelines that are reinstated shall be monitored for five years following construction and supplemented, where required. All hedgerow and treeline species shall be native species only and not invasive (such as laurel of any kind).

10.4.25.1 Applicant's Response

1309. Repeat ecological surveys will be undertaken in 2026, where appropriate, to ensure that baseline data remains current and valid. Pre-construction surveys would also be carried out, having regard to the approach outlined in Section 8.8 of the EIAR.

1310. As noted in Section 8.8 of the EIAR, all mitigation measures will be implemented by the appointed Contractor under the supervision of an ECoW, to prevent or reduce the potential impacts identified in Chapter 8 (Biodiversity) of the EIAR.

1311. As noted in Section 8.10.2.1 of the EIAR, in relation to habitat reinstatement, all KER habitats reinstated post the Construction Phase will be monitored to determine the overall success of the reinstatement process. The post-construction monitoring programme will require annual monitoring, commencing on

the year of habitat reinstatement, for a minimum period of five years to confirm viable growth is occurring, and undertake remediation works if deemed necessary. The success of habitat reinstatement will be reviewed by a suitably qualified and experienced ECoW at the end of that period to determine whether the monitoring period needs to be extended further, if for example it is viewed that the habitat has not stabilised or become fully established by that time. Any extension to the monitoring period will need to consider whether on-going monitoring should be at annual or longer intervals, for example, at +3 years post-creation or +6 years post-creation.

1312. As per paragraph 941 in EIAR Chapter 8 – Biodiversity, *'All planted vegetation will be a mix of locally sourced native species that are known to occur in the general area and for the specific habitat type'*.
1313. It is anticipated that a record of compliance with ecological mitigation measures would be compiled following completion of the Construction Phase. This would document the extent to which the measures outlined in the EIAR and NIS have been implemented.
1314. Having regard to the above, it is considered that the matters raised by Kildare County Council are already comprehensively addressed through the embedded design, mitigation, and monitoring commitments set out within the EIAR and NIS. The preparation of additional standalone plans or the imposition of overlapping monitoring and reporting requirements, as suggested, would therefore duplicate measures already integral to the Proposed Project. On this basis, the attachment of such conditions is not considered necessary or proportionate. Should the competent authority consider that any further conditions are required, the scope and wording of same would be a matter for determination by An Coimisiún Pleanála.

10.4.26 Potential Impact on Restoring Fish Passage

1315. The prescribed body submission from Limerick County Council raised concerns about the ability to restore fish passage:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council

1316. This prescribed body submission stated that the Government's own CDM Smith report states that to restore fish passage baseflows in the old River Shannon need to rise from 10m³/s to 17m³/s; weekly migration-supporting spills of 21-31m³/s are required from March to September, and eel migration requires bi-weekly night-time spills of 65m³/s in autumn. The submission continued that there is an assumption that maintaining 10m³/s down the Old River Shannon is sufficient but that this was set almost a century ago and it is the legal minimum not the flow required to comply with the eel regulation. The submission also raises concerns that the planning application does not address the risk that the Proposed Project could delay or obstruct the fish passage works.

10.4.26.1 Applicant's Response

1317. In relation to the concerns raised regarding fish passage and migration flows in the Old River Shannon, a detailed response on these matters is provided in Section 10.3.5.1, Section 10.3.8.1 and Section 10.4.18.1, and in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

10.4.27 Potential Impact of the Proposed Project on Fish

1318. The following prescribed body submissions from local authorities raised concerns about the potential cumulative impact of the Proposed Project on fish:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

1319. The prescribed body submission from Limerick County Council queried the cumulative impacts of the development and impact on migratory fish. The submission continued that salmon is already on the brink of extinction and our environmental heritage is at risk.
1320. The prescribed body submission from Tipperary County Council stated that the documentation does not capture a complete picture in terms of the unique aquatic ecology within the lake and downstream. The submission noted that the native fish are of heritage, scientific and cultural importance within Lough Derg, including distinct genetic groupings of trout, the Irish Pollan, and "landlocked lamprey", which are unique to the lake and form some of the most interesting and important biodiversity features associated with the lough.

10.4.27.1 Applicant's Response

1321. Likely significant effects of the Proposed Project cumulatively and in-combination with other plans and projects are assessed in EIAR Chapter 21 (Cumulative Effects) and Section 8 of the NIS.
1322. The issues raised by Tipperary County Council regarding the incomplete representation of aquatic ecology, particularly the status of native fish species in Lough Derg and downstream is noted. The ecological importance of species such as pollan and 'landlocked lamprey', is fully recognised.
1323. Available data indicate that pollan have been recorded downstream of Lough Derg, including at the Killaloe silver eel weir and within smolt traps. While this suggests potential seasonal downstream movement, it remains uncertain whether this reflects active migration behaviour or incidental movement. Historically, pollan were more frequently recorded as bycatch at the eel weir.
1324. Population estimates from IFI indicate a relatively small stock within Lough Derg, with 3,288 individuals recorded in 2016, of which 26.4% were juveniles. The population is largely concentrated in deeper southern waters, with a dominance of younger age classes. IFI has highlighted that a key knowledge gap remains around the identification of spawning locations and timing, which is critical for informed management.
1325. The conservation status of pollan in Lough Derg is currently classified as 'Unfavourable – Bad', reflecting concerns including limited population size, low juvenile representation, and external pressures such as habitat modification and the introduction of non-native species. Research (e.g. Rosell *et al.* 2004) has identified threats from species like roach and zebra mussels, while also noting that projected increases in water temperature may pose a significant long-term risk that could outweigh other management interventions.
1326. In contrast, no pollan were recorded in Parteen Basin during IFI surveys, despite its classification as having 'Good' ecological status. This absence is considered consistent with the artificial nature of Parteen Basin, which is unlikely to provide suitable habitat conditions for pollan.
1327. Importantly, it should be noted, no suitable habitat for pollan was recorded within the footprint of the Proposed Project. With regards to lamprey, a land-locked population of sea lamprey has been recorded in Lough Derg; however, no sea lamprey were caught during the 2016 IFI fish stock surveys of Lough Derg and Parteen Basin. No ammocoetes were recorded during the 2017 or 2019 aquatic survey of the RWI&PS site. Spawning has been recorded in the vicinity of Plassey on the Old River Shannon and is likely to occur at suitable habitats upstream as far as Parteen Weir and also on the River Mulkear.

Currently upstream migration of sea lamprey is impeded by Parteen Weir and the Ardnacrusha Dam. The Proposed Project would not alter the existing scenario and there would be no additional barrier effects within the Lower River Shannon SAC as a result of the Proposed Project.

1328. In relation to the concerns raised regarding the adequacy of the environmental assessment in relation to migratory and native fish populations, further information on these matters is provided in Section 10.3.5.1, Section 10.3.7.1, Section 10.3.8.1, Section 10.3.12.1, and Section 10.4.18.1.

10.4.28 Permanent Loss of Badger Setts

1329. The following prescribed body submissions raised concerns about the permanent loss of badger setts:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council
WSP_SUB_114	Tipperary County Council

1330. The prescribed body submission from Offaly County Council requested that ACP give due consideration in regard to the permanent loss of 2 (no) active main badger setts and localised displacement of badger population.

1331. The prescribed body submission from Tipperary County Council stated that the project will result in permanent loss of 33 known badger setts and may cause localised displacement of badger populations.

10.4.28.1 Applicant's Response

1332. The Applicant acknowledges that the Proposed Project will result in the permanent loss of 33 setts (18 active and 15 inactive) and the localised displacement of badgers; however, Section 8.8.2.3 of the EIAR sets out comprehensive mitigation in line with national guidance to minimise impacts.

1333. To protect badger setts not directly impacted by the Proposed Project, strict buffer zones (30m, extended to 50m for active setts during the breeding season) will be enforced, with additional restrictions on noise, night-time working, pile-driving, and chemical use. Construction practices will be carefully managed, supervised by an ECoW, and supported by fencing, monitoring, and clear communication to avoid accidental disturbance.

1334. Where direct impacts cannot be avoided, setts will be removed under controlled conditions. This will occur outside the breeding season (July to November) following regulated exclusion procedures to ensure no badgers remain. In cases where significant setts are lost and no natural alternatives exist, 24 artificial setts will be constructed in advance, monitored for uptake, and implemented in consultation with relevant authorities.

1335. Additional safeguards include careful siting of spoil, protection of foraging access, and post-construction habitat management to avoid further disturbance.

1336. Overall, while mitigation measures will substantially reduce risks to badgers, the Proposed Project will still result in a short-term, locally significant negative effect, including the permanent loss of setts and temporary displacement of the population.

10.4.29 Consideration of Invasive Species

1337. The prescribed body submission from Offaly County Council raised specific concerns about invasive species:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

1338. This prescribed body submission stated that the EIAR does not assess how the Proposed Project may influence the spread of invasive non-native species. The submission continued that, measures to be brought forward to prevent the spread of Invasive Non-Native Species should be fully considered as part of any decision on this application.

10.4.29.1 Applicant's Response

1339. Potential impacts in relation to the introduction or spread of INNS are considered in Section 8.5.4.1.4, Section 8.5.3.4, and Section 8.7.1.1.5 of the EIAR.

1340. Mitigation measures to control the introduction or spread of INNS are included in Section 8.8.2.1.3, Section 8.8.3.2 and Section 8.10.3.1 of the EIAR.

10.4.30 Planning Conditions Specific to the Offaly Country Council Area

1341. The prescribed body submission from Offaly County Council recommended a number of biodiversity-related conditions for proposed works within Offaly County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

1342. This prescribed body submission requested the following biodiversity-related conditions be attached to any grant of planning for the Proposed Project:

- Mitigation measures in regard to badger setts, bats and the spread of Invasive Non-Native Species are to be applied;
- The Applicant shall maintain/preserve any existing hedgerow / woodland / trees present within and / or adjacent to the site in accordance with Offaly County Council's, Development Plan 2021-2027

10.4.30.1 Applicant's Response

1343. The biodiversity-related conditions outlined in the prescribed body submission are acknowledged. The Proposed Project incorporates appropriate mitigation measures relating to badger setts, bats, and the control and management of INNS, as detailed within Chapter 8 (Biodiversity) of the EIAR. With regard to maintaining/preserving existing hedgerows/woodlands/trees present within and/or adjacent to the Proposed Project, details in relation to the proposed mitigation measures are provided in Section 8.8.2.1.1 EIAR Chapter 8 and in response to submissions in Section 10.3.2.1 and Section 10.4.3.1 of this report.

10.4.31 Water Modelling and Ecological Assessment

1344. The prescribed body submission from Tipperary County Council raised a specific issue in relation to water modelling and ecological assessment:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

1345. This prescribed body submission stated that, although modelling has demonstrated little to no impact in water levels, the results are based on ESB operating bands which is purely based on hydrological regimes rather than ecological requirements. The submission continued that the planning documents fail to adequately assess the impact of draw down on the spatial extent and distribution of littoral habitats which are crucial to qualifying interests of the Lough Derg (Shannon) SPA, and there appears to be a lack of direct Lower Shannon modelling including no detailed hydraulic or ecological modelling of the Lower Shannon reach, and potential changes in flow variability, velocity, habitat availability are not quantified.
1346. The submission continued that the proposed abstraction presents significant and insufficiently assessed ecological risks to the already critically stressed Lower Shannon system, and Atlantic salmon populations at roughly 5% of their conservation limits, and other flow-dependent species such as lamprey and eel already extremely vulnerable, even small flow reductions may have harmful effects on, spawning, nursery habitat and migration. The submission stated that the assessments do not appear to adequately demonstrate that abstraction is safe for the lower Shannon under low-flow conditions because downstream ecological impacts are inferred, not modelled, and the key risks remain flow-sensitive species (e.g. Atlantic salmon and Lamprey sp.), reduced dilution capacity and dependence on fixed compensation flow (freshwater quality downstream of the dams is currently stressed e.g., Shannon (Lower)_OS0: was at poor status at the last EPA Q value monitoring cycle (2021), and critical uncertainties are not fully taken into account including ESB operational response under stress conditions and ecological thresholds for low flow.
1347. The submission also stated that the analysis appears to be undertaken using a system-scale and is not receptor-specific and ecological responses to compound stressors are not quantified.
1348. The submission further stated that the assessment of the direct effects of the abstraction of water on key ecological receptors (KERs) must have full regard to best available scientific literature regarding potential effects of the aforementioned activities, of similar scale, in the context of the predicted effects of climate change in the area, on the supporting hydrological system of the KER habitats assessed, and the supporting habitats of each KER species assessed. The submission continued that the assessment of the downstream effects of water abstraction on KERs must have full regard to best available scientific literature regarding potential effects of the aforementioned activities, of similar scale, in the context of the predicted effects of climate change in the area, on the supporting hydrological system of the KER habitats assessed, and the supporting habitats of each KER species assessed.

10.4.31.1 Applicant's Response

1349. A detailed response to a similar submission is provided in Section 10.3.8.1. Further information is also provided in response to related submissions in Section 10.3.5.1, Section 10.3.12.1, Section 10.4.5.1, and Section 10.4.18.1 and in Chapter 11 – Water (Hydrological Modelling and Water Levels).

10.4.32 Assessment of Groundwater Dependent Terrestrial Ecosystems

1350. The prescribed body submission from Tipperary County Council raised a specific issue in relation to the assessment of Groundwater Dependent Terrestrial Ecosystems (GWDTE):

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

1351. This prescribed body submission stated that the assessment of GWDTEs are dependent on the draw down being 2%, and as 2% is not a set percentage of extraction, it is possible that the impact on GWDTEs has been incorrectly assessed. The submission continued that ACP should consider these as part of a more detailed assessment of the Proposed Project.

10.4.32.1 Applicant's Response

1352. The concern raised in the submission regarding the use of the 2% drawdown for the assessment of groundwater dependent terrestrial ecosystems (GWDTEs) is noted.
1353. There are no GWDTEs identified around Parteen Basin, which is designation as a heavily modified water body (HMWB). The water storage and regulated nature of Parteen Basin is established in its designation as a HMWB. There is free fall of water over Meelick Weir at medium and low flows, and so changes to the water levels of Lough Derg have no influence on water levels upstream of Meelick Weir. This therefore sets the upper limit of physical influence for water levels in Lough Derg (i.e. it is not physically possible for water levels in Lough Derg, in low and medium flows, to influence water levels upstream of Meelick Weir). As detailed in EIAR Appendix A9.1 – Annex A (Hydrological Modelling Report), Lough Derg will continue to operate within the established Normal Operating Band. This Normal Operating Band is defined using the following water levels:
- Lough Derg top of Normal Operating Band level = 30.86mAOD (Above Ordnance Datum)
 - Lough Derg bottom of Normal Operating Band level = 30.40mAOD.
1354. The assessment of potential hydrogeological impacts in the NIS is based on the source-pathway-receptor model, supported by the hydrological modelling (EIAR Appendix A9.1 – Annex A: Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels).
1355. The hydrological modelling demonstrates that there would be no significant effects on surface water levels within Parteen Basin and Lough Derg and as a result, no significant effect on flow regimes upstream or downstream of the Proposed Project. This finding is critical in the context of groundwater interactions.
1356. Impacts on GWDTEs are linked to:
- Changes in groundwater levels (quantitative status)
 - Changes in flow regimes
 - Changes in groundwater chemistry / pollutant inputs.
1357. In the context of the Proposed Project:
- The hydrological modelling demonstrates no significant effects on surface water levels or flow regimes
 - ESB will continue to regulate water levels within established Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin
 - There will be no measurable alteration to the hydraulic boundary conditions that control groundwater levels in adjacent aquifers.
1358. Furthermore, in relation to raised bog habitats (identified as GWDTE qualifying interest for a number of European sites along the margins of Lough Derg), it is important to recognise their ombrotrophic nature. These systems are primarily rain-fed and are largely independent of groundwater inputs, with hydrological functioning dominated by precipitation and internal peat storage. Groundwater interactions are typically limited to marginal zones and are weakly expressed. For an impact to occur on such systems, two conditions would need to be met:
- A sustained and measurable change in the local water balance (e.g. prolonged lowering of water levels)

- A viable hydrological pathway capable of transmitting that change to the bog system, particularly to the acrotelm, which is critical for ecological function.

1359. The modelling results demonstrate that neither condition arises. With no significant change in the surface water regime, there would be no alteration in hydraulic gradients and therefore no potential for groundwater level fluctuation. Consequently, there is no plausible pathway for impact on raised bog habitats.
1360. Alkaline fen habitats occur in discrete locations around the margins of Lough Derg. Unlike raised bogs, these systems are primarily GWDTEs, sustained by a consistent supply of base-rich groundwater that maintains their characteristic hydrology and chemistry. As such, they are sensitive to changes in groundwater levels, flow pathways, and hydrochemical conditions. However, as noted, the source-pathway-receptor assessment, supported by the hydrological modelling (EIAR Appendix A9.1 – Annex A), demonstrates that the Proposed Project will not significantly alter the hydraulic boundary conditions controlling groundwater levels in the surrounding aquifers. Water levels in Lough Derg will continue to be maintained within the established Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, with no significant changes to surface water levels or flow regimes. Consequently, there will be no measurable impact on groundwater gradients, discharge zones, or the continuity of groundwater supply to these fen systems. In the absence of any change in groundwater levels, flow, or chemistry, there is no pathway by which the Proposed Project could impact the ecological functioning or conservation status of alkaline fens in the Lough Derg area.
1361. Accordingly, a more detailed assessment of GWDTEs beyond that already presented in the NIS is not considered necessary, as the fundamental conditions required to generate impact (i.e. measurable changes in surface water regime and resulting groundwater response) are not present.
1362. In conclusion, taking into consideration the anticipated impacts of the Proposed Project, following the implementation of design and mitigation measures, the Proposed Project would not compromise WFD objectives or cause a deterioration in the status of any surface water or groundwater WFD designated water body and/or jeopardise the attainment of 'good' surface water (or good ecological potential) or groundwater status.

10.4.33 Impact of Aquatic Invasive Species on Native Fauna

1363. The prescribed body submission from Tipperary County Council raised a specific issue in relation to aquatic invasive species:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

1364. This prescribed body submission stated that the EIAR acknowledges the presence of high-risk aquatic invasive non-native species, including zebra mussel, Asian clam, and destructive crayfish plague (which can cause 100% mortality in native crayfish population) yet does not assess how abstraction-related hydrological changes may influence their spread or impact on native fauna such as white-clawed crayfish. The submission also raised concern about invasive species, including zebra and quagga mussels, presenting as serious risks to both the lake environment and the proposed infrastructure, noting that zebra mussels can increase nitrate levels and algae blooms, and that their larvae could enter the abstraction point and clog the system, significantly increasing treatment costs.

10.4.33.1 Applicant's Response

1365. Chapter 8 (Biodiversity) of the EIAR reports the presence of high-risk aquatic invasive species (e.g. zebra mussels, Asian clams, and crayfish plague) within the study area and wider Zol of the Proposed

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Project and the potential risks they pose to native fauna and infrastructure. Potential impacts in relation to the introduction or spread of INNS are considered in Section 8.5.4.1.4, Section 8.5.3.4, and Section 8.7.1.1.5 of the EIAR.

1366. The hydrological modelling undertaken (refer to EIAR Appendix A9.1 – Annex A: Hydrological Modelling Report) provides robust, evidence-based predictions demonstrating that the proposed abstraction will not give rise to significant alterations in hydrological regime, including flow, water levels, or hydrodynamic connectivity. Thus, the proposed abstraction would not significantly impact or influence the introduction or spread of INNS. On this basis, Chapter 8 (Biodiversity) of the EIAR concludes with the correct implementation of the mitigation measures outlined therein, the Construction Phase and Operational Phase of the Proposed Project would not result in any likely significant negative residual effects on KER aquatic species.
1367. This conclusion is supported by the established scientific understanding that the primary vectors for the spread of aquatic INNS are anthropogenic mechanisms (e.g. contaminated equipment, vessels, or inter-catchment water transfers). The Proposed Project will not materially alter the physical or chemical characteristics of the receiving environment (including water quality, temperature regime, or substrate composition) in a manner that would favour INNS over native communities or modify existing population dynamics.
1368. Similarly, while concerns were raised about impacts on native species like white-clawed crayfish, there is no clear mechanism by which the predicted hydrological changes would increase susceptibility to crayfish plague or enhance the competitiveness of invasive species. Environmental conditions influencing these species (such as temperature, substrate, and water quality) are not predicted to change beyond natural variability.
1369. In terms of infrastructure risk, while invasive species like zebra mussels can clog intake systems, this is a known and manageable issue that has been mitigated through established engineering and maintenance measures (refer to Section 8.8.3.2 of the EIAR).
1370. Overall, the evidence shows that the proposed abstraction will not significantly affect the distribution, spread, or ecological impact of INNS beyond existing baseline conditions.
1371. In relation to concerns regarding algae blooms, a response to this is provided in Section 10.2.5 of this report.

10.4.34 Potential Effect of Chlorine on Sensitive Receptors

1372. The prescribed body submission from Tipperary County Council raised concerns about the potential effect of chlorine on sensitive receptors:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

10.4.34.1 Applicant's Response

1373. As noted in Section 8.10 of EIAR Chapter 8 - Biodiversity, the water in the Treated Water Pipeline is treated drinking water and as such is required to contain a certain amount of chlorine to maintain quality along its length. To avoid potential impacts associated with local discharge of chlorinated water from Washout Valves, de-chlorination prior to discharge to the environment by using sodium sulphite dechlorination tablets inserted into perforated wire mesh baskets at the washout chamber or permanent outfall structure will be undertaken. Dechlorination is achieved almost immediately on contact with the tablets. This method provides the most flexible approach for the removal of low chlorine residual and is

suited to the infrequent discharges from Washout Valves. Levels of residual chlorine would be reduced to below <0.005mg/L, as required by the Quality of Salmonid Waters Regulations (1988). All sweetening flow discharges (required during the commissioning phase) would be monitored for chlorine residual, and de-chlorinated prior to entering any watercourse as part of the embedded design measures. Refer to EIAR Appendix A4.1 (Operational Strategy) for further details.

10.4.35 Recommended Planning Conditions from Tipperary County Council

1374. The prescribed body submission from Tipperary County Council recommended a number of biodiversity-related conditions to be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

1375. This prescribed body submission requested the following conditions be attached to any grant of planning:

- Prepare an Invasive Species Management Plan with post construction monitoring and eradication;
- Pre-works ecological surveys to determine the presence of species that may be impacted (birds, bats, badgers), with appropriate mitigation. Derogation licence(s) to be obtained where required. Works to avoid bird breeding season; and
- Derogation licences must be obtained prior to planning consent being given for a development where such derogation licences are required.
- A requirement for field boundary / hedgerow reinstatement and habitat enhancement.

10.4.35.1 Applicant's Response

1376. As noted in Section 8.8.2.1.3 of the EIAR, a Non-Native Invasive Species Management Plan has been prepared and included in the CEMP (EIAR Appendix A5.1) and will be implemented sufficiently far in advance of the proposed construction works commencing so as to allow time to adequately control all target INNS populations within the Zol of the Proposed Project, having regard to the specific timing/seasonal constraints that apply in relation to each individual species. The Non-Native Invasive Species Management Plan will direct the Contractors in implementing the specific mitigation measures required in relation to individual INNS.

1377. With regard to derogation licensing, given the need to remove five roosts and the impacts on bats that are predicted for the Proposed Project, a derogation licence under Section 54 of S.I. 477 of 2011 will be required. The Bat Derogation Licence application has been submitted to NPWS and is included in EIAR Appendix A8.24.

1378. Similarly, given the need to disturb three otter holts and the impacts on otter that are predicted for the Proposed Project, a derogation licence under Section 54 of S.I. 477 of 2011 will be required. The Otter Derogation Licence application has been submitted to NPWS and is included in EIAR Appendix A8.25.

1379. In advance of construction, pre-construction surveys will be undertaken within 150m of the Proposed Project to identify any newly established active holts, assess whether previously inactive holts have become active, and detect any new roosts. Should any such changes be identified, an updated Derogation Licence application will be submitted, as required.

1380. With regard to field boundary/hedgerow reinstatement within the Proposed Project, details in relation to the proposed mitigation measures are provided in Section 8.8.2.1.1 of EIAR Chapter 8 – Biodiversity and in response to submissions in Section 10.3.2.1 and Section 10.4.3.1 of this report.

10.4.36 Restoring the Lower River Shannon SAC

1381. The prescribed body submission from Tipperary County Council raised an issue relating to restoring the Lower River Shannon SAC:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

1382. This prescribed body submission stated that, the implications for restoring the Lower River Shannon SAC, and for Common Terns on Lough Derg, have not been properly assessed. The submissions continued that for decades, the ecological consequences of the Shannon hydroelectric scheme have been deferred, and instead of first restoring the river to meet EU environmental obligations, we now have a proposal for a major new abstraction layered onto an already highly constrained and unsustainable system.

10.4.36.1 Applicant's Response

1383. Appendix K of the NIS demonstrates that the Proposed Project would not impede the ability to restore the conservation objectives of the Lower River Shannon SAC. It should be noted that the restoration objectives associated with the hydrological regime are described in general terms (e.g. 'appropriate hydrological regime necessary for maintenance of alluvial vegetation'). Reinstatement of more natural water regimes would involve a combination of partial storage of flood inflows and controlled releases to the Lower River Shannon, reflecting a naturally variable freshet profile.⁹

1384. As noted in Section 4.1.1.2 of the NIS, a sensitivity analysis to the proposed Eflow regime at Parteen Weir (CDM Smith 2021), in which the existing 10m³/s compensation and fish pass flow is replaced by a varying compensation flow with the inclusion of freshets (increased flows during a flood event or a release of additional water) to assist migratory fish up the Old River Shannon and into Parteen Basin, was undertaken. This found that similar water level differences were simulated during the droughts when the proposed abstractions were included in the Eflow scenario as were predicted for the case for a constant compensation flow. However, this assumes that freshets would not be released during flood (i.e. when spilling) or drought conditions. The basis of this drought period assumption is that if the Eflow is an attempt to mimic the natural flow regime then artificially releasing standard freshets over this period would be introducing a non-natural characteristic to the flow regime. In summary, the hydrological model found that the released flows to the Old River Shannon during periods of spill are virtually the same with or without the proposed Eflows regime in place. However, outside of flood and drought periods more water is released, together with flow variability, by the Eflows regime compared to the use of a uniform 10m³/s compensation flow. Full details of the hydrological model Eflows sensitivity analysis are provided in the EIAR Appendix A9.1 Annex A (Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels). Reinstatement of more natural water regimes would involve partly storing all flood inflows and partly spilling to the Lower River Shannon in a naturally variable freshet time profile. Having due regard to the River Shannon statutory compensation flow obligations, ESB's current practice is that late spring water level is kept near the top of the Normal Operating Band. At winter flood times, and when autumn recovery has started, greater sharing of inflows between storage and the Old River Shannon reduces water available for use in hydropower, reducing revenue to ESB. The Proposed Project would be abstracting up to a maximum of 300Mld or 3.47m³/s and while there may be technicalities for ESB in adjusting gates to provide flow variability, the Proposed Project would not impede a flow-sharing

⁹ This is referred to as a more naturalised flow regime in Chapter 11 Water (Hydrological Modelling and Water Levels).

decision between hydropower and statutory compensation flow at appropriate times of the year and is not an impediment to any Parteen Weir gate adjustments to implement it.

1385. In relation to the restoration objectives for common tern within Lough Derg (Shannon) SPA, the NIS provides comprehensive baseline data (2016 to 2024) in Section 4.3.1.2, supported by EIAR Appendix A8.21. This documents the conservation status and recent records of the species within the SPA. Common tern are also identified as a special conservation interest in Section 7.12 of the NIS and assessed therein.
1386. The restoration objectives are linked to the availability and quality of nesting habitat, prey resources, and stable hydrological conditions. Hydrological and water quality modelling for the Proposed Project (EIAR Appendix A9.5) demonstrates no significant effects on water levels, flow regimes, or water quality upstream or downstream of the abstraction. As a result, there is no mechanism by which the Project could affect the ecological conditions required to support restoration of the species.
1387. Common tern are ground-nesting birds that form colonies in open areas with loose substrates such as sand or shingle, typically with sparse vegetation (Arnold *et al.*, 2020). Within Lough Derg (Shannon) SPA, breeding has occurred almost exclusively on Goat Island, over 8km upstream of the Proposed Project. The Proposed Project itself is located more than 4km downstream of the SPA and does not overlap with suitable nesting habitat. No evidence of common tern use was recorded within the proposed RWI&PS footprint.
1388. This spatial separation, together with the absence of hydrological or water quality effects, confirms that the Project will not affect nesting habitat availability or suitability, which are key parameters underpinning the restoration objectives.
1389. Accordingly, the Proposed Project will not adversely affect the integrity of the SPA or hinder the achievement of favourable conservation condition for common tern or other qualifying interests of Lough Derg (Shannon) SPA.

11. Water (Hydrological Modelling and Water Levels)

11.1 Overview

1390. Fifty-seven of the 114 submissions raised issues in relation to the potential effect of the Proposed Project on the Parteen Basin and the adequacy of the hydrological modelling undertaken. The matters raised include the need for the assessment of low flow or drought conditions and for this assessment to take account of future climate change, which have been assessed in the EIAR, the need for an assessment of a revised baseline which allows for the environmental recovery of the River Shannon which was considered within the modelling undertaken, and proposed conditions/controls on the abstraction including monitoring.
1391. In response to these, this chapter sets out an explanation of the hydrological modelling that has been undertaken and the effect on the water levels at Parteen basin. This has been done in order to allow the matters raised within the submissions that are specific to the modelling and the assessment of water levels within the Parteen Basin due to the proposed abstraction to be addressed altogether. A separate Chapter (Chapter 12 (Water) (General) of this report covers any water related matters that were not about the modelling or impact at Parteen Basin.
1392. Any matters related to the conclusions of the EIAR on the likely environmental effects based on this modelling, such as for the water quality, the biodiversity assessment, NIS or Water Framework Directive are addressed in the chapters specific to those matters: Chapter 12 (Water (General)), Chapter 10 (Biodiversity), Chapter 25 (Natura Impact Statement) and Chapter 26 (Water Status Impact Assessment Report (Water Framework Directive)). In particular, many of the submissions referred to in this Chapter raised the effect on water quality as a result of lowering water levels. Submissions on the impact on water quality and the risk of algal bloom are considered in Chapter 12 - Water (General) of this Report.
1393. Given the number of responses that relate to the general themes in this chapter, specific examples have been provided on the type of comments raised under the general theme. This is different to other chapters in this report and has been done in order to aid the clarity of the response provided by the Applicant. By identifying a particular matter raised by a particular respondent does not mean that other submissions are not being addressed rather the detail is provided to illustrate the general theme of the submissions.
1394. An assessment of the environmental effects of the Proposed Project on the Parteen Basin was carried out and reported in the EIAR submitted as part of the SID Planning Application including Chapter 9 (Water) (Water) and Chapter 8 (Biodiversity). The assessment complied with the relevant legislation, standards and guidance as set out in that chapter and was prepared by a team of competent experts as set out in Chapter 2 (The Environmental Impact Assessment Process) in the EIAR.
1395. Specifically with regard to the assessment of the environmental effects at the Parteen Basin Chapter 9 (Water) of the EIAR was supported by:
- Appendix A9.1 (Abstraction Assessment); and
 - Annex A to Appendix A9.1 (Hydrological Modelling Report).
1396. This chapter is structured around the following sections:
- General matters raised regarding hydrological modelling and the impact on water levels due to the abstraction of raw water from Parteen basin
 - Specific matters raised on hydrological modelling and the impact on water levels due to the abstraction of raw water from Parteen basin

- Specific matters raised by Prescribed Bodies on hydrological modelling and the impact on water levels due to the abstraction of raw water from Parteen basin.
1397. Within these sections there is some overlap and inter-relationship between the matters raised and where relevant cross references have been included to link any General and Specific Matter responses.
1398. This Report and its supporting appendices, comprise the response of the Applicant to the issues raised regarding hydrological modelling and water level change due to the abstraction of raw water at Parteen Basin. The responses in this Chapter are related to those in the following Chapters of this report which should be read alongside this Chapter:
- Chapter 2 (Overarching Matters)
 - Chapter 4 (Consultation and Communication)
 - Chapter 6 (Proposed Project Description)
 - Chapter 7 (Construction and Commissioning)
 - Chapter 10 (Biodiversity)
 - Chapter 12 (Water (General))
 - Chapter 25 (Natura Impact Statement)
 - Chapter 26 (Water Status Impact Assessment Report (Water Framework Directive))
1399. Cross references to these other relevant Chapters have been included to assist the reader however, the Applicant's response to the submissions made to ACP is the entire Report.
1400. As background to the modelling submissions the Applicant would highlight the description of the existing water management regime contained in Chapter 4- Proposed Project Description of the EIAR. Particular features of that regime as described in Chapter 4 include:
- At present, the normal water level on Lough Derg and on Parteen Basin is managed to be between the following limits:
 - Parteen Basin: Upper level 30.86mOD Malin Head (33.56mAOD Poolbeg). Lower level: 30.00mAOD Malin Head (32.70mAOD Poolbeg)
 - Lough Derg: Upper level 30.86mAOD Malin Head (33.56mOD Poolbeg). Lower level: 30.40mAOD Malin Head (33.10mAOD Poolbeg).
 - Parteen Weir acts as the downstream control structure for water levels in the system. Water levels in Parteen Basin are maintained within the upper and lower levels at all times.
 - During low flow conditions, the lower water level at Parteen Basin (30.0mAOD Malin), must be maintained for dam safety purposes and in doing this ESB ensures that water levels in Lough Derg are within the Normal Operating Band as the waterbodies broadly operate as a combined system, in these conditions.
 - ESB also continually discharges a statutory flow of 10m³/s down the Old River Shannon. By selecting how many turbines are in operation each day, ESB can set how much water is diverted from Parteen Basin to the station daily.
 - When the inflow from Lough Derg into Parteen Basin is less than 400m³/s, ESB keeps the water level within its Normal Operating Band by controlling how much water passes through the turbines. Using this control of water levels ESB's general practice is to maintain levels at the lower end of the Normal Operating Band in late autumn, in anticipation of higher inflow conditions across autumn and winter.

- As winter comes to an end, ESB monitors the falling inflows along the length of the River Shannon before cutting back electricity generation in late spring with the general aim to retain water towards the upper end of the Normal Operating Band and to keep it in the upper end of the band through the summer.
1401. Many of the submissions that raise concerns over the impact on the Lower River Shannon assert that the assessment has not adequately addressed the likelihood that the statutory minimum compensation flow will change in the future. The assessment does not assume that the historic origin of the 10 m³/s statutory minimum compensation flow is determinative for WFD/Habitats Directive compliance. Instead, the assessment is based on the current statutory flow regime, which is legally binding and forms part of the existing hydrological baseline for the affected water bodies. ESB maintains this minimum compensation flow under its statutory obligations, and the Proposed Project will not alter, constrain or influence these requirements.
1402. The WFD requires that a proposed activity must not cause deterioration in the status of any affected water body or prevent the achievement of environmental objectives.
1403. The Water Status Impact Assessment Report (WSIAR) therefore evaluates whether the abstraction could affect the ecological or chemical status of the relevant water bodies given the actual flow regime that will continue to operate, including the statutory compensation flow and the fish pass flow. The assessment does not rely on the 10 m³/s flow being ecologically optimal; rather, it evaluates whether the Proposed Project would introduce any additional pressure that could worsen conditions relative to the existing baseline.
1404. The hydrological modelling tests the system under varying scenarios, including normal, flood and drought conditions – the latter two being when ecological sensitivity is most prevalent, potentially.
1405. The results demonstrate that the abstraction does not give rise to hydrological changes of a magnitude capable of causing deterioration of any WFD quality element or compromising the achievement of Good Ecological Status or Good Ecological Potential. The WSIAR appropriately assesses the Proposed Project against the current statutory flow regime and demonstrates that the abstraction will not cause deterioration or impede the achievement of WFD objectives.
1406. Under the Habitats Directive, a proposed plan or project shall not be authorised where it would adversely affect, or risk adversely affecting, the integrity of a site, including by undermining the conservation objectives established to secure the attainment or maintenance of the favourable conservation status of the relevant qualifying interest
1407. The NIS assesses, on the basis of the same modelling outputs, whether the proposed abstraction would impede the attainment of the European site's (Lower River Shannon Special Area of Conservation (SAC)) conservation objectives, and demonstrates that the abstraction will not prevent the achievement of those objectives necessary to secure the recovery and maintenance of the favourable conservation status of the relevant qualifying interests.
1408. This assessment also informed the conclusions of the EIAR which has to account for future changes in the baseline.
1409. Any future baseline regime would be decided at a programmatic level, through the RBMP, national policy or a regulatory process, and is independent of the Proposed Project.
1410. The overall conclusion of all the assessments is that the abstraction does not limit or prejudice the State's ability to revise compensation flows in the future to achieve a more naturalised flow regime, if this were required.

11.2 Response to General Issues Raised

11.2.1 Assessment of Low Flow and Drought Conditions

1411. The following submissions raised concerns about the need for or, inadequate assessment of, low flow or drought conditions in the EIAR:

Unique ID	Name of Individual or Organisation
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_10	Christopher Campion
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_15	Fergal Hayes
WSP_SUB_16	Joanne Skehan
WSP_SUB_17	Joe Mayo
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_22	Michael Reidy
WSP_SUB_23	Michelle Keary
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannans Fishing Club
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_29	Suzanne Noble
WSP_SUB_31	Tony O'Brien
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_34	Castleconnell Boat Club
WSP_SUB_35	Castleconnell River Association
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_40	Diarmuid O' Crowley
WSP_SUB_45	Friends of Irish Environment
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_50	James Crowley
WSP_SUB_54	Killaloe Ballina District Angler's
WSP_SUB_57	Lucy Murphy
WSP_SUB_61	Michelle McNamara
WSP_SUB_63	Port Omna Beo
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_65	Samuel Norris
WSP_SUB_66	Sarah Conroy

Unique ID	Name of Individual or Organisation
WSP_SUB_67	Senator Dee Ryan
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_70	Tom and Mary Scully
WSP_SUB_72	Carol Killeen
WSP_SUB_77	Shane Mathews
WSP_SUB_82	Councillor Rita McInerney
WSP_SUB_88	Inland Fisheries Ireland (IFI)
WSP_SUB_106	Liam Minehan
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

1412. A large number of the responses related to the Applicant's assessment / modelling of the impact of the Proposed Project at Parteen Basin are general comments regarding the adequacy of the EIAR. These general observations include matters related to:

- Potential effects during low-flow periods and a failure to assess the impact of the Proposed Project in drought conditions
- Assessment of average flows only.

1413. Several responses received by the Coimisiún suggest that the EIAR is based on an assessment of the effect of the Proposed Project on the average flow in the River Shannon and that the effect on low flows / drought flows have not been assessed.

1414. For example, the Friends of the Irish Environment response states:

"Ecological effects are most likely during low-flow periods rather than average conditions. Assessment methodologies relying primarily on mean annual flow conditions may therefore underestimate ecological risk relevant to deterioration thresholds, particularly where regulated river systems already experience altered flow regimes."

1415. The River Shannon Environmental Protection Alliance Company Ltd and Councillor Séamie Morris identify that:

"The Project documentation therefore misrepresents the true scale of abstraction impacts by presenting an average-flow percentage that conceals severe low-flow effect."

1416. Similarly, some observations, such as that from Fergal Hayes suggest that no assessment of drought conditions had been undertaken, and others, including for example, Suzanne Noble request that:

"It is vital that current and projected lake levels are fully assessed before any abstraction proceeds."

11.2.1.1 Applicant's Response

1417. The Applicant confirms that the EIAR contains a full assessment of the effect of the Proposed Project abstraction. It is not correct that low flow or drought conditions have not been modelled. The assessment undertaken, including the modelling is reported in full in the EIAR in:

- EIAR Chapter 9 (Water)
- Appendix A9.1 (Abstraction Assessment)

- Annex A of Appendix A9.1 (Hydrological Modelling Report).

1418. As set out in Section 2.2.4 of the Hydrological Modelling Report (Annex A to Appendix A9.1 (Abstraction Assessment)) in the EIAR the model considered three flow scenarios.

- Flood conditions
- Normal conditions (non-flood and non-drought)
- Drought conditions.

1419. In normal conditions (non-drought / non-flood conditions) ESB maintains the minimum compensation flow down the Old River Shannon and the abstraction for the Proposed Project would be facilitated from management of the water being used in power generation. This is reported, for example, in Section 9.4.4.3.1 of Chapter 9 (Water) of the EIAR:

“ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year round basis. At a practical level, this will mean that ESB, in keeping the water level within the NOB [Normal Operating Band] on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the NOB on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference.”

1420. In flood conditions the maximum volume of water capable of passing through Ardnacrusha would occur, as it does now and the flow down the Old River Shannon would not be altered. Consequently, the abstraction for the Proposed Project would be met from the lake storage. This is reported in Section 9.4.4.3.1 of Chapter 9 (Water) of the EIAR:

“During flood flows, when the water level is no longer below the top of the Lough Derg NOB, ESB can operate Ardnacrusha at full capacity and allow the excess flow down the ORS as they have done in the past, and the Proposed Project abstraction would be provided from a minor depletion in the simulated lake storage.”

1421. In drought conditions the ESB would cease power generation and so the abstraction for the Proposed Project cannot be facilitated from within those flows. Consequently, the Proposed Project would result in an additional drawdown in water levels, in a drought, compared with the baseline conditions and this has been the focus of the assessment as it is this scenario where there would be a change arising from the proposed Project which would have an effect on the environment. Section 6.1.1.2 of Appendix A9.1 (Abstraction Assessment) in the EIAR reports:

“From the 52-year model simulation period (1972-2023), it was decided to look closer at the specific 1995 and 2018 drought events that the Lough Derg (Derg TN) and Parteen Basin (Derg HMWB) system was proven to be the most sensitive to. The 2018 drought shows the biggest impact of the WSP scenarios on the simulated lake levels, and the 1995 drought shows the second biggest impact. Other candidate droughts such as 1976, 1989, 2006, and 2010 were simulated to have negligible simulated lake level differences that were much less significant.

...For the 2018 drought event (most impactful), with the inclusion of the Proposed Project 154Mld abstraction scenario, the maximum difference in simulated lake level from the baseline at the lowest point of the drawdown is 65mm. For the Proposed Project 300Mld abstraction scenario, the maximum

difference lake level difference at the lowest point of the drawdown is 134mm. Even during the worst modelled drought event (2018) from the 52-year model simulation period, the size and rate of simulated lake level change fits within the range of ESB normal observed lake level fluctuations seen within the 52-year period of historical recorded levels. Furthermore, the simulated lake levels with the inclusion of the Proposed Project abstraction are still within the Lough Derg NOB, and within the upper and lower water levels that ESB applies on Parteen Basin, without a change to the ORS compensation and fish pass flows, which would always be met.”

1422. Therefore, the Applicant has modelled the effect of the Proposed Project on low flow or drought conditions and this is set out in full in the EIAR.

11.2.2 Reduction in the Flow Down the Old River Shannon

1423. A large number of the submissions raised concerns about the effect of the Proposed Project on the Old River Shannon and the minimum statutory compensation flow of 10m³/s. Linked to the submissions suggesting that the modelling only considers average flows, which is addressed in Section 11.2.1, multiple responses have referred to a 30% reduction in the minimum statutory compensation flow down the Old River Shannon as being the impact which should have been modelled and assessed in the EIAR:

Unique ID	Name of Individual or Organisation
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_10	Christopher Campion
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_15	Fergal Hayes
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_23	Michelle Keary
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannan's Fishing Club
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_34	Castleconnell Boat Club
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_37	Dr Phyll Bugler
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_54	Killaloe Ballina District Angler's
WSP_SUB_57	Lucy Murphy
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_72	Carol Killeen
WSP_SUB_112	Limerick County Council

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1424. This includes submissions such as, but not limited to: Caroline and Mark Eldridge, Christopher Campion Éadaoin Kiely and Darren Kirwan, Eva Killeen, Fergal Hayes and Pamela Quirke O'Meara which state:

“This would mean that the proposed 2% water abstraction would in fact become a 30% abstraction due to the lowered levels of the river”.

1425. Similarly, River Shannon Environmental Protection Alliance Company Ltd have commented:

“During Q95 and drought-year conditions, the proposed abstraction would remove between approximately 30% of available flow in the Lower Shannon under realistic operational scenarios. The Project documentation therefore misrepresents the true scale of abstraction impacts by presenting an average-flow percentage that conceals severe low-flow effects.”

11.2.2.1 Applicant's Response

1426. The Applicant does not agree with these submissions. They are based on the calculation that the abstraction for the Proposed Project (a maximum of 3.47m³/s) would result in an equivalent reduction, during a drought period, from the minimum statutory compensation flow to the Old River Shannon, which is currently, 10m³/s. This would be a 30% reduction to 6.53m³/s.

1427. This is not correct and is based on a misunderstanding of the modelling undertaken and does not reflect how ESB manage water within Parteen Basin.

1428. It is accepted that maintaining the minimum statutory compensation flow is a priority use of water within the River Shannon and Parteen Basin and this is acknowledged in the Draft Water Abstraction Document submitted as part of the Strategic Infrastructure Development Planning Application documents which states:

“ESB will continue to manage water flows and levels at the Parteen Basin within its normal operating regime which the Parties acknowledge balances numerous rights and obligations of ESB (including the requirements of dam safety, hydropower generation and the Minimum Required Compensation Flow). UÉ does not seek to or have any control or requirements of ESB as to how ESB manages these flows and levels into and from the Parteen Basin in order to accommodate the Abstraction”....

....ESB shall have the right to carry out whatever works or operations as it considers necessary so as to preserve the Minimum Required Compensation Flow”

1429. This commitment has then been applied within the hydrological modelling undertaken. As set out in Hydrological Modelling Report, (Annex A to Appendix A9.1 (Abstraction Assessment) in the EIAR), in Table 2.1, the operating rules on which the hydrological model is based, focus on maintaining the statutory minimum compensation flow and consequently, the supply of water for the Proposed Project abstraction would be met by the following:

- In 'normal' (no-drought / non flood) conditions (as defined in Section 11.2.1.1 of this report) ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As stated in Chapter 4 (Proposed Project description) of the EIAR:

“As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the Old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does

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currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project.”

- In a drought or flood scenario (as defined in Section 11.2.1.1 of this report) the abstraction for the Proposed Project will be met from water storage within the Parteen Basin.

1430. The Applicant has stated that the purpose of the hydrological modelling was to demonstrate whether the minimum statutory compensation flow down the Old River Shannon could be maintained with the Proposed Project abstraction in operation and still maintain the water level above the minimum required level.

1431. The Hydrological Modelling Report, (Annex A to Appendix A9.1 (Abstraction Assessment) in the EIAR), is focused on explaining the modelling of that draw down in lake level and for example, includes in Section 2.2.4 under the section on drought conditions the following (emphasis added):

*“If the lake inflow is less than 20m³/s then the flow to Ardnacrusha is set to zero as power generation is ceased (a threshold based upon observed recent management practice). The model hunting routine to adjust Ardnacrusha flows to manage lake level towards the Lough Derg NOB upper or lower target level is switched off. The compensation and fish pass flows to the ORS are maintained as they would normally without the WSP abstraction in place. **The WSP abstraction is provided from a reduction in the simulated lake storage.**”*

1432. Therefore, the submissions suggesting a 30% reduction in the minimum statutory compensation flow would occur as a result of the Proposed Project are not correct and the hydrological modelling confirms that the 10m³/s statutory minimum compensation flow can be maintained throughout a drought equivalent to the most severe drought on record, allowing for future climate change and the Proposed Project abstraction as set out in for example, Section 9.4.4.3.1 but also in Appendix A9.1 and Annex A of Appendix A9.1 in the EIAR:

“The model demonstrates that the required ORS compensation and fish pass flows downstream can always be met, either with or without the simulated Proposed Project abstraction in place within the modelling undertaken.”

1433. There is a specific matter included in Section 11.3.2 that is relevant to this general matter. The is also a general observation related to the operation of the model in 11.2.9.

11.2.3 Maintaining the Minimum Compensation Flow

1434. The following submissions raised concerns about the need to maintain the minimum compensation flow to the Old River Shannon although many of the other responses allude to this in a different way specifically those addressed in Sections 11.2.1 and 11.2.2 of this report:

Unique ID	Name of Individual or Organisation
WSP_SUB_35	Castleconnell River Association
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council

1435. A number of responses referred to the need to increase or change the minimum compensation flow to the Old River Shannon and these are considered further in Section 11.2.6 of this report. However, others made comment that as a minimum the existing minimum statutory compensation flow of 10m³/s must be maintained.

1436. For example, Limerick County Council stated:

"To ensure that there is no further alteration of the original channel it is essential that at least the 10m³/sec is maintained in the original channel."

11.2.3.1 Applicant's Response

1437. Chapter 9 (Water) of the EIAR confirms that the minimum statutory compensation flow to the Old River Shannon, currently 10m³/s, can be maintained with the Proposed Project in operation. As set out in Section 11.2.2 it is agreed that the statutory minimum compensation flow must be maintained and the Applicant has demonstrated this can be achieved.

1438. There is a general observation related to the operation of the model in 11.2.9 that is relevant to this general matter. There is also a general observation related to the operation of the model in 11.2.9.

11.2.4 Future Climate Change

1439. The following submissions made reference to the need for the impact assessment including the hydrological modelling to take account of the impact of future climate change. These were:

Unique ID	Name of Individual or Organisation
WSP_SUB_06	Brian Leddin
WSP_SUB_07	Bridget Ginnity
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_16	Joanne Skehan
WSP_SUB_17	Joe Mayo
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_23	Michelle Keary
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannans Fishing Club
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_30	Terry Forristal
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_40	Diarmuid O' Crowley
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_50	James Crowley
WSP_SUB_54	Killaloe Ballina District Angler's
WSP_SUB_55	Laura Kavanagh

Unique ID	Name of Individual or Organisation
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_57	Lucy Murphy
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_63	Port Omna Beo
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_65	Samuel Norris
WSP_SUB_68	The Local Authority Waters Programme (LAWPRO)
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_72	Carol Killeen
WSP_SUB_82	Councillor Rita McInerney
WSP_SUB_83	National Parks and Wildlife Service (NPWS) - Development Applications Unit (DAU)
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

1440. A number of the responses have identified the need for the modelling and the assessment of the effects on the River Shannon and the Parteen Basin to consider climate change and to adopt a precautionary based approach. This includes for, example Mountshannon Community Council which states:

“The abstraction regime appears heavily dependent on historic modelling rather than precautionary, worst-case climate-adjusted scenarios.

Given the permanent nature of the infrastructure and its national scale, modelling must be precautionary and future-proof.”

1441. Similarly, the River Shannon Environmental Protection Alliance Company Ltd comment:

“The hydrological modelling presented in Appendix A9.1 Abstraction Assessment relies on a 52-year simulation period (1972–2023) and identifies perceptible abstraction effects only during 1995 and 2018 drought analogues. However, the modelling does not demonstrate performance under reconstructed historical droughts, compounded multi-season hydrological drought, or prolonged climate-adjusted scenarios.”

1442. A large number of the responses specifically reference relevant projections:

“Climate change analysis by the ICARUS Institute at Maynooth University have shown that in a short number of years, Ireland and the Mid-West could experience increased times of drought during the summer months.”

11.2.4.1 Applicant's Response

1443. The Applicant confirms that climate change has been taken into account within the assessment in the EIAR (and within the WSIAR and NIS). The approach adopted to predicting the effects of future climate change is set out in Section 2.3.2, Attachment E and Attachment F of Annex A (Hydrological Modelling Report) to Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) of the EIAR.

1444. Whilst it is correct to state that the model uses historical data, that data has been used in the way that is requested by a number of the observations including the River Shannon Protection Alliance Company

Ltd i.e. the historical data has been used as the basis for simulating the precautionary effect of future climate change scenarios during drought conditions.

1445. The detail of the modelling undertaken to predict the effect of future climate change is set out in Section 2.3.2 of Annex A (Hydrological Modelling Report) to Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) of the EIAR. The below extract provides an overview of the approach:

“The applicability of the ICARUS Q95 allowances for rarer drought events has been investigated and found likely to provide a reasonable first-order estimate of allowances for low flows as rare as the 1 in 25-year low flow (though with the caveat that greater uncertainties, and hence lower confidence, apply to those flows at the rarer end of the scale). This approach to applying climate change to the inflows is referred to as the ICARUS Variant method. See Attachment F [to Annex A of Appendix A9.1] for more details on the study undertaken by this project to investigate the applicability of the ICARUS climate change allowances for Q95 to rarer low flows.

A range of allowances are supplied by the ICARUS study based upon the probabilistic nature of the underlying projection data. To supply a reasonable worst case scenario for the 2080s the RCP8.5 Upper 75th allowance was selected¹⁷ (in the results it is also referred to as the Lower Scenario to be consistent with the nomenclature of the NWRP approach). For comparison the results, from the Central 50th (2080s, RCP8.5) climate change allowance, are also presented to provide context.

Climate change was incorporated into the projection of evaporation using the +2oC increase in mean temperature approach used in the ICARUS (2020) study, which uses the Oudin formula to estimate the change in evaporation. Sensitivity analysis to a +/-0.5oC uncertainty to the +2oC increase in mean temperature suggested only marginal differences in the simulated levels and was not therefore included in the analysis.

Seasonal rainfall allowances were obtained from an interpretation of various sources of Ireland specific climate change analyses (Maynooth 200818; Maynooth 201819; Nolan et al. 201720; Nolan & Flanagan 202021) which suggests for the 2080s that summer rainfall depth may be reduced by - 21% (+/- 7) and winter rainfall increased by +16% (+/- 7) (see Attachment E [to Annex A of Appendix A9.1]).

Image 2.8 and Image 2.9 [in Annex A of Appendix A9.1] present the modelling results with the reasonable worst case 2080s climate change impacts (CC 2080s Lower) included for the baseline (without WSP) and with WSP scenarios for the 1995 and 2018 drought events respectively. The graphs also provide the simulated lake levels without future climate change allowances (shown previously in Image 2.6 and 2.7 [in Annex A of Appendix A9.1]). Therefore, Image 2.8 and Image 2.9 [in Annex A of Appendix A9.1] show the combined effects of both projected future climate change and WSP on simulated lake levels for the two most impactful modelled drought events 1995 and 2018.”

1446. The conclusions of the assessment were also clearly stated in Appendix A9.1 (Abstraction Assessment) of the EIAR:

“During the modelled 2018 drought event, with the inclusion of the 2080s Lower (reasonable worst case) climate change scenario, the difference in simulated lake level between the Proposed Project 300Mld abstraction scenario and baseline at the lowest point of the drawdown is 168mm. Therefore, even when applying a precautionary approach to consider the reasonable worst case 2080s climate change projections to the most impactful drought event (2018) in the 52-year model simulation period, the additional simulated lake level drawdown caused by the inclusion of Proposed Project is still fitting within the range of ESB normal observed lake level fluctuations, resulting in levels still within Lough Derg NOB, and within the upper and lower water levels that ESB applies on Parteen Basin with no change to the ORS compensation and fish pass flows, which would always be met.”

1447. There were specific issues raised that are also relevant to the general matter set out in this response. They are addressed in Section 11.3 and include specifically Section 11.3.7.

11.2.5 Increase in periods of droughts under future climate change scenarios

1448. Multiple responses make reference to the need for the assessment in the EIAR to take account of the increase in drought periods resulting from climate change:

Unique ID	Name of Individual or Organisation
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_23	Michelle Keary
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_40	Diarmuid O' Crowley
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_50	James Crowley
WSP_SUB_60	Michael Barker and Company
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_63	Port Omna Beo
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_65	Samuel Norris
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_72	Carol Killeen

1449. The submissions raise a number of inter-related issues including general comments on the duration of a drought / low flows being extended by the Proposed Project because water levels would be lower as a result of the additional abstraction, the increased frequency of drought events and the increased duration that the minimum flow to the Old River Shannon is maintained.

11.2.5.1 Applicant's Response

1450. As stated above, the Applicant confirms that the effects of climate change have been assessed and reported in the EIAR.

1451. In terms of defining a drought, the Q95 flow, (the flow that is equalled or exceeded for 95% of the time), is the widely accepted index of low flows. A certain number of consecutive days of the Q95 low flow would indicate a hydrological drought event. The number of consecutive Q95 low flow days to indicate

trigger a drought can be dependent on the sensitivity of the specific catchment and system. The EIAR hydrological modelling has defined five consecutive days when the net inflow is less than 20m³/s, (equivalent to the Q95 low flow), as a suitable drought indicator specific to the Lough Derg/ Parteen Basin system.

Frequency of Drought Events

1452. In line with the previous response to the consideration of future climate change, in Section 11.2.4, the ICARUS (2020) study 2080s RCP8.5 Upper 75th climate change allowances, were adopted, as a reasonable worst case scenario for the predicted future effects to the Q95 low flow into the Lough Derg/ Parteen Basin system.
1453. Table E.6 in Annex A (Hydrological Modelling Report) to Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) in the EIAR, shows the 2080s RCP8.5 Upper 75th would mean a 27% reduction in the Q95 low flow. Therefore, the EIAR hydrological modelling accounts for this predicted reduction in the Q95 low flow and considers the potential increase in the frequency of drought events under a precautionary future climate change scenario.

Duration of Drought Events

1454. Image 2.9 in Annex A (Hydrological Modelling Report) to Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) in the EIAR, presents the modelling results with the reasonable worst case 2080s climate change impacts included for both the baseline (without WSP) and with WSP scenarios for the 2018 drought (the worst drought event year in our 52-year model simulation period 1972-2023).
1455. This shows a notable increase in drawdown when including climate change impacts (both with and without WSP included) due to the reduction in the lake inflows and therefore the increase in the severity of the 2018 drought event.
1456. However, the graph (in Image 2.9 in Annex A (Hydrological Modelling Report) to Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) in the EIAR) also shows that even when applying a precautionary approach to consider the Proposed Project abstraction, at 300 MI/d and reasonable worst case 2080s climate change scenarios to the most impactful drought event in the 52-year simulation model period, the simulated drawdown is still within the Lough Derg Normal Operating Band and Parteen Basin upper and lower water levels, whilst maintaining the minimum statutory compensation flow to the Old River Shannon and fish pass flows.

11.2.6 Whether Environmental Recovery may be Constrained

1457. Several of the observations on the modelling suggest that the modelling should not have been based on the current Operating Band as this has no environmental basis and instead argue that the assessment should be based on conditions that would facilitate the environmental recovery or improvement of the Lower River Shannon. Different responses refer to the conditions required to achieve this.

Unique ID	Name of Individual or Organisation
WSP_SUB_11	Councillor Seán Hartigan
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_35	Castleconnell River Association
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_45	Friends of the Irish Environment

Unique ID	Name of Individual or Organisation
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_68	The Local Authority Waters Programme (LAWPRO)
WSP_SUB_80	An Taisce
WSP_SUB_88	Inland Fisheries Ireland (IFI)
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

1458. A summary of the observers is provided by Friends of Irish Environment (in the section from Ecofact):

“The proposed abstraction is not being introduced into an ecologically neutral baseline. It is being added to a hydrological regime in which approximately 90–95% of the long-term average flow of the Lower River Shannon SAC at Parteen Regulating Weir is being abstracted from the SAC and diverted to Ardnacrusha HEPS, leaving a largely uniform statutory compensation flow of 10 cumecs in more than 15 km of the Lower River Shannon SAC channel, for on average 93% of the time.....

....There is no demonstration that the current compensation regime maintains hydromorphological processes consistent with Good Ecological Status or Good Ecological Potential, or that it maintains the favourable conservation status of qualifying interests in the >15 km SAC river channel between Parteen Regulating Weir and the confluence with the tailrace. The assessment demonstrates limited hydrometric change within a regulated system but does not establish the ecological adequacy of that system.”

1459. Similarly, the IFI submission stated that there is a clear need for the abstraction regime to account for any proposed changes to the base flow down the Old River Shannon as a result of the outcome of the Eflow study as part of the Lower Shannon fish passage project.

1460. Councillor Seán Hartigan raised concern about the fact that the CDM Smith Report was not considered in the water modelling for the planning application.

11.2.6.1 Applicant's Response

1461. The Applicant does not agree with the submissions and considers that the Proposed Project is, at least to a degree, being conflated with an existing issue, that is not for the Proposed Project to resolve. Consequently, the objections being made, in terms of river flow and fish pass, are not objections to the Water Supply Project but proposed solutions to a problem that exists and is being addressed at a programmatic level.

1462. The assessment does not assume that the historic origin of the 10 m³/s flow is determinative for WFD/Habitats Directive compliance. Instead, the assessment is based on the current statutory minimum compensation flow regime, which is legally binding and forms part of the existing hydrological baseline for the affected water bodies. ESB maintains this minimum compensation flow under its statutory obligations, and the Proposed Project will not alter, constrain or influence these requirements.

1463. The historic pressures salmon and eel populations at Ardnacrusha are long standing and arise from the operation of the hydropower scheme, which is regulated under a separate statutory framework. These legacy impacts are already reflected in the baseline ecological status of the relevant Shannon water bodies within the River Basin Management Plan. ‘Review of Ireland’s Heavily Modified Water Body Designations for the Third Cycle River Basin Management Plan’ identifies a number of mitigation

measures that may support Good Ecological Potential for HMWB. These include fish migration aids (i.e. fish pass, screen, ladders) to allow the movement of fish along the river channel, and the establishment of ecological flow regimes which would facilitate a range of ecological functions from minimum flows, to spawning trigger flows, to sediment transport flows and larger channel forming flows.

1464. Similarly, the Conservation Objectives for the Lower River Shannon SAC set out a number of measures required to restore favourable condition of the qualifying interests of the SAC. This includes removal of barriers to fish movement.

Water Framework Directive Test

1465. The WFD requires that a proposed activity must not cause deterioration in the status of any affected water body or prevent the achievement of environmental objectives.

1466. The WSIAR therefore evaluates whether the abstraction could affect the ecological or chemical status of the relevant water bodies given the actual flow regime that will continue to operate, including the statutory compensation flow and the fish pass flow. The assessment does not rely on the 10 m³/s flow being ecologically optimal; rather, it evaluates whether the Proposed Project would introduce any additional pressure that could worsen conditions relative to the existing baseline.

1467. With regard to the achievement of the environmental objectives the Applicant has demonstrated that, under the requirements of the WFD, the Proposed Project would not prevent these measures from being implemented, as reported in Table 5.21 in the WSIAR. This listed the Programme of Measures set out in the Water Action Plan 2024 and confirmed the interaction of the Proposed Project with those measures. This determined that the Proposed Project will not have implications for the implementation of these measures.

1468. The Programme of Measures includes:

- Hymo 7: Implementation of the roadmap of actions, including the use of state-of-the-art technical solutions, to improve fish migration in the lower Shannon at the Hydroelectric scheme located around Parteen and Ardnacrusha. The pilot project will initially examine the feasibility of mitigation and will progress to the next stages, as appropriate.

1469. Therefore, the modelling has been used to evaluate whether the Proposed Project impedes the future implementation of Hymo 7. This was based on the recommendations of the CDM Smith Report, regarding Environmental Flows (Eflows) and freshets, which could affect the flows of the Lower River Shannon, as described further below.

Lower River Shannon SAC test

1470. Under the Habitats Directive, a proposed plan or project shall not be authorised where it would adversely affect, or risk adversely affecting, the integrity of a site, including by undermining the conservation objectives established to secure the attainment or maintenance of the favourable conservation status of the relevant qualifying interest.

1471. In addition to the matters raised regarding the WFD Programme of Measure, some observations, including specifically Friends of the Irish Environment, highlighted that establishing that the Proposed Project would not impede the WFD Programme of Measures did not address the SAC status of the water body. It stated:

“The referenced Roadmap for the Lower River Shannon (CDM Smith, 2021) focused primarily on fish passage and migratory enhancement. It did not define the hydrological regime required to restore the full ecological function of the >15 km SAC designated river channel between Parteen Regulating Weir

and the tailrace confluence. Improving fish passage is not equivalent to restoring environmental flows capable of achieving Habitats Directive or WFD objectives.”

1472. The main factors affecting the status of the qualifying interests of the SAC are identified in the Conservation Objectives for those features. Whilst there are multiple Conservation Objectives a consistent theme is the need to remove barriers to fish migration e.g. regarding the restoration of favourable conservation status for Sea Lamprey, NIS Appendix K states:

“Three ongoing pressures are identified by the NPWS (2013c) – one impacting on all life stages, one on adult sea lamprey and the third on the juvenile or ammocoete stage. Pollution to surface water is a constant threat to all aquatic organisms. Both adult and ammocoete life stages for lamprey have been shown to be vulnerable to the effects of pollution in Irish systems (D. Byrne & B. Beckett, IFI Blackrock, pers. comm. Referenced in NPWS 2013c). The single largest pressure acting on adult sea lamprey is that of artificial physical barriers to passage for upstream migrating adult fish. The higher concentration of spawning effort downstream of the first major weir on many of Ireland's major sea lamprey rivers indicates a problem with passage (Gargan et al. 2011). Barrier removal or modification to permit upstream migration would permit a greater penetration of river channels by adult fish and a greater dispersal of spawning effort, with consequent increased downstream extent of habitat for ammocoetes to colonise.”

1473. The Conservation Objectives for Alluvial Forest also include:

- Hydrological regime: flooding depth/height of water table

1474. The Applicant noted in the NIS submitted with the SID planning application that the restoration objectives associated with the hydrological regime are described in general terms (e.g. ‘appropriate hydrological regime necessary for maintenance of alluvial vegetation’). Reinstatement of more natural water regimes would involve a combination of partial storage of flood inflows and controlled releases to the Lower River Shannon, reflecting a naturally variable freshet profile.

1475. Consequently, the Applicant considers, contrary to some of the submissions, that there is overlap in the use of an Eflow regime and freshets as a way to implement Hymo 7 under the WFD Programme of Measures and the measures needed to support the conservation objectives of the quality interests of the SAC.

ElAR significant Effects

1476. To the extent that the conclusions of the WSIAR and NIS relate to the ElAR and consideration of the potential for likely significant effects this was included in the assessments reported in ElAR including, but not limited to Chapter 8 (Biodiversity) and Chapter 9 (Water).

Hydrological Modelling of future flows

1477. The modelling assessment that has been undertaken relies on the best available information regarding potential changes in the flow regime to the lower River Shannon, in the form of the recommendations of CDM Smith Report published as part of the Shannon Connectivity Programme.
1478. The Shannon Connectivity Project was set up (prior to the Water Action Plan) as part of Ireland's River Basin Management Plan 2018-21. In 2021 a Final Report from CDM Smith was published: ‘Roadmap for the Lower River Shannon Report 2021. Provision of Expert Advisory Services Regarding Fish Migration in the Lower River Shannon Catchment. Prepared by CDM Smith for the Department of Housing, Local Government and Heritage. This outlined measures to mitigate the barriers at Ardnacrusha and Parteen on the Lower River Shannon and included proposed Eflows and freshets as

described in Hydrological Modelling Report (Annex A of Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) of the EIAR), entitled 'Sensitivity to a Proposed Eflows Regime at Parteen Weir'.

1479. Therefore, although there are no agreed set of ecological recovery objectives for the Lower River Shannon in the absence of a framework being in place, as many of the observers acknowledge, including the Friends of the Irish Environment, the assessment within the EIAR (and the Water Status Impact Assessment Report and Natura Impact Statement, which are reported on in Chapter 25 (Natura Impact Statement) and Chapter 26 (Water Status Impact Assessment (Water Framework Directive)) of this report) has used the available information to determine whether the Proposed Project would impede the implementation of potential measures for the future attainment of environmental objectives for the Lower River Shannon.

1480. This modelling is described in Section 2.3.3 of the Hydrological Modelling Report (Annex A of Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) of the EIAR), entitled 'Sensitivity to a Proposed Eflows Regime at Parteen Weir' and this explains the model runs that were undertaken to consider whether the Proposed Project would affect the proposals set out in the CDM Smith report.

1481. This approach included, as set out in Annex A9.1 OF Appendix A9.1):

"The proposed Eflows regime comprises of a variable baseflow compensation flow and a seasonal series of freshets. The study proposed the following rules to govern the Eflow releases:

a) Minimum baseflow of 10m³/s if net inflow to the combined Lough Derg/Parteen Basin is ≤ 65m³/s (irrespective of season)

b) Raised baseflow of 17m³/s if net inflow to the combined Lough Derg/Parteen Basin is > 65m³/s (irrespective of season)

c) The estimated freshet daily volumes over and above the baseflow, as a function of the baseflow compensation flow, [Defined in Table 2.2 of the report (Annex A9.1)]....

....The following assumptions form the basis of the proposed representation of the Eflows regime:

- i. During periods of spill from the Parteen Basin to the ORS (i.e. when the Ardnacrusha capacity is exceeded) no freshets will be required*
- ii. During drought periods freshets will not be released. The basis of this assumption is that if the Eflow is an attempt to mimic the natural flow regime then artificially releasing standard freshets over this period would seem to be introducing a non-natural characteristic to the flow regime. (Drought in terms of the WSP modelling has been taken to be when net inflows to the combined Lough Derg/Parteen Basin water body are < 20m³/s).*
- iii. The existing provision of a fish pass flow at Ardnacrusha (equivalent to 0.5m³/s) continues to be released.*

1482. Images 2.10 and 2.11 in the Hydrological Modelling Report (in Annex A of Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) in the EIAR) show the difference in the effect of the Proposed Project with and without Eflows. On the basis of this analysis, it was concluded that:

"Image 2.11 shows the proposed Eflows regime sensitivity analysis for the 2018 drought, but with the combined effects of both the proposed WSP abstraction (peak 300Mld) and the projected future 'reasonable worst case' climate change impacts (2080s Lower). As seen previously, whilst the graph shows how the ORS simulated flows differ during normal conditions, there would be the same constant minimum 10m³/s baseflows (and no freshet releases) released during drought conditions, and there are no perceptible changes to the simulated 2018 drought lake levels and drawdown low

point when modelled for the proposed WSP abstraction with climate change scenario, from the inclusion of the proposed Eflows regime.”

1483. Therefore, on the basis that during ‘normal’ flows Eflows or other changes in flow to facilitate fish passage would be facilitated from the water used within power generation and that Eflows / freshets are not ‘natural’ in a drought scenario, it has been demonstrated that the Eflow regime including freshets as defined in the CDM Smith report would not be impeded by the Proposed Project.
1484. This then informs the conclusion of the Water Status Impact Assessment Report submitted with the SID Planning Application.

Conclusion

1485. Based on the only available information regarding the potential implementation of the conservation objectives for the Lower Shannon SAC, or Hymo 7 under the WFD Programme of Measures, insofar as they relate to water levels / flows, the hydrological modelling has demonstrated that the Proposed Project would not impede the implementation, by others, of a more naturalised flow regime, consistent with the relevant Conservation Objectives / Programme of Measures.

11.2.7 Downstream Effects on the River Shannon

1486. Many of the responses refer to the downstream effects of the Proposed Project due to the abstraction of water at Parteen basin. These include:

Unique ID	Name of Individual or Organisation
WSP_SUB_11	Councillor Seán Hartigan
WSP_SUB_23	Michelle Keary
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_68	The Local Authority Waters Programme (LAWPRO)
WSP_SUB_88	Inland Fisheries Ireland (IFI)
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council

1487. This includes for example, the response from LAWPRO which states that the assessments do not appear to adequately demonstrate that abstraction is safe for the Lower Shannon under low-flow conditions because downstream ecological impacts are inferred, not modelled.
1488. Similarly, IFI stated that, while there may be no impact on the lake if levels are maintained within the normal operating band, there may be downstream effects on the environment and hydrology of the tailrace and the old channel. The submission continued that the contingency for this scenario needs to be clarified and mitigation measures defined and built into the operating procedures.

11.2.7.1 Applicant’s Response

1489. The Applicant does not agree that there are downstream effects which have not been assessed. The submissions cover a range of downstream effects including a general downstream effect, a downstream effect on the Old River Shannon, an effect on the tailrace and an effect further downstream, after the

confluence between the Old River Shannon and the tailrace. Each of these are considered further in this section.

General Downstream Effect

1490. Image 2.4 and Image 2.5 within Annex A of Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) in the EIAR, presents the hydrological model simulated Old River Shannon and Ardnacrusha flows, with and without WSP abstraction in place, in the form of flow duration curves. Flow duration curves are a commonly used means within hydrology of presenting flow regime characteristics in the form of the percentage of time a flow is equalled or exceeded. Flow duration curves offer a succinct means of comparing flow regimes derived from long time series of data. Therefore, the flow duration curve provides a comparison of the simulated Old River Shannon and Ardnacrusha flows with and without WSP scenarios for the full 52-year model simulation period (1972-2023). The flow duration curves demonstrate that the impact of the WSP abstraction to the Old River Shannon and Ardnacrusha flow regimes would be barely distinguishable across the 52-year model simulation period.

Downstream Effect on the Old River Shannon

1491. Many of the submissions on the downstream effect on water levels are linked to the misunderstanding that the EIAR submitted does not include an assessment of the effect of the Proposed Project in drought or low flow conditions.
1492. This has been addressed in Sections 11.2.1, 11.2.2, 11.2.3 and 11.2.4 of this report. In summary the hydrological modelling has demonstrated that water levels can be maintained above the required minimum level, whilst meeting the statutory minimum compensation flow during a drought equivalent to the worst drought on record, allowing for future climate change, with the Proposed Project in operation at its peak abstraction, based on historic and current operating principles.
1493. In addition to the drought scenario, the non-drought conditions and flood conditions (as defined in Section 11.2.1.1 of this report) would not result in a change to downstream flow to the Old River Shannon either.
1494. There are responses relevant to the matters addressed in this section, regarding the way the model works, in Section 11.2.9 of this report.

Downstream Effect on the Tailrace

1495. The Applicant does not agree there would be an environmental effect on the tailrace as a result of the Proposed Project. During drought conditions (which is modelled as when there are five consecutive days where inflow is less than 20 m³/s), ESB will cease power generation, but there would still be 0.5m³/s passing through the Ardnacrusha fish pass. The Proposed Project does not alter or change this. Therefore, there would be no effect in a drought conditions scenario.
1496. During flood conditions, ESB can operate Ardnacrusha at full capacity as they have done in the past. The Proposed Project does not alter or change this. Therefore, there would be no effect in a flood conditions scenario on the tailrace.
1497. During normal conditions (non-flood and non-drought), ESB would be facilitating the abstraction of water for the Proposed Project and this would marginally alter the water passing through Ardnacrusha and into the tailrace by approximately 2% only. Therefore, the Proposed Project would have insignificant effects in a normal conditions scenario.

Broader Downstream Effects

1498. Some of the observations have questioned the downstream effect further downstream, including for example in Limerick. The Applicant does not agree that there is a broader downstream effect for the same reasons as set out in Section 11.2.7.1.3 of this report. In addition, the Applicant would note that the Old River Shannon is tidal at its confluence with the Tailrace, therefore the water level beyond this point would not be impacted by changes upstream.

11.2.8 Upstream Effects on the River Shannon

1499. The following submissions raised concern about inadequate assessment of low flow or drought conditions in the EIAR:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_88	Inland Fisheries Ireland (IFI)
WSP_SUB_110	Clare County Council

1500. Specifically the River Shannon Environmental Protection Alliance Company Ltd and Councillor Séamie Morris responses state:

“The NIS identifies Meelick Weir as the upstream hydraulic limit of influence for water level effects associated with abstraction at Parteen Basin. It states that under low and medium flow conditions, free overflow at Meelick Weir prevents downstream lake level changes from influencing upstream river stage.

However, no detailed hydraulic modelling or sensitivity analysis is presented to demonstrate that abstraction-induced changes in lake storage, discharge regulation or hydraulic gradients could not influence upstream river stage or groundwater conditions under low-flow or drought scenarios. In low gradient floodplain systems such as the Shannon Callows, small variations in stage can produce disproportionate changes in lateral inundation extent and groundwater–surface water interaction.”

11.2.8.1 Applicant’s Response

1501. The Applicant considers that the physical barrier presented by Meelick Weir makes it impossible for there to be any effect on upstream levels of storage, particularly in low flow conditions.
1502. Further, the suggestion that the Proposed Project would affect surface water levels that could then affect groundwater water levels is not correct.
1503. With no significant change in the surface water regime, as evidenced by the hydrological modelling reported in this chapter, there would be no alteration in hydraulic gradients and therefore no potential for groundwater level fluctuation.

11.2.9 Operation of the Model / Management of Water Levels

1504. The following submissions raised concern about the ‘hunting routine’ within the hydrological model underpinning the assessment in the EIAR:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd

Unique ID	Name of Individual or Organisation
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_55	Laura Kavanagh

1505. The submission from the River Shannon Environmental Protection Alliance Company Ltd highlights that the hydrological model underpinning the assessment incorporates a “hunting routine” that adjusts the simulated flow of water being used by Ardnacrusha to maintain Lough Derg levels toward the upper end of the Normal Operating Band (NOB) during periods of low inflow which:

“As a result, simulated drought events commence from a storage condition biased toward the upper limit of the operational band (Appendix A9.1 Abstraction Assessment)[this] represents an optimistic starting condition for drought simulations.

In practice, extended drought events are typically preceded by progressive inflow decline and may occur when lake levels are already mid-band or trending downward due to existing abstraction, regulation and climatic variability.

The model therefore evaluates abstraction impacts under conditions that maximise available storage at the onset of drought. The reported additional drawdown of 134 mm (300 MLD) and 65 mm (154 MLD) during the 2018 drought event occurs from the upper NOB rather than from a lower-band starting condition.”

11.2.9.1 Applicant's Response

1506. The Applicant has been clear in the Hydrological Modelling Report that the modelling is based on the Operating Principles that include as stated in Section 3.2.2 of Annex A of Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) in the EIAR:

“A guide rather than a strict rule. It is understood that the ESB does not aim to be at 30.86mAOD at Killaloe but tend to the upper end around 30.80mAOD average Lough Derg (Derg TN) level. This is subject to operational requirements which can mean, when there is sufficient water available, that they utilise the full operating band. It is understood ESB seek to have Derg water levels towards the upper end of the NOB in late spring/ early summer.”

1507. This Operating Principle is based on the trends which are evidenced by measured data over the last 50 years, including in 2018. Therefore, it is correct that the model assumes that those historic trends will continue in the future with water level management prior to a drought in the way that it has done historically.
1508. In the event that water levels are not towards the upper water level at the commencement of a drought this would reduce the water stored in the lake and available for use by the Proposed Project. However, the model also assumes, on a precautionary basis that the Proposed Project would need to abstract 300MLd every day during a drought and this is unlikely. It also assumes the reasonable worst case impact of climate change. Therefore, the Applicant acknowledges that water level may not be at 30.80mAOD but it is also true that the draw down due to the Proposed Project abstraction may not be as large as that modelled.
1509. Ultimately, the Applicant acknowledges that if the water level was not towards the top of the operating band and the demand for water for the Proposed Project was predicted to be high and / or prolonged then the Applicant would need to manage the abstraction appropriately such that it would not impact on minimum required water levels in Parteen Basin. At all times ESB will continue to operate within its normal operating band and comply with its statutory requirements to provide a minimum statutory

compensation flow of 10m³/s to the Old River Shannon. This is specifically provided for in the Draft Water Abstraction Document provided within the SID Planning Application documents.

1510. There were specific matters which built upon this general theme and these are considered in Section 11.4.3.

11.2.10 Potential Impact of the Proposed Project on Resilience of the River Shannon

1511. The following submissions raised concern about the potential impact of the Proposed Project on resilience of water bodies:

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_16	Joanne Skehan
WSP_SUB_17	Joe Mayo
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_72	Carol Killeen

11.2.10.1 Applicant's Response

1512. A number of the submissions raised the resilience of the river in the long term. The Applicant agrees that it is essential that the long term resilience of the Lower River Shannon and the ecosystems its supports must be maintained. However, it does not agree that there is a risk to the long term resilience to the River Shannon. Specifically:

- The effect of the Proposed Project on water levels has been assessed in drought, non-drought and flood conditions as set out in Section 11.2.1.
- The impact of future climate change on the baseline and the effect of the Proposed Project on water levels in this scenario has been assessed as set out in Section 11.2.4.
- The potential for baseline conditions to change to support environmental recovery has been considered, within the limits of the information available as set out in Section 11.2.6.
- The effects on the sustainability of water quality and terrestrial and aquatic ecosystems have been considered and these are addressed in Chapter 12 (Water (General)), Chapter 10 (Biodiversity, Chapter 25 (Natura Impact Statement) and Chapter 26 (Water Status Impact Assessment Report (Water Framework Directive)) of this report.

1513. Similar points were raised by the Prescribed Bodies and are addressed in Section 11.4.5.

11.2.11 Additional Water-Related Mitigation and Monitoring Measures

1514. Many of the submissions that referred to impacts on Lough Derg, Parteen Basin and the River Shannon alluded to the need for either or both of, monitoring of water levels and on the flow forward to the Old River Shannon. The following general observer submissions made clear recommendations that additional water-related mitigation and / or monitoring measures be implemented for the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Maloney
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_27	St. Flannans Fishing Club
WSP_SUB_35	Castleconnell River Association
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_112	Limerick County Council

1515. The general observer submission from John and Georgina Ringrose stated that independent water level monitoring should be implemented at Parteen Basin during construction and initial operation, with regular public reporting. The submission continued that a legally binding drought protocol should also be implemented to pause construction-related abstraction if Lough Derg levels drop below defined thresholds. The submission further stated that enhanced sediment control measures, including double silt curtains and settlement ponds, should be applied, with penalties for any sediment escape in SAC areas.

1516. Castleconnell River Association stated:

“We would need to see definite guarantees and inbuilt fail-safes that the Old River system would not be subject to further deterioration, especially at this current time when the river is finally attempting to recover from a century of ecological damage, via the Shannon Connectivity Project. In other words, at times of drought, we would need to be certain that the 10 cumecs reserved for the Old river Shannon was sacrosanct, and was not in any danger of being further diminished by the WSPem.”

1517. Similarly, Limerick County Council stated:

“Appropriate operational safeguards, adaptive abstraction triggers, and climate-responsive flow protections must be implemented at the project level. It is recommended that clarification is sought on abstraction-related issues at the overall project scale to ensure ecological integrity of the SAC is maintained.”

11.2.11.1 Applicant's Response

1518. The EIAR and the SID Engineering Report include a description of the operation of the Proposed Project and along with the Draft water Abstraction Document (submitted as part of the Planning Application Documents) these confirm that ESB will continue to operate within its normal operating band and comply with its statutory requirements to provide a statutory minimum compensation flow of 10m³/s to the Old River Shannon as it does now, even in drought conditions.

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1519. The Applicant will not control water levels or the management of water levels and therefore is not committing to providing water level monitoring or monitoring the flow to the Old River Shannon.
1520. ESB currently monitors water levels at various locations along the River Shannon, including on Lough Derg (at Portumna and Killaloe) and at Parteen Basin so that it can manage water levels within its normal operating band and there will not be additional water level monitoring introduced as a result of the Proposed Project. This monitoring is currently published by ESB and so is available.
1521. These matters overlap with conditions requested by Prescribed Bodies as set out in Section 11.4.4.

11.3 Response to Specific Issues Raised in General Observer Submissions

11.3.1 Availability of model

1522. The following submission referred to the failure of the Applicant to make the Hydrological Model available:

Unique ID	Name of Individual or Organisation
WSP_SUB_35	Castleconnell River Association

11.3.1.1 Applicant's Response

1523. A response on this matter is provided in Chapter 4 (Consultation and Communication).

11.3.2 Source of water during a drought event

1524. The following general observer submission raised a specific issue relating to the potential impact of the Proposed Project on Lough Derg:

Unique ID	Name of Individual or Organisation
WSP_SUB_22	Michael Reidy

1525. The general observer submission from Michael Reidy stated that the environmental issues associated with Lough Derg are inadequately addressed, and it is clear that the real source of whatever can safely be abstracted in the dry season will be from the store of water in Lough Derg.

11.3.2.1 Applicant's Response

1526. The submission is correct that in the drought scenario Lough Derg and Parteen Basin operate as a single combined lake system. This is described in Annex A (Hydrological Modelling Report) of Appendix A9.1 (Abstraction Assessment) of Chapter 9 (Water) of the EIAR. Once power generation ceases and the combined volume of water needed to meet the statutory minimum outflow to the Old River Shannon and the Proposed Project abstraction exceed the inflow to Lough Derg then there will be a draw down in water levels. This is set out in the Hydrological Modelling Report in Annex A of Appendix A9.1.
1527. In terms of assessing Lough Derg impacts, Annex A Section 4 and Attachment I of the Hydrological Modelling Report provides details of the WFD UKTAG lake level tests that have been undertaken for both Lough Derg and Parteen Basin.
1528. There are general matters relevant to this specific matter, specifically in Section 11.2.2 and also Sections 11.2.1 and 11.2.9.

11.3.3 Availability of Water in a Drought

1529. The following submissions raised concern about the water available during a drought due to the draw down in water levels:

Unique ID	Name of Individual or Organisation
WSP_SUB_10	Christopher Campion
WSP_SUB_22	Michael Reidy
WSP_SUB_35	Castleconnell River Association

1530. The submissions all state that there will not be sufficient water available to meet the peak demand of 300Mld. The different submissions raised a range of different points.

1531. In particular, Michael Reidy highlighted:

- *The flow in the Shannon is extremely variable ranging from 800m³/sec in a flood to less than 10m³/sec during dry periods at the abstraction location. Whereas the flow into Lough Derg may be 19m³/sec in dry periods, the river flow out, is less than 10m³/sec at these times, the difference is accounted for due to evaporation/transpiration.*
- *The fact that the river outflow from the lake is less than 10m³/sec is proven by the fact that in dry periods the electricity generating turbines are shut down the Lake (Lough Derg) is continuously dropping, even if just slightly, to maintain the 10m³/sec compensation flow over the weir to the old course.*
- *Under these circumstances, the following will happen:*
 - *The range of height through which the auxiliary man made ESB lake behind the Ardnacrusha Dam is allowed to fluctuate is approximately 0.45m to preserve embankments, but this is not the operating range, this 0.45m is further reduced the need to reserve about .15m for emergency at the bottom and a further about .15m at the top to allow for the possibility of a flash flood event. When these limits are approached, according to the ESB draft Contract with UE, the ESB will simply instruct UE to shut down their abstraction.*
- *The auxiliary Impoundment lake behind the ESB Dam at Ardnacrusha, has an area of some 3.6 sq. km, If 300,000 m³ per day is abstracted, no additional flow is possible from Lough Derg. The 300,000 abstraction will reduce the level of the area and embankment around the abstraction point, triggering the instruction for shut off by the ESB once the .15m reduction is arrived at. Resistance to flow within the water body, resistance at embankment sides and wind issues, will mean that it will not be a uniform .15m drop across the full water body, it will be at a taper from the abstraction point back towards the inlet to the artificial lake.*
- *In this event there would be two consequences, The inlet level at the top of the artificial lake would not drop and the amount of water available would be at most 3.6 sq. km multiplied by .15m divided by 2 to allow for the tapering effect. At an abstraction rate of 300,000m³/day, this would last five to six days, before the ESB cried halt, to preserve embankments.*
- *The Dry period or drought in 2018 was some 56 days so the shortfall would be some 15 million m³. This level of raw water impoundment would be required to ensure that the proposed 300,000 abstraction was available to serve Dublin.*

1532. Castleconnell River Association state that:

- *A basic calculation shows that at the proposed WSPM extraction rate of 3.82 cumecs (Tobin Report), plus 0.7 fish pass cumecs (Ardnacrusha fish pass minimum), plus ongoing minimum water extracted for Limerick (50k m³ per day via headrace from Parteen basin and Old River Shannon), that Lough Derg and Lr Lough Derg/Parteen basin Normal Operating Bands combined contain a maximum of 19 weeks supply (130 days), assuming that the Operating Band was at full height at the beginning of the drought.*

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1533. Christopher Campion highlighted that during dry spells, when Ardnacrusha already cannot operate, it is impossible to simultaneously satisfy:

- statutory flow requirements for the Old Shannon,
- supply Limerick
- maintain lake levels within ecological acceptable min/max range.
- AND supply the pipeline to Dublin.

1534. The submissions states that based on the 2018 flow date there were 74 days where Ardnacrusha took Zero, and only the 10.5cumecs was going down the old Shannon.

“So for those 74 days, in order to preserve the statutory flow in the old Shannon, the pipeline would not have been able to take any water! Given that we are due droughts every two years this is a huge concern. The EPA already knows there is a risk to flows from abstraction. This extract is from page 12 of the “Technical review of HMWB designation” of March 2022.”

1535. There are specific matters raised by the Prescribed Bodies which relate to this matters as described in Section 11.4.1.

11.3.3.1 Applicant's Response

1536. The Applicant welcomes the detail that the observations have gone into and many of the points match the basis of the hydraulic modelling as set out in Annex A (Hydrological Modelling Report) of Appendix A9.1 (Abstraction Assessment) in Chapter 9 (Water) in the EIAR. The below summarises the response to points raised:

Matter Raised	Response
The range of inflows	The Applicant acknowledges and agrees that there is a wide range of inflows. These have been modelled and inflows have been adjusted to account for future climate change as set out in Section 11.2.4. The low flow conditions represent the scenario where the operation of Proposed Project would result in an additional draw down in water levels compared with the baseline conditions (without the Proposed Project in operation) and therefore, this is the focus of the hydrological modelling.
Difference between inflows and outflows	The Applicant agrees that there are factors which alter outflows compared with inflows. Evaporation is including in the hydrological model (including in the future Climate Change modelling) and this is explained in Annex A (Hydrological Modelling Report) in Appendix A9.1 – (Abstraction Assessment) of Chapter 9 (Water) in the EIAR.
Hydraulic Gradient	The Applicant acknowledges that there would be a hydraulic gradient across Lough Derg and Parteen basin however, this reduces in drought conditions and therefore, as set out in Annex A (Hydrological Modelling Report) in Appendix A9.1 (Abstraction Assessment) the model uses average lake levels.
Lake levels in drought situation and ceasing of electricity generation	The Applicant acknowledges that ESB ceases power generation in low flow conditions in order to maintain the minimum statutory compensation flow and further that to maintain that minimum flow down the Old River Shannon lake levels may be drawn down. This is consistent with the modelling undertaken and the operating principles as set out in Annex A (Hydrological Modelling Report) in Appendix A9.1 (Abstraction Assessment) of Chapter 9 (Water) in the EIAR.
0.45m permitted fluctuation in water levels further reduced by a further 0.15m	The modelling undertaken by the Applicant relies on the Normal Operating Band on Lough Derg and the upper and lower water levels on Parteen basin that ESB maintains as part of normal operations to manage water levels. This is set out in Annex A (Hydrological Modelling Report) in Appendix A9.1 (Abstraction Assessment) of Chapter 9 (Water) in the EIAR. In a drought scenario water levels need to be maintained above the minimum levels. As agreed with ESB no further reduction of 0.15m, in available water storage, is allowed for.
The amount of water available would be at most 3.6 sq. km multiplied by .15m divided by 2 to allow for the tapering effect	The Applicant is unclear on the basis for this assertion however, as a general response the water available for use will be the volume of water above the lower water level that ESB use to manage water levels in Parteen Basin which is 30.00mAOD [32.70mAOD Poolbeg]. It is assumed by the Applicant that power generation ceases as soon as inflows drop below 20m³/s. Based on historic water level records ESB has, where possible, maintained water levels towards the upper end of it normal operating band during potential drought periods in order to maximise the water that is available at Parteen Basin – see further Section 11.2.9.

Matter Raised	Response
Shortfall would be some 15 million m ³	The Applicant does not agree that there is a shortfall. The hydrological modelling has demonstrated that water levels can be maintained above the required minimum level, whilst meeting the statutory minimum compensation flow during a drought equivalent to the worst drought on record, allowing for future climate change, with the Proposed Project in operation at its peak abstraction, based on historic and current operating principles.
Lough Derg and Lr Lough Derg/Parteen basin Normal Operating Bands combined contain a maximum of 19 weeks supply (130 days), assuming that the Operating Band was at full height at the beginning of the drought	The Applicant is unclear on the basis of this calculation. However, as general response the Applicant would refer to the row above in this Table.
Inability to abstract water during a drought	As set out in Section 11.2.2 this is based in a misunderstanding of the impact of the Proposed Project. The SID planning application and all of the assessments reported in the EIAR are based on the water for the abstraction coming from lake storage during a drought event.

11.3.4 Interaction between regulated flows and Abstraction volumes

1537. The following general observer submission raised a specific issue relating to the interaction between regulated flows and abstraction volumes:

Unique ID	Name of Individual or Organisation
WSP_SUB_45	Friends of the Irish Environment

11.3.4.1 Applicant's Response

1538. The Applicant assumes that the reference to regulated flows refers to the statutory compensation flow (rather than navigation levels) and as set out in Sections 11.2.1 – 11.2.3 the hydrological modelling and assessment has taken full account of the existing minimum compensation flow and the potential increase in the compensation flow in the future to account for a more naturalised water flow regime, including low flows during a drought and higher flows at other times.

11.3.5 Test the impact of the abstraction

1539. The following general observer submission raised a specific issue relating to the ability to physically test the effect of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_22	Michael Reidy

1540. The submission from Michael Reidy identified that the additional model did not need to be modelled but could have been tested in real life simply by allowing an extra 300Mld to flow down the Old River Shannon.

11.3.5.1 Applicant's Response

1541. The Applicant does not consider that testing the abstraction in this way would provide a meaningful test of how the abstraction would operate in practice.

11.3.6 Sensitivity Test on Starting Water Level

1542. Building on the matters considered under Section 11.2.9 of this report the following submissions identified the need for additional sensitivity tests within the hydrological modelling:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris

1543. The River Shannon Environmental Protection Alliance Company Ltd and Councillor Séamie Morris identified, in relation to the operating principle that water levels would be close to the top of the upper level used by ESB to manage water levels, at the start of a drought, that sensitivity analysis should have been undertaken to demonstrate how abstraction-induced drawdown would manifest if drought conditions commenced from mid- or lower-band levels within the operational range.

11.3.6.1 Applicant's Response

1544. The Applicant maintains that the modelling has identified the maximum extent of the draw down as a result of the Proposed Project abstraction accounting for future climate change and as set out in Section 11.2.9.1 if there was insufficient capacity in the water stored within the lake to allow this to occur then the abstraction would be curtailed. Therefore, the effect on the littoral zone would not be different from that assessed as the effect would be within the range already assessed. Further, the Applicant would re-iterate that those variations are within the existing range within which ESB manages water currently and therefore, is an effect that could already occur within the existing regime.

11.3.7 How climate change affects the River Shannon Catchment

1545. The following submissions identified specific effects of climate change on the River Shannon catchment as relevant to the modelling and assessment:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris

1546. In particular the submissions stated that in Ireland, a hydrological drought is associated with surface and sub-surface water availability. Hydrological droughts often lag meteorological and agricultural droughts. Depending on catchment characteristics, it takes longer for precipitation deficits to emerge in streamflow, groundwater and reservoir levels. They can also last long after meteorological and agricultural droughts have ended. See <https://www.ria.ie/blog/drought-a-risk-being-overlooked-in-ireland/>

1547. The submission also noted:

“These periods may not involve an absolute absence of rainfall, but rather insufficient precipitation to replenish river systems adequately. From a visual analysis of the simulated lake levels across the hydrological model simulation period (1972 – 2023), it is possible to identify and rank the most impactful drought years in terms of simulated change to level drawdown. The most impactful being 2018, then 1995, followed by other more minor drought events such as 2010, 2006, 1975/76, 2020 and 2022. It must be noted that this ranking is based on particular sensitivity of the Lough Derg and Parteen Basin system which is highly controlled system by the ESB operators. In terms of other definitions of “drought” such as rainfall droughts, soil moisture deficit droughts, river flow droughts, and other storage system droughts, the ranking may well be different. The Lough Derg and Parteen Basin system is particularly tuned to be sensitive to certain types of droughts, whilst other meteorological/ hydrological systems will be tuned to their own particular drought characteristics.”

11.3.7.1 Applicant's Response

1548. As set out in Section 11.2.4 the Applicant has undertaken hydrological modelling using the most reliable climate change predictions and applied a precautionary approach to the future impact of climate change on the existing River Shannon Catchment. The Applicant does not consider that the matters raised by the submissions contradict the approach that has been adopted. The Applicant agrees that 2018 and 1995 were the most impactful and notes the influence of ESB's management of water levels on the effect of a drought.

11.3.8 Compatibility of the Proposed Project with Ardnacrusha Dam

1549. The following general observer submission raised specific concerns that Proposed Project should only be permitted if it is comparable with proposals for Ardnacrusha Dam:

Unique ID	Name of Individual or Organisation
WSP_SUB_47	Garrett O'Neill

1550. The general observer submission from Garrett O'Neill stated that the Proposed Project should only be permitted if it is compatible with the eventual decommissioning of the Ardnacrusha Dam and the constant maintenance of minimum water levels on the upper reaches.

11.3.8.1 Applicant's Response

1551. Decommissioning of Ardnacrusha is not part of the Proposed Project. It is the Applicant's understanding that there is currently no plan or likelihood of Ardnacrusha being decommissioned.

11.3.9 Requirement for a Mechanism to Cap or Reduce Abstraction

1552. The following general observer submission raised specific concerns about there being no statutory mechanism to cap or reduce abstraction during critical low-flow periods:

Unique ID	Name of Individual or Organisation
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_61	Michelle McNamara

1553. This general observer submission from Garrett Reil and Cliona Geary stated that the proposed abstraction is described as a "maximum of 2% of the long-term annual average flow", but there is no statutory mechanism proposed to cap or reduce abstraction during critical low-flow periods. The submission continued that without a legally binding and independently monitored abstraction regime that adjusts in real time to hydrological conditions, the "2%" figure provides no meaningful protection during drought.

1554. Michelle McNamara stated

"There is no explicit statutory condition mandating automatic cessation or reduction of abstraction at objectively defined hydrological trigger points. In the absence of enforceable minimum flow thresholds embedded within planning conditions supported by independent real-time monitoring, transparent public reporting, and meaningful penalties for breach."

11.3.9.1 Applicant's Response

1555. The Applicant does not agree that there is no cap set out in the SID Planning Application or assessed and reported in the EIAR. The application is very clear that the maximum peak abstraction would be

300Mld. This will be controlled by the Abstraction Licence, if granted which consents the operation of the Proposed Project and is discussed further in Chapter 2 – Overarching Matters in Section 2.3.

1556. The submission is correct that the Applicant is seeking to be able to abstract 300Mld in drought scenarios and there is no reduction / further cap set out in the application regarding drought scenarios. As set out in Section 11.2.1, 11.2.2 and 11.2.4 the EIAR reports on an assessment of that peak abstraction in a drought scenario and has demonstrated that water levels can be maintained above the required minimum level, whilst meeting the statutory minimum compensation flow during a drought equivalent to the worst drought on record, allowing for future climate change, with the Proposed Project in operation at its peak abstraction, based on historic and current operating principles.

1557. The Applicant would refer to similar observations made in other submissions raising concerns that the abstraction could be increased in the future. These are set out in Section 6.2.2, Section 6.4.1 and 6.4.2 of Chapter 6 – Proposed Project Description in this Report.

11.3.10 Adequacy of Water-Related Mitigation Measures

1558. The following general observer submissions raised specific concerns relating to the adequacy of water-related mitigation measures:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris

1559. This general observer submissions stated that the mitigation measures proposed by the Applicant are insufficient, lack enforceable guarantees, and do not adequately address these realistic already-occurring climate scenarios.

11.3.10.1 Applicant's Response

1560. The Applicant confirms that the enforceable guarantees that the submissions refers to relate to monitoring of water levels, minimum compensation flows and maximum abstractions which are considered in the responses provided in Sections 11.2.11.1 and 11.4.4.1.

11.3.11 Operational Regime

1561. The following submission raised concerns that the proposed pipeline cannot be left without flow for more than a few weeks, or water would stagnate, creating water quality issues and potential infrastructure damage and therefore, the abstraction must operate continuously even in a drought scenario:

Unique ID	Name of Individual or Organisation
WSP_SUB_50	James Crowley

11.3.11.1 Applicant's Response

1562. The Applicant acknowledges that it is correct that if the abstraction was stopped water in the pipe would eventually stagnate however, there is no intention to leave water stationary within the pipe. The intention is that there would be a minimum flow through the pipeline at all times.

1563. The submission states that this means that the abstraction must operate continuously and the Applicant agrees that continuous operation is preferable and the application is clear on this e.g. Appendix A4.1

(Operation Strategy) refers to 24 hour operation. That does not prevent the abstraction being reduced or if absolutely, necessary stopped if necessary. The reasons for doing this could include matters such as operational maintenance or safety monitoring but would also include that the water levels were approaching the minimum required water level at Parteen Basin, as allowed for within the Draft Water Abstraction Document submitted with the SID Planning Application.

1564. The intent is that through working with ESB the Applicant can avoid the water approaching the minimum level and therefore, the need for the abstraction to be stopped completely.

1565. This response relates to specific matters raised by Prescribed Bodies and considered in Section 11.4.3.

11.3.12 Potential Cumulative Hydrology Impacts and Modelling

1566. The following submissions raised concern about the potential cumulative hydrology impacts of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_17	Joe Mayo
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_65	Samuel Norris

1567. The general observer submission from Joanne Skehan raised concerns regarding cumulative impacts alongside other abstractions.

1568. The general observer submission from Joe Mayo queried how the following have been incorporated into the modelling or accounted for in the EIAR:

1. Existing abstraction licences;
2. Agricultural diffuse nutrient loads;
3. Hydropower release regimes;
4. Peatland legacy drainage impacts; and
5. Downstream transitional water salinity intrusion.

1569. The submission continued that a robust cumulative model would include dynamic hydrograph modelling, Q95/Q99 analysis, rate-of-change modelling, sequential drought scenarios, nutrient concentration modelling, BQE sensitivity testing and recovery trajectory analysis, and that lake-level compliance alone does not demonstrate basin-scale resilience.

1570. The general observer submission from Friends of the Irish Environment stated that abstraction is proposed within an already heavily modified water body without adequate cumulative assessment.

1571. The general observer submission from Lough Derg Mermaids stated that the Proposed Project cannot be assessed in isolation, and the cumulative impacts of existing water abstractions, infrastructure projects, agricultural pressures, and climate change must be fully evaluated.

1572. The general observer submission from Mountshannon Community Council stated that the EIAR fails to adequately assess the cumulative interaction between proposed abstraction, existing ecological

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pressures, climate change and intensified tourism activity associated with Holy Island. The general observer submission from Samuel Norris stated that additional abstraction risks compounding cumulative hydrology impacts upon migratory fish species, wetland connectivity, sediment transport, and habitat resilience.

11.3.12.1 Applicant's Response

1573. The Applicant recognises the importance of the matter raised. The cumulative assessment only considers projects that are certain to come forward and no specific changes have been identified. Therefore, for matters such as nutrient loading from agricultural runoff and drainage from peatlands (noting that these are considered within the water quality model) and the existing hydropower release scheme these would be part of the baseline taken into account. To the extent that there is the potential for changes to the existing flow regime this is considered in Section 11.2.6.

1574. However, in the context of the wider matters raised in this Chapter the applicant acknowledges that this does reflect the practical reality. Insofar as future abstractions could affect the availability of water the Applicant would comment:

- As acknowledged in the submission it is likely that future abstractions would be relatively small compared with the use of water for the Proposed Project which in itself is small compared with the volume of water used by ESB for power generation.
- Any future abstraction would have a licence obtained and assessed in-combination with the Proposed Project and if it was considered to affect the water available in a drought scenario this would be considered in any decision on whether to allow this future abstraction to proceed.
- In non-drought conditions any reduction in water would be met from within the water used by ESB.
- In drought conditions water use for all abstractions would be managed through an adaptive approach as described in Section 11.4.3.
- The Eastern and Midlands Plan as part of the NWRP proposed additional abstraction within the Shannon catchment would equate to ~0.1% only of the average Lough Derg inflow, and less than 1% of the Q95 drought/ low flow.

1575. There are similar matters raised under specific comments from Prescribed Bodies in Section 11.4.6.

11.4 Response to Specific Issues Raised by Prescribed Bodies

11.4.1 Availability of water in a drought

1576. The following submissions raised concern about the water available during a drought due to the draw down in water levels:

Unique ID	Name of Individual or Organisation
WSP_SUB_114	Tipperary County Council

1577. This prescribed body submission stated that, risks to water flows at Killaloe Bridge, particularly in summer months, and stated that the proposed extraction of 3.8- 4.2m³/s could not be guaranteed at any time of year, given climate-change-induced droughts, recent hosepipe bans, and evidence of shifting jet-stream behaviour.

11.4.1.1 Applicant's Response

1578. For the reasons set out in Section 11.2.1 and 11.2.4 the Applicant does not agree with this observation. The hydrological modelling has demonstrated that water levels can be maintained above the required

minimum level, whilst meeting the statutory minimum compensation flow during a drought equivalent to the worst drought on record, allowing for future climate change, with the Proposed Project in operation at its peak abstraction, based on historic and current operating principles.

1579. In addition to the general matters in Sections 11.2.1-11.2.4 there are specific matters discussed in Section 11.3.3 that cover matters related to this response.

11.4.2 Modelling of Potential Fisheries Impacts

1580. The prescribed body submission from IFI raised specific issues relating to the potential impacts of the Proposed Project on fisheries resources and aquatic biodiversity and modelling requirements:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

1581. This prescribed body submission stated that fish and the aquatic environment must be considered at all stages and across all elements of this project to ensure protection of the fisheries resource, and that consultation with IFI must be on-going to allow data exchange and ultimately to maximise the environmental benefits of the project and to secure sustainable water management in the future. The submission continued that it is key that the shifting climate baseline is incorporated into any abstraction regime and accounted for in any modelling of the potential impacts of the Proposed Project.

11.4.2.1 Applicant's Response

1582. With regards to the 'shifting climate baseline' the Applicant has demonstrated that it does not impede a more naturalised flow regime, including allowing for a minimum baseflow during drought / low flow conditions and higher flows at other time, (such as increased Eflows and Freshets as identified in the CDM Smith Report), at set out in Section 11.2.6.1. As set out in same section the Applicant does not consider that it is for the Proposed Project to address the on-going conditions on the Lower River Shannon and these have to be addressed at a programmatic level (i.e. the River Basin management Plan).
1583. The Applicant does not agree that the abstraction is unsustainable and rather, submits that the modelling undertaken has demonstrated that the water level can be maintained above the minimum required water level at Parteen Basin, whilst meeting the statutory minimum compensation flow during a drought equivalent to the worst drought on record, allowing for future climate change, with the Proposed Project in operation at its peak abstraction, based on historic and current operating principles. Further, to repeat the above, it does not impede a potential change in the minimum statutory compensation flow in order to introduce a more naturalised flow regime.

11.4.3 Water Abstraction – Adaptive Management

1584. The following prescribed body submissions raised specific issues in relation to water abstraction:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

1585. The Councils raised concerns around adaptive management and the need to cease abstraction (emphasis added in following paragraphs). These have been set in the context of the wider matters raised.

1586. The prescribed body submission from Limerick County Council stated that, Under the Shannon Fisheries Act, 1935, the ESB is obliged to maintain a flow of at least 10m³/s through the original Shannon channel. This level of flow is an approximate of the summertime dry weather flow. The submission continued that flow through the power plant is a maximum of 400m³/s, and over the decades since the construction of the scheme, the 15km of the original channel has significantly changed with increased siltation, encroachment of vegetation and ecology alteration. The submission further stated that, to ensure that there is no further alteration of the original channel it is essential that at least the 10m³/s is maintained in the original channel.
1587. The submission also raised concerns that the Applicant's presented plan as if water is just simply there for them to take, as if there is always a guaranteed 2% of annual flow, and queried whether continued abstraction during drought scenarios was assessed. The submission stated that Dublin's storage capacity at the TPR is only 75 megalitres, while daily demand already exceeds 630 megalitres, and this means abstraction from Parteen will be continuous (day and night) including during drought and low-flow periods.
1588. The submission also queried the percentage of the flow during drought when demand is highest, and flow is at its lowest (as it'll be taken from old course of the river and most of the water there is at that time is diverted through Ardnacrusha and away from that old course) and stated that abstraction regimes may need adaptive management and not fixed rates. The submission also raised concerns that increasing abstraction during low flows risks prolonging artificial low water levels downstream.
1589. The submission also raised concerns that the planning application does not assess how the proposed abstraction and the Fish Passage Project, in-combination, could exceed available water volumes during drought.
1590. The prescribed body submission from Tipperary County Council stated that, of particular concern is the abstraction which is identified in the EIAR as approximately 2% of the long-term annual average flow through Parteen Basin. The submission further stated that modelling has also utilised annual mean values which overlook specific times of low flow and drought, and as a result, the 2% draw down may not always be correct. The submission continued that, should permission be considered, ACP must ensure that operational abstraction from the Parteen Basin and impacts on water levels and ecology are comprehensively considered and determined not to adversely or negatively impact on water levels and dependent ecosystems
1591. The prescribed body submission from Tipperary County Council also stated that, at the public information event in Killaloe (12 February 2026), the Applicant were unable to confirm whether abstraction would cease during drought conditions, and no credible or enforceable drought-management strategy has been provided.

11.4.3.1 Applicant's Response

1592. The Applicant highlights that the Councils have been included in the general responses on matters related to:
- Maintaining a minimum flow to the Old River Shannon – Section 11.2.3
 - 2% average flow – Section 11.2.2
 - Assessment of drought periods – Section 11.2.1
 - Downstream effects – Section 11.2.7
 - Fish pass projects – Section 11.2.6

1593. In addition, the matter of continuous abstraction is addressed in the section on specific matters, Section 11.3.12 and adaptive management is discussed under Section 11.2.9.

1594. With regards to the three specific matters raised the Applicant provides the following response:

Matter Raised	Response
Adaptive Management	The Applicant fully intends to adopt an adaptive approach to the volume of water abstracted and it will not simply be a fixed rate. This will include actively managing the volume of water abstracted during a drought event. The application demonstrates, based on the hydrological modelling, that the water level can be maintained above its current minimum required water level at Parteen Basin, whilst meeting the statutory minimum compensation flow of 10m³/s during a drought equivalent to the worst drought on record, allowing for future climate change, with the Proposed Project in operation at its maximum abstraction, based on historic and current operating principles. ESB will at all times comply with its statutory obligations and dam safety requirements. In an extreme scenario where water levels are at risk of approaching minimum required levels at Parteen abstraction will need to be curtailed. However, an adaptive management approach will be adopted by the Applicant such as curtailing the proposed abstraction depending on the conditions that exist in any one particular drought including for example, the starting water level (See further Section 11.2.9), the expected duration of the drought and the demand for drinking water. The required minimum water level and statutory minimum compensation flow will be maintained as it is currently.
Stopping abstraction	The Applicant acknowledges that if the water level was not towards the top of the operating band and the demand for water for the Proposed Project was predicted to be high and / or prolonged then the Applicant would be required to control the abstraction such that the 10m³/s minimum statutory compensation flow to the Old River Shannon and the minimum required water level at Parteen Basin are maintained at all times. This is specifically provided for in the Draft Water Abstraction Document provided within the SID Planning Application documents.
Enforceable drought strategy	The hydrological modelling has demonstrated that water levels can be maintained above the required minimum level, whilst meeting the statutory minimum compensation flow during a drought equivalent to the worst drought on record, allowing for future climate change, with the Proposed Project in operation at its peak abstraction, based on historic and current operating principles. This is sufficient for the assessment of potential effects in the EIAR and therefore, the SID Planning Application. The Abstraction Licence, if granted, will condition the operation of the Proposed project.

11.4.4 Recommended Planning Conditions

1595. The following prescribed body submissions recommended water-related conditions to be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_98	The Heritage Council
WSP_SUB_114	Tipperary County Council

1596. The prescribed body submission from The Heritage Council recommended that a condition be attached to any grant of planning to ensure that monitoring of the water levels is undertaken, so that in times of drought the necessary action can be taken in terms of cessation of abstraction activities.

1597. This prescribed body submission from Tipperary County Council requested that, given the sensitivity of Lough Derg, the Parteen Basin, and the River Shannon, the Council stresses that abstraction rates must not exceed those modelled in the EIAR and must be actively curtailed during periods, and that the abstraction rate must not exceed 2% of available flow through the Parteen Basin at any given time, with abstraction to be managed accordingly. The submission further stated that abstraction levels are to be managed to ensure the minimum statutory compensation of 10m³/s is passed through Parteen Weir into the Old Shannon River. The submission continued that publicly accessible monitoring records

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should be maintained to provide transparency regarding abstraction volumes and compliance with statutory compensation flows to the Old Shannon River.

11.4.4.1 Applicant's Response

1598. These responses overlap with and are consistent with the matters raised in Section 11.2.11. The Applicant does agree with these proposed conditions for the reasons set out in Section 11.2.11.1. The operation of the Proposed Project and specifically the abstraction will be consented under the Abstraction Licence that will be required and is discussed further in Chapter 2 – Overarching Matters. The Applicant will comply with all consent conditions imposed on the Proposed Project, including, but not limited to, the SID Planning Application and the Abstraction Licence, if granted, including as applicable, any monitoring and reporting conditions.

1599. Regarding the monitoring of the maximum abstraction that is addressed in Section 11.3.10.

11.4.5 Assimilative Capacity for the Lower Shannon

1600. The prescribed body submission from Tipperary County Council raised specific issues in relation to assimilative capacity for the Lower Shannon:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

1601. This prescribed body submission stated that the assimilative capacity of the Proposed Project for the Lower Shannon is not fully addressed with regulatory consultees (IFI and NPWS) identifying the need to assess the downstream dilution capacity. The submission continued that reduced flows scenarios may increase pollutant concentrations and can affect water quality locally which is not fully quantified. The submission further stated that environmental flow considerations are tested at a high level (sensitivity analysis), but they are not clearly used to constrain abstraction under stress scenarios, and as such, the EIAR would benefit from additional information on:

- Likely effects on water levels and flows downstream of the abstraction, including in tidal reaches downstream of Ardnacrusha, particularly in periods of low flow, in context of diurnal tidal regime and assessment of significance of same for hydrological regime including water quality and interactions with biodiversity;
- Likely effects of proposed abstraction on frequency of occurrences and durations of low water levels in Parteen Basin and Lough Derg and assessment of significance of same for the hydrological regime including water quality and interactions with biodiversity; and
- Operational procedures including: criteria for reduction / cessation of abstraction during and after periods of low flow; and relationships with and dependencies on, ESB operational procedures and required EPA licencing.

11.4.5.1 Applicant's Response

1602. The Applicant offers the following responses on the points raised:

Matter Raised	Response
Downstream effects	See the general response in Section 11.2.7. This response suggests the Council considers that there is an impact within the tidal extent of the River Shannon, the Applicant does not agree given: - The reduction occurs in Non-drought conditions as described in Section 11.2.7. - The volume of water 3.47m³/s is not sufficient to make a material difference in water levels over the geographical extent of the river that is suggested. - The change is within the range that ESB operates and manages existing water levels.
Frequency and duration of low flow events	See general response in Section 11.2.5.
Reduction / cessation of abstraction	See response in Section 11.4.3
Relationship with and dependency on ESB operating procedures	The Proposed Project is reliant on ESB continuing to operate within its normal operating band as set out in the Hydrological Modelling report (Annex A in Appendix A9.1 (Abstraction Assessment) in the EIAR). These are defined as 'operating principles' and included in the model. Relevant matters that arise from this are addressed in Section 11.2.9 and 11.4.3 of this Chapter.
Relationship with and dependency on ESB abstraction licence	The Proposed Project is reliant on ESB continuing to operate within its normal operating band and this requires an abstraction licence to be obtained under the new licensing regime. This is considered further in Chapter 2 - Overarching Matters of this Report.

1603. Similar specific matters were raised in other submissions and are considered in Section 11.2.10.

11.4.6 Cumulative Effects in the Hydrological Model

1604. The prescribed body submission from the NPWS raised specific issues relating to cumulative effects in the hydrological model:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) - Development Applications Unit (DAU)

1605. This prescribed body submission stated that there may be an important but potentially overlooked issue in the AA and EIAR regarding how cumulative upstream changes (such as increased water abstractions or drainage) could affect model predictions. It presents a simplified balance of factors influencing water levels, noting both increases (e.g. proposed abstraction, upstream abstractions, drainage) and decreases (e.g. compensation flows at Ardnacrusha, catchment storage). Drawing on regional water resource plans, it highlights that proposed additional abstractions for towns such as Athlone, Ballinasloe, and Carrick-on-Shannon are relatively small in isolation but could still contribute cumulatively (around 3.7% of the Proposed Parteen abstraction). The submission raises concern that such combined effects, including potential future demands, should be properly considered in the assessment.

11.4.6.1 Applicant's Response

1606. The Applicant recognises the importance of the matter raised. The cumulative assessment has been carried in accordance with guidance and best practice. It has considered certain known projects. Insofar as future abstractions could affect the availability of water the Applicant would comment:

- As acknowledged in the submission it is likely that future abstractions would be relatively small compared with the use of water for the Proposed Project which in itself is small compared with the volume of water used by ESB for power generation.

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- Any future abstraction would have a licence obtained and assessed in-combination with the Proposed Project and if it was considered to affect the water available in a drought scenario this would be considered in any decision on whether to allow this future abstraction to proceed.
- In non-drought conditions any reduction in water would be met from within the water used by ESB.
- In drought conditions water use for all abstractions would be managed through an adaptive approach as described in Section 11.4.3.
- The Eastern and Midlands Plan as part of the NWRP proposed additional abstraction within the Shannon catchment would equate to ~0.1% only of the average Lough Derg inflow, and less than 1% of the Q95 drought/ low flow.

1607. Similar specific matters were raised in other submissions and are considered in Section 11.3.12.

11.4.7 Verification of maximum water abstraction rates

1608. The prescribed body submission from the NPWS raised a specific issue on the verification of maximum water abstraction rate in relation to effects of severe drought low water level duration in the Lower River Shannon SAC:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

1609. This prescribed body submission has requested that further information is provided in relation to the flowmeter on the RWRM that will measure the abstraction of water. The submission queries such as how precisely it can be relied on, will it be sealed and will prescribed authorities have access to inspect it. The Prescribed Body states that it clearly a requirement for the reliability of the predictions of no adverse effects on water levels that the maximum abstraction is not exceeded during severe droughts.

11.4.7.1 Applicant's Response

1610. The Applicant notes that if a licence is granted for a peak daily abstraction of 300Mld the Applicant is legally not permitted to abstract more than this and therefore, as would be expected, there are no circumstances where this would be the case.

1611. The operation of the Proposed Project and specifically the abstraction will be consented under the Abstraction Licence that will be required and is discussed further in Chapter 2 – Overarching Matters. The Applicant will comply with all conditions imposed on that licence, if granted, including any monitoring and reporting conditions.

12. Water (General)

12.1 Overview

1612. Fifty-five of the 114 submissions raised the issue of Water in relation to the Proposed Project.
1613. An assessment of Water was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 9 - Water. The assessment complied with the relevant legislation, standards and guidance as set out in that chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
1614. This Report and its supporting appendices comprise the response of the Applicant to the issues raised regarding Water. The responses in this Chapter are related to those in the following Chapters of this report which should be read alongside this Chapter:
- Chapter 2 – Overarching Matters;
 - Chapter 6 – Proposed Project Description;
 - Chapter 7 – Construction and Commissioning; and
 - Chapter 11 – Water (Hydrological Modelling and Water Levels).
1615. Cross references to these other relevant Chapters have been included where relevant to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
1616. The majority of responses raised in relation to Water related to flood risk and potential impacts due to washouts, watercourse crossings or pollution. Other issues raised included the potential for algae growth and the adequacy of mitigation measures.
1617. This chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding Water;
 - Specific matters raised in general observer submissions regarding Water; and
 - Specific matters raised by Prescribed Bodies regarding Water.
1618. Within these sections there is some overlap and inter-relationship between the matters raised and where relevant cross references have been included to link any General and Specific Matter responses.
1619. A hydrological modelling and water level chapter (Chapter 11 – Water (Hydrological Modelling and Water Levels)) has been provided separately to this Water (General) Chapter. This is to allow the matters raised within the submissions that are specific to the modelling and the assessment of water levels due to the proposed abstraction to be addressed altogether. Therefore, this chapter only addresses these at a high level in Section 12.2.1 and cross refers to Chapter 11 - Water (Hydrological modelling and Water Levels).

12.2 Response to General Issues Raised

12.2.1 Potential Impact of the Proposed Project on Water

1620. The following submissions raised concern about the potential general impact of the Proposed Project on water:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_23	Michelle Keary
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_40	Diarmuid O' Crowley
WSP_SUB_54	Killaloe Ballina District Angler's
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_63	Port Omna Beo
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_66	Sarah Conroy
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_70	Tom and Mary Scully
WSP_SUB_72	Carol Killeen
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_92	Judith Kohler
WSP_SUB_93	Michael McKeogh
WSP_SUB_114	Tipperary County Council

12.2.1.1 Applicant's Response

1621. A large number of the submissions raised concerns on the impact of the Proposed Project on the water environment and detailed responses have been provided in this Chapter and in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report where specific queries were raised, such as the effects during low flows / drought conditions. Some responses such as those from Danny Janssens, Gordon and Leslie Beattie, Judith Kohler simply highlighted the impact of the Proposed Project in a general sense:

“The proposed pipeline development will have significant adverse effects on the environment including fauna and flora, soil, water, air, climate and biodiversity”.

1622. Similarly submissions from, for example, Caroline and Mark Elridge, Yvonne Moloney, Éadaoin Kiely and Darren Kirwan, Eva Killeen, John and Georgina Ringrose, Michelle Keary, Pamela Quirke O'Meara, Stefan and Olivia Hahne, William Lawrence Hodges, the combined response from Councillor Fiona

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Bonfield, Alan Kelly TD and Councillor Louise Morgan-Walsh, Portumna and District Angling and Boating Association and Carol Killeen all state that:

“Potential impacts on water quality and river resilience are significant, particularly during low flows, which could affect both biodiversity and downstream communities”

1623. In response, the Applicant acknowledges the matters raised and would highlight the work that has been done to avoid, reduce and mitigate the environmental effects of the Proposed Project including on the water environment as reported in the EIAR and other documents submitted in the SID Planning Application. However, it is not correct that there would be significant residual environmental effects on water.

1624. A full assessment of the environmental effects of the Proposed Project has been reported in the EIAR including specifically in Chapter 9 – Water, and this includes in Section 9.6 of Chapter 9 a summary of the residual environmental effects, after the application of mitigation of the Proposed Project. This concluded:

“Following implementation of mitigation and control measures, potential significant effects identified in Section 9.4 [of Chapter 9] would be reduced to Not Significant residual effects. A record of all residual effects for the water environment assessment is included in Appendix A9.1 (Abstraction Assessment), Appendix A9.2 (Pipeline Assessment) and Appendix A9.3 (Non-linear Principal Infrastructure and 38 kV Uprate Works).”

1625. A full suite of mitigation measures has been proposed to avoid or reduce the effects on the water environment and are set out in the Surface Water Management Plan, which is Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan.

1626. The Applicant has provided responses throughout this chapter addressing specific elements of the water assessment, such as water quality and flood risk. Responses in relation to the abstraction, hydrological modelling and water levels in Parteen Basin and Lough Derg are provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

12.2.2 Compliance of the Proposed Project with Water-Related Legislation

1627. The following submissions raised concerns about the compliance of the Proposed Project with legislation relating to the water environment, including the Water Framework Directive:

Unique ID	Name of Individual or Organisation
WSP_SUB_02	Fight the Shannon Pipeline
WSP_SUB_16	Joanne Skehan
WSP_SUB_17	Joe Mayo
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_61	Michelle McNamara
WSP_SUB_65	Samuel Norris

Unique ID	Name of Individual or Organisation
WSP_SUB_66	Sarah Conroy
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

12.2.2.1 Applicant's Response

1628. Several submissions have raised concerns regarding compliance with the Water Framework Directive (WFD), particularly in relation to low-flow conditions, cumulative pressures and the regulated nature of the Shannon system. The Applicant does not agree with these submissions and confirms that a full assessment of WFD compliance has been undertaken and reported in the WSIAR submitted as part of the SID Planning Application. The WSIAR demonstrates that the Proposed project is compliant with WFD requirements.
1629. Article 4 of the WFD sets binding objectives, including preventing deterioration and protecting the achievement of Good Ecological Status (GES) or Good Ecological Potential (GEP). These obligations must guide project authorisation, but they do not require absolute certainty or the elimination of all hypothetical ecological risk. The CJEU has confirmed that the correct test is whether, on the basis of objective information, the regulated project will not cause deterioration in any quality element or status class, nor undermine WFD objectives. This requires a precautionary, evidence-based assessment, not a zero-risk standard. Article 4 of the WFD requires that new projects: (i) do not cause deterioration in the status of any surface water or groundwater body; (ii) do not compromise the achievement of good status or good ecological potential; (iii) do not undermine the objectives for Protected Areas, including Natura 2000 sites; and (v) reduce pollution from priority substances, and cease or phase out emissions of priority hazardous substances; and prevent or limit input to groundwater, including prevent direct discharges to groundwater. The WSIAR addresses these requirements directly.
1630. The WSIAR satisfies this requirement through a comprehensive assessment of likely impacts, followed by evaluation against the Programme of Measures, cumulative effects and the relevant WFD tests. Article 4 requires a reasoned, evidence-supported conclusion, together with enforceable mechanisms to prevent deterioration if conditions change. The WSIAR achieves this through its impact assessment, regulatory controls and operational safeguards.
1631. On this basis, the assessment concludes that the Proposed Project can operate without causing deterioration or preventing the achievement of environmental or Protected Area objectives and is therefore consistent with the requirements of Article 4 (see Section 5.4 of the WSIAR). Further detail on WFD based submissions and the Applicant's response are contained in Chapter 26 - Water Status Impact Assessment Report (Water Framework Directive) of this report.
1632. In response to the Tipperary County Council submission, the assertion that the Proposed Project is at risk of non-compliance with Directive (EU) 2020/2184 on the quality of water intended for human consumption is not substantiated. Directive (EU) 2020/2184 regulates drinking water quality at the point of supply to consumers, not abstraction in isolation. Compliance is assessed at the level of the water supply system, including treatment, distribution and operational management, and is delivered through a risk-based approach aligned with Water Safety Plan principles.
1633. The Proposed Project has been designed and assessed within this framework. Raw water abstracted from the Shannon will be fully treated to potable standard, with abstraction subject to enforceable licensing conditions, environmental-flow controls and adaptive management measures. These

mechanisms ensure that any variability in raw water quality or availability is identified, managed and mitigated before water is supplied for consumption.

1634. Nothing in Directive (EU) 2020/2184 requires demonstration that abstraction poses no conceivable risk in isolation. The Directive requires that risks to human health are adequately controlled, such that parametric values and public health objectives are met at the point of supply. There is no evidence that the Proposed Project would compromise treatment performance or the ability of the water supplier to comply with drinking water standards.
1635. Accordingly, the allegation of non-compliance conflates abstraction effects with drinking water quality regulation and does not reflect the scope or requirements of Directive (EU) 2020/2184. When assessed against its correct legal test, the Proposed Project complies with the Directive.
1636. The Applicant does not agree that the Proposed Project is not compliant with other water related legislation mentioned in the submissions, including:
- The Water Environment (Abstraction and Associated Impoundment) Act 2022;
 - European Communities (Water Policy) Regulations 2003 (S.I No 722 of 2003);
 - European Communities Environmental Objectives Surface Waters Regulations 2009 (S.I No 272 of 2009); and
 - Local Government (Water Pollution) Acts 1977 and 1990.
1637. The submissions do not set out how the Proposed Project is not compliant with the above legislation. As set out in the EIAR, the assessment has been undertaken in accordance with relevant legislation.
1638. In relation to the Water Environment (Abstraction and Associated Impoundment) Act 2022, a response in relation to the water abstraction license is provided in Chapter 2 – Overarching Matters of this report.

12.2.3 Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth

1639. The following submissions raised concern about the potential for the reduction of water levels resulting from the proposed abstraction to result in increased pollution concentration and the promotion growth of toxic algae:

Unique ID	Name of Individual or Organisation
WSP_SUB_10	Christopher Campion
WSP_SUB_14	Eva Killeen
WSP_SUB_15	Fergal Hayes
WSP_SUB_17	Joe Mayo
WSP_SUB_20	Kieran O'Connor
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_27	St. Flannan's Fishing Club
WSP_SUB_29	Suzanne Noble
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_37	Councillor Dr. Phyll Bugler

Unique ID	Name of Individual or Organisation
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_39	Derg Open Water Swim School and the swim group “Lively Wimmin Swimmin”
WSP_SUB_40	Diarmuid O’Crowley
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_57	Lucy Murphy
WSP_SUB_58	McKeogh's Hardware Ltd.
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_63	Port Omna Beo
WSP_SUB_68	The Local Authority Waters Programme (LAWPRO)
WSP_SUB_72	Carol Killeen

12.2.3.1 Applicant’s Response

1640. The Applicant confirms that a full assessment of the effect of the Proposed Project abstraction has been undertaken including an assessment of the impact on water quality and is reported in the EIAR.
1641. Algae blooms have been reported on Lough Derg (Derg TN), as recently as September 2025, as a result of blue-green algae (cyanobacteria). Occurring in specific temperature, light, nutrient, wind speed and direction conditions, the algae can evolve to produce toxins from a non-toxic state. Blue-green algae develop populations relatively slowly during the year, appearing in low numbers in late spring before evolving during the summer and peaking in early autumn.
1642. To assess the potential impact of the Proposed Project, the Applicant commissioned a specialist water quality modelling study by MarCon Computations International. This study involved building a three-dimensional hydrodynamic and water quality model, informed by eight years of data collection, including automatic monitoring stations, weather data, and bathymetric surveys, to validate the model predictions. The water quality modelling focused on drought conditions, specifically a drought equivalent to the one experienced in 2018 which is the most impactful on record for the Shannon Catchment because this is the scenario in which the implementation of the Proposed Project would result in a change in water levels compared with the baseline (without the Proposed Project in place) and further because it is drought conditions when the risk to water quality is highest. The model tested a range of scenarios, including peak abstraction and future climate change and examined key risks such as algal blooms and pollutant concentration.
1643. Findings from the water quality modelling, which are reported in EIAR Appendix A9.1 (Abstraction Assessment), as well as Annex B of Appendix A9.1 (Water Quality Modelling Report) show that across all modelled scenarios, which included climate change, predicted changes in water quality were minimal and within the natural variability of the system. The modelling indicates that the change in water quality introduced by the operation of the Proposed Project i.e. the draw down in water levels in a drought event, would have a neutral effect on water quality in Lough Derg and Parteen Basin compared with the baseline water quality conditions in a drought (i.e. without the Proposed Project in operation). Given the neutral effect on water quality, which includes nitrate and orthophosphate levels (which are key nutrients in the formation of algal bloom), the Proposed Project would not cause occurrence or worsen the occurrence of harmful algal blooms.

12.2.4 Potential Impact of Leakages during the Operational Phase on Water

1644. The following submission raised concerns about the potential impact of leakages on water from the BPT, if they occur during the Operational Phase of Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_76	Melissa Anne Kenny

12.2.4.1 Applicant's Response

1645. As set out in Section 10.4.3 of EIAR Chapter 10, there would be no likely significant effect from contamination during the Operational Phase of the Proposed Project. Section 4.8.11 of EIAR Chapter 4 (Proposed Project Description) sets out operational measures for preventing leakage from the BPT. In normal operation the control system would keep the level in the BPT constant. Should this level vary outside the pre-set control band, the operators would be notified by alarms, and a sequence of controlled shutdowns would occur to prevent the levels rising further. Typically, only the two outermost cells will be active. An overflow, if one occurs, would be to the middle cell within the BPT. The controls at the BPT would ensure that the system would shut down should an overflow to the middle cell occur. Similarly, in the event that the signal to/from the BPT was lost then the system would shut down as a safety precaution.
1646. In the event that the high lift pumps at the WTP trip, for whatever reason, the FCV near the TPR would signal to close. During this controlled shut-down, the BPT would play an integral part by ensuring that, in particular, the pipeline downstream of the BPT is always fully charged with water. This is important to avoid air entrainment, i.e. the creation of pockets of air in the Treated Water Pipeline, which would otherwise have to be bled and sterilised before they could be brought back into a full level of service.
1647. Coated steel has been selected as the pipeline material as catastrophic failures on steel pipelines are extremely rare. In line with the Operational Strategy (EIAR Appendix A4.1), in the unlikely event that a leakage incident should occur along the pipeline, remotely operated automated Line Valves will be closed in order to limit the amount of water that can discharge from the affected section of pipe. If required, the section of pipe can then be drained down, water will be de-chlorinated and there will be a controlled discharge to nearby watercourses, at flow rates appropriate to their capacity. Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur. Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners is minimised. Pre-emptive monitoring and inspections will be carried out routinely to allow the Applicant to identify and address any potential issues before they arise.
1648. There would be chemicals stored at the BPT for chlorine dosing. All chemicals will be stored in secure areas inside buildings within a bund area. Level monitoring will be used to detect any sudden change in the volume stored in each tank and detect a leak or damage to containers. Any sudden change in tank volume will be alarmed and this would prevent an extensive release of chemicals into the environment. As a result, it would be very unlikely that there would be an incident.
1649. Given these embedded design measures and procedures, the risk of leakages or accidental release of water or chemicals from the BPT or pipeline is considered to be as low as reasonably practicable, as set out in EIAR Chapter 20 (Risk of Major Accidents and/or Disasters).

12.2.5 Flood Risk

1650. The general observer submission from James Crowley raised the issue of flood risk assessment at the Raw Water Intake. The submission states that the risk that floods pose to the Parteen intake and along the pipeline route should be rigorously evaluated, incorporating climate change projections:

Unique ID	Name of Individual or Organisation
WSP_SUB_50	James Crowley

12.2.5.1 Applicant's Response

1651. The Applicant agrees that the risk of flooding must be assessed and, consequently, has undertaken a Flood Risk Assessment (FRA) for the Proposed Project, which is reported in Appendix A9.4 of the EIAR. The FRA has been prepared in accordance with best practice and principally considers the flood risk to, and arising from, the infrastructure sites.

1652. The pipeline has also been considered in the FRA; however, it was concluded that during normal operation, the flood risk impact to and arising from the Raw Water Rising Mains (RWRMs) and Treated Water Pipeline would be neutral. This is because the pipelines:

- Comprise sealed pipeline sections that would be buried below ground and their operation would not be affected by overland (fluvial/pluvial) or groundwater flooding;
- Do not cross any watercourses as a 'pipe bridge' or similar above the ground surface. Any watercourse crossings that are made would be laid beneath the watercourse bed level, so they would not impact in-channel or floodplain flow conveyance;
- Do not require permanent changes in ground level to install any of the sections, and following completion, neither the RWRMs or the Treated Water Pipelines would have any impact on existing overland flood conveyance routes or in areas which are currently prone to the accumulation of ground or pluvial flood water; and
- Would be buried a minimum of 1.2m below the ground surface and would not form an impenetrable barrier to flows between ground surface and underlying bedrock, enabling subsurface and groundwater flows to pass by the sections. However, additional local drainage measures would be applied, as necessary, where there is a perceived risk of impaired drainage from installation of the pipeline sections.

1653. Stage 1 to Stage 3 Flood Risk Assessment (as outlined in the Flood Risk Management Guidelines) for the normal operation of the RWRMs and Treated Water Pipeline was therefore not required.

1654. The FRA includes consideration of climate change. The FRA includes modelling for the Mid-Range Future Scenario (MRFS), which includes for an additional 20% river flows and extreme rainfall depths, and a 0.5m rise in sea levels; and the High-End Future Scenario (HEFS), which includes for an additional 30% river flows and extreme rainfall depths, and 1m increase in sea level. These levels are set by the Office of Public Works (OPW). The MRFS scenario is intended to represent the 'likely' future scenario based on a range of forecasts. The HEFS represents a more extreme forecast that is at the upper end of accepted projections. The design of the Proposed Project, and flood risk mitigation measures, are based on HEFS scenario on a precautionary basis.

1655. In relation to the RWI&PS, the effects of future climate change on water levels in Parteen Basin were assessed as part of the Shannon Catchment Flood Risk Assessment and Management Study. While future climate change would result in an increase in river flows, this will not give rise to an increase in the risk of fluvial flooding to the RWI&PS, given the effect of the Ardnacrusha Generating Station in controlling water levels (see Section 4.2 of the FRA (EIAR Appendix A9.4)). In addition, all elements of the RWI&PS that are adjacent to Parteen Basin are designed to be water compatible and so will not be

impacted by flooding, and most of the RWI&PS, including all flood vulnerable infrastructure (e.g. the electricity substation and power distribution building), will be located on the raised ground which covers much of the site so that operation of the abstraction is not affected by flooding. The risk of fluvial flooding to the RWI&PS site is therefore considered to be low. It was also concluded that there would not be an increase in the flood risk over the adjacent areas due to the RWI&PS.

1656. The FRA identified a potential flood risk in relation to the RWI&PS access road. However, the proposed culvert under the RWI&PS access road has been designed with sufficient capacity to convey the design flow and the minimum recommended road level above it has been calculated to ensure that there is enough clearance between the water level and the road profile, with consideration of climate change. The risk of fluvial flooding to the RWI&PS access road is therefore considered to be low. It was also concluded that there would not be an increase in the flood risk over the adjacent areas due to the RWI&PS access road.

12.3 Response to Specific Issues Raised in General Observer Submissions

12.3.1 Potential Water Impact of New Stream Crossing on Landowner Lands

1657. The general observer submission from John Quinn and Sandra Frayne raised a specific issue relating to the potential water quality impact of the new proposed stream crossing required on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_103	John Quinn and Sandra Frayne

1658. The general observer submission from John Quinn and Sandra Frayne raised concerns that the new proposed stream crossing on their land would have a negative impact on the water quality of the stream.

12.3.1.1 Applicant's Response

1659. The stream in question is the Lyreen_010 (crossing ID WCX070), which would be an open-cut crossing, and was assessed in Section 7.5 of EIAR Appendix A9.2 – Pipeline Assessment (as well as in Section 1.1.1 and 1.1.2 Appendix A9.2 Annex A). The assessment identified the potential for pre-mitigation significant effects during the Construction Phase. However, with implementation of standard, best practice mitigation measures these effects were reduced to Not Significant.

1660. The standard mitigation that will be implemented to reduce the significance of effects during the Construction Phase is outlined in Section 9.5.1.1 of EIAR Chapter 9 - Water: The measures which will be implemented include:

- Control of silt-laden water runoff and dewatering of silt water;
- Appropriate stockpiling of material;
- Appropriate storage of materials away from water bodies;
- Containment of fuel tanks, drums, mobile bowzers and bunds;
- Appropriate usage of vehicles and plant including when driving and refuelling;
- Control measures when working in or near watercourses; and
- Avoiding use of concrete in design where possible; and using self-contained batching plant on-site with adequate cleaning process defined.

1661. These standard mitigation measures follow industry best practice and will be implemented in accordance with the CEMP. This control methodology has been proven to work on other similar projects

and is utilised across the construction industry. Measures have been selected to ensure suitability for the Proposed Project and the types of construction methods that would be employed.

1662. In addition to this standard mitigation, Table 9.14 of Section 9.5.1.2 of EIAR Chapter 9 -Water also outlines site-specific mitigation measures for the crossing of water bodies:

‘W-SC4 – Open Cut Crossings: In-stream working will be carried out in accordance with guidelines issued by IFI (IFI 2016). This will apply to the watercourse crossings; pipeline trench works near to watercourses; and the construction of permanent outfalls for the washouts. Prior to construction, the appointed Contractors will discuss the specific requirements for any discharges with the relevant authorities. The approach to managing surface water during the construction of the Treated Water Pipelines in all peat areas will follow the standards set by the EPA for Bord na Móna.

W-SC5 - Over Pumping: For open cut crossings, where over-pumping is required, the watercourse will be diverted around the works by ‘over-pumping’. The potential issues relating to a build-up of silt or silt-laden dewatering fluids will be addressed through the use of settlement tanks at each crossing. Under the supervision of an aquatic ecologist, spawning gravels encountered (if any) will be removed at the stream crossing points prior to construction works taking place, subject to the prior agreement at all stages in consultation with IFI. There will be seasonal constraints on working through, and adjacent to, watercourses which are of a particular ecological interest. Works will be in accordance with IFI Guidelines (IFI, 2016) or as otherwise agreed with IFI during the Construction Phase.

W-SC6 - Fluming: For open cut crossings, where fluming is required, the watercourse will be diverted around the works by gravity, most likely in an enclosed pipe. Potential issues relating to a build-up of silt, or silty dewatering fluids will be addressed through the use of settlement tanks at each crossing. Whilst the purpose of the flume is to create a dry stream/river bed for the open excavation, it may be necessary to employ a temporary sump pump to remove any additional water. Pumped discharge will be via a settlement tank to remove any solids from the dewatering.’

‘W-SC8 - Reinstatement (Watercourses, Trenches and Drains): The detailed design of works within the watercourses, particularly the reinstatement of watercourses following open cut crossings, will be undertaken with input/guidance from a geomorphologist and ecologist.

Where reinstatement of the pipeline trench occurs near a watercourse, a silt fence will be placed along the riverbank to prevent solids that are washed off the works area during heavy rainfall from entering the stream while the surface adequately revegetates. This measure will be particularly important at sites that slope to the edge of a watercourse. Typically, a silt fence will incorporate a geotextile filter fabric stretched between a series of wooden or metal fence stakes and will be installed in such a way to create pooling of runoff and thereby allowing sedimentation to take place.

The reconnection of land drains temporarily altered during construction will be carried out as part of the backfill operation. After the installation of the pipeline, the backfill will be compacted in layers up to the underside of the severed drains which are to be permanently reinstated. The replacement drain will extend into the undisturbed ground on each side of the trench for a suitable distance to ensure a properly supported reconnection can be made (typically 1m or more). The undisturbed ground will be excavated by hand and a good connection formed to the existing drain. The pipeline trench backfill will then be compacted up to the subsoil surface level.’

1663. The Water Status Impact Assessment Report (WSIAR) also assesses the impacts of open cut crossings on WFD designated water bodies. The WSIAR found that there would be no likely change on WFD quality elements as a result of open cut crossings of WFD water bodies and Paragraph 111 states:

“There will be a CEMP (EIAR Appendix A5.1) which will include measures used to mitigate any impact, including sediment management protocols. With the use of best practice and specific construction control measures to be implemented through the CEMP these impacts will be limited habitat loss to be minimised; minimise use of plant within riparian zone external to trench; flume watercourses, if feasible; seasonal constraints on working through and adjacent to watercourses of ecological interest - July to Sept working only (or as otherwise agreed with IFI); if spawning gravels are encountered, they would be removed at the stream crossing points under the supervision of an aquatic ecologist prior to construction work start, stockpiled on geotextile filter fabric and reinstated to the stream bed after the damming/fluming measures have been removed. With appropriate controls in place the risks will be managed. The risks will be for the period of construction and will be local to the activities. There will be no overall degradation to the water body as a result.”

12.3.2 Potential Washout Impact of the Proposed Project on the Lyreen River

1664. The general observer submissions from John Quinn and Sandra Frayne raised concern about the potential washout impacts on the Lyreen River and connected water bodies as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

1665. These general observer submissions raised concern about the consequences of the act of 'washing out' of suspended solids or chlorinated water or any other contaminants or pollutants and the temperature change or other impacts on the Lyreen River which is a tributary of the Rye Water River.

12.3.2.1 Applicant's Response

1666. The Applicant has considered these impacts in EIAR Chapter 9 - Water, Appendix A9.2 - Pipeline Assessment and associated Appendix A9.2 Annex A - Water Body Crossings and Washout Valves – Detailed Assessment. Furthermore, the WSIAR also considers the WFD related impacts of the washouts on the Lyreen_010.

1667. Section 7.8.2 of EIAR Appendix A9.2 - Pipeline Assessment (as well as Sections 3 and 4 of Appendix A9.2 Annex A) identify the potential for pre-mitigation significant effects during the Commissioning and Operational Phases. However, with implementation of mitigation measures the significance of effect was assessed to reduce to Not Significant.

1668. The mitigation that will be implemented to reduce the significance of effects during the Commissioning Phase is outlined in Table 9.15 in EIAR Chapter 9 - Water:

“W-SC20 - Washout Discharges:

- Once the pipeline has been appropriately tested the water will need to be drained out. Due to the vertical profile of the pipeline this will require the use of every washout along the length of the pipeline. The number of Washout Valves totals 187, of which 39 are confirmed to have permanent outfall infrastructure for discharges to a water body/surface water receptor; 108 will require temporary outfall infrastructure for discharges to water bodies (via flexible hose) and small ditches and field drains; and the remaining 40 will discharge locally to land where possible. There are also 20 Washouts at Line Valves, 18 of which will require temporary outfall infrastructure for discharges to water bodies (via flexible hose) and small ditches and field drains; and the remaining two will discharge locally to land where possible.*
- The following discharge rates will be employed:*

- *Field washouts will be limited to a maximum of 15l/s*
- *Minor watercourses will be limited to a maximum of 25l/s*
- *Significant water bodies will be limited to a maximum of 20% of QMED, (the median flow) and also to an overarching maximum value of 150l/s (this limit will be applied to both the hydrostatic test water and sweetening flow during testing and commissioning)*
- *Discharges will occur during periods when river flows are lower than the mean flow (typically July to September)*
- *Discharges will only occur to receiving water bodies that have sufficient capacity to receive flows from the pipeline without increasing flood risk*
- *Discharges will be controlled in accordance with EPA, IFI and OPW requirements.*
- *The water to be discharged will require further treatment to remove potential contaminants including silt (from inside the pipe which will not have been cleaned at this stage) and chlorine (used to sterilise the abstracted water to prevent contamination from microorganisms including bacteria). In addition, the pH in the discharged water needs to be the same as that in the receiving water and oxygen levels in the discharge are likely to be low; adjustments to pH and reoxygenation are therefore likely to be required. Temperature impacts are not expected due to discharged water being similar in temperature to receiving water bodies and therefore no mitigation is required.*
- *Any discharges from the pipeline will be dechlorinated prior to discharge. This will be achieved by using sodium sulphite dechlorination tablets inserted into perforated wire mesh baskets at the washout chamber or permanent outfall structure. Dechlorination is achieved almost immediately on contact with the tablets. This method provides the most flexible approach for the removal of low chlorine residual and is suited to the infrequent operation of the washouts. Residual chlorine would be reduced to <0.005mg/l as required by the Salmonid Regulations.*
- *It is not likely that site-specific measures will be required as the discharge will be treated such that it can enter any receiving water, at the appropriate discharge rate."*

1669. The mitigation that will be implemented to reduce the significance of effects during the Operational Phase is outlined in Table 9.16 in EIAR Chapter 9 - Water:

"W-SO1 - Operation of Washouts: The discharges proposed to water bodies will need to be agreed with the relevant regulatory authorities and carried out in accordance with any conditions imposed in regulatory authorisations. As with the potential discharges during the Construction Phase, it is likely that the levels of contaminants (suspended solids and chlorine) in any discharge will be within set limits; and flows will be controlled to levels appropriate to the receiving water. The discharge limitations for the Construction Phase will also apply to the Operational Phase."

1670. The WSIAR assesses the impacts of the washout on the Lyreen_010 on WFD status and objectives. The WSIAR found that there would be no likely change on WFD quality elements as a result of the commissioning or operation of any washouts and states in Paragraph 156:

"Dechlorination will be provided so that residual chlorine will be reduced to <0.005mg/l as required by the Salmonid Regulations. Any potential impact on physico-chemical quality elements is anticipated to be short-term and will not cause deterioration to any quality element or to any water body."

1671. and in Paragraph 157;

"All impacts at the Testing and Commissioning Phase described above are anticipated to be negligible. Therefore, the differentiation in effects comes from the status of each water body and surface water receptor to change."

12.3.3 Receiving Wastewater Capacity

1672. The following general observer submission raised specific concerns that the expansion of water supply is not matched by demonstrated wastewater capacity:

Unique ID	Name of Individual or Organisation
WSP_SUB_45	Friends of the Irish Environment

1673. The general observer submission from Friends of the Irish Environment stated that increased potable supply will result in increased wastewater discharge and should be assessed as part of the same set of project effects.

12.3.3.1 Applicant's Response

1674. Population growth targets are set out through the National Planning Framework, Regional Spatial and Economic Strategies, and Local Authority Development Plans. Water and Wastewater services are designed to facilitate these targets and do not dictate where population growth occurs.

1675. Wastewater capacity is not within the scope of the Proposed Project and is not an indirect effect of it, under the EIA Directive, as there would need to be additional projects approved, such as future housing development or future industrial development, in order to actually increase demand for water. Therefore, the availability of both water supply and wastewater facilities (as well as any other utilities or requirements for those projects to proceed) would need to be considered at the point of considering the development consent for those future, currently undefined projects. The Proposed Project is being brought forward precisely to ensure that that development is not constrained by the availability of water supply. The Proposed Project does not need to demonstrate that there is adequate wastewater capacity or any indirect impacts associated with this because there is a break in causality due to the third-party projects.

1676. However, the Applicant does have responsibility for wastewater capacity (as well as water supply) and therefore, is able to confirm that it has Strategic Infrastructure Development consent to build the Greater Dublin Drainage (GDD) scheme in order to address future wastewater need in the Greater Dublin Area (GDA). Further, it can confirm that GDA's wastewater infrastructure, including GDD, will be able to cater for the additional water supply and consequent wastewater into the future, including additional water supplied by the Proposed Project.

12.4 Response to Specific Issues Raised by Prescribed Bodies

12.4.1 Flood Data

1677. The prescribed body submission from the OPW noted the availability of the OPW for consultation:

Unique ID	Name of Prescribed Body
WSP_SUB_96	Office of Public Works (OPW)

1678. This prescribed body submission stated that the EIAR refers to the use of OPW flood data to predict any flood risk associated with the proposed infrastructure and also states that the Applicant may need to consult with the OPW in relation to discharges via washout valves and share water quality monitoring results with the OPW, as appropriate. The submission continued that the OPW are open to liaising further on these items as required, and where necessary, with the Applicant.

12.4.1.1 Applicant's Response

1679. The Applicant notes the reference to OPW flood data and confirms that the EIAR has been prepared using the most up to date OPW flood hazard and flood risk information available through the national flood information portal and associated datasets.
1680. The EIAR's flood risk assessment draws on:
- OPW flood hazard maps;
 - OPW flood risk management plans;
 - OPW hydrometric and hydrological datasets; and
 - OPW technical specifications and guidance notes for flood risk assessment.
1681. This ensures that the assessment of flood risk for all infrastructure sites, pipeline sections and washout locations is consistent with national flood risk management practice.
1682. EIAR Chapter 9 – Water and the Surface Water Management Plan (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan) already state that:
- OPW will be consulted where washout discharges interact with OPW-managed watercourses or drainage infrastructure; and
 - Water quality monitoring results will be shared with the OPW where relevant particularly where monitoring relates to OPW managed channels or flood relief assets.
1683. This aligns with the OPW's role in managing flood risk nationally and maintaining drainage and flood relief schemes.
1684. The Proposed Project includes a comprehensive suite of measures that ensure no increase in flood risk, including:
- Attenuation ponds, settlement lagoons and infiltration basins designed to maintain greenfield runoff rates;
 - Temporary and permanent drainage designed to avoid altering existing OPW drainage networks;
 - Controlled washout discharge rates and dechlorination measures to protect receiving waters;
 - A full Construction Phase SWMP that aligns with OPW guidance and national flood risk management principles.
1685. These measures ensure that the Proposed Project does not increase flood risk to OPW-managed watercourses, downstream receptors or adjacent lands.
1686. The Applicant confirms that:
- OPW will be consulted in advance where any discharge, temporary works or monitoring results relate to OPW-managed channels or flood relief schemes;
 - Any required authorisations or agreements will be obtained prior to commencement of such works;
 - The SWMP will be updated pre-commencement and will incorporate any additional requirements arising from OPW consultation.
1687. The Applicant considers the EIAR fully and appropriately uses OPW flood data and that the commitments already set out in the EIAR, CEMP and SWMP ensure that OPW will be consulted where required and that flood risk is fully addressed in accordance with national guidance.

12.4.2 Risk of Potential Impacts to Watercourses due to Required Watercourse Crossings

1688. The prescribed body submission from IFI raised a specific issue relating to the potential impact of the length of the proposed pipeline and the required watercourse crossings during construction:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

1689. This prescribed body submission stated that IFI has serious concerns over the sustainability of a pipeline of considerable length (c. 170 km) which will cross many watercourses and presents considerable risk to watercourses in terms of pollution from suspended solids, concrete, chlorine and hydrocarbons during construction. The submission further stated that the timing and methods used for any instream works or works in the vicinity of watercourses shall be agreed with IFI in advance of works.

12.4.2.1 Applicant's Response

1690. The Applicant notes the IFI's concerns regarding the sustainability of a c.170km pipeline crossing multiple watercourses and confirms that the EIAR, CEMP and SWMP (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan) include a comprehensive suite of measures to avoid fisheries habitat loss, prevent pollution and ensure that all timing and methods for in-stream works are agreed with IFI in advance.

1691. The Proposed Project has been designed to avoid direct impacts on watercourses wherever possible including:

- Extensive use of trenchless techniques at sensitive rivers to avoid disturbance of riverbanks, beds, spawning gravels and riparian habitats (W-SC3 in the SWMP);
- Preservation of natural buffer strips between works and watercourses, with widths consistent with IFI 2016 and IFI 2020 guidance;
- Minimisation of bed and bank disturbance where outfalls or open-cut crossings are unavoidable (W-SC16 in the SWMP); and
- Geomorphologist and ecologist-led reinstatement of any disturbed channels (W-SC8 in the SWMP).

1692. These measures ensure that fisheries habitats including salmonid spawning gravels, lamprey habitats and macroinvertebrate communities are protected.

1693. The CEMP and SWMP include multi-layered pollution control measures that prevent sediment, concrete, hydrocarbons or chlorine from entering watercourses including:

- Toe drains (W-SC1) and attenuation/settlement lagoons (W-SC2);
- Silt fencing, sandbags and geotextile barriers (W-SC8);
- Silt booms around outfalls (W-SC16);
- Temporary drainage, soakaways and infiltration basins (W-SC31, W-SC33, W-SC35, W-SC37);
- Daily visual inspections and trigger-based shutdowns (W-SC10); and
- All washout discharges are dechlorinated using sodium sulphite tablets to <0.005mg/L to be compliant with Salmonid Regulations (W-SC20).

1694. The Applicant confirms that all in-stream works and works in the vicinity of watercourses will be agreed with IFI in advance as required. Under measure W-SC16 in the SWMP the following will apply:

- No in-stream works during the salmonid Annual Close Season;

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- Works undertaken outside lamprey spawning seasons (March – April for river/brook lamprey and May – August for sea lamprey);
- If works must occur between October – March then juvenile lamprey translocation is required;
- All timing is agreed site-specifically with IFI, recognising regional variation in salmonid spawning; and
- All Pollution Control Plans, Emergency Response Plans and Method Statements are prepared in agreement with the IFI to ensure full IFI oversight and compliance.

1695. The Applicant considers that the EIAR, CEMP and SWMP provide a robust multi-layered, enforceable framework that prevents fisheries habitat loss, avoids pollution and ensures that in-stream works are carried out under IFI-approved timing and methods. These measures exceed standard industry practice and fully address the concerns raised.

12.4.3 Risk of Pollution to Kilmastulla River

1696. The prescribed body submission from IFI raised a specific issue relating to the risk of pollution to the Kilmastulla River resulting from the construction and operation of the proposed WTP:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

1697. This prescribed body submission stated that IFI is also concerned about the associated risks of pollution to the Kilmastulla River system both during construction and operation of the plant. The submission further stated that it is noted that the surface waters from the proposed WTP site will drain to a tributary of the Kilmastulla River.

12.4.3.1 Applicant's Response

1698. The WTP has been designed as a 'closed loop' and there will be no discharge of process wastes to the aquatic environment. All liquid residuals from the treatment process will be recirculated back to the head of the works. Therefore, during operation of the WTP, the only discharge would be from site drainage, as process water would be recycled within the water treatment process.

1699. As set out in Section 4.6.6 of EIAR Chapter 4 - Proposed Project Description, rainfall harvesting would be used to capture runoff from roofs and tank areas. The Clear Water Storage Tank would have a 'green roof' on top which would have a biodiversity benefit as well as reducing the speed of surface water runoff. General site runoff from internal roads would be collected in an attenuation pond. Runoff entering the attenuation pond would be pre-treated via a hydrocarbon interceptor to remove any build-up of pollutants on internal roadways or working surfaces. The outfall from the attenuation pond would be fitted with a penstock to isolate the attenuation pond and so contain pollutants in the event of an accidental spillage. Stormwater from the attenuation pond would be discharged to a stormwater drain along the Water Treatment Plant access road to discharge into a stream, which in turn discharges into the Kilmastulla River. The embedded pollution control measures incorporated into the attenuation pond, as described above, would mitigate any significant risk of downstream pollution.

1700. During construction, the attenuation pond and other site drainage measures will be put in place as early activities in the Construction Phase to mitigate any potential pollution runoff due to the temporary construction works. This is set out, along with other measures for managing run-off during construction, in Section 5.2 of the SWMP (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan). The SWMP will be implemented on-site through the CEMP to manage surface water and reduce the risk of a pollution incident.

12.4.4 Mitigation Measures for Watercourse Crossings

1701. The following prescribed body submissions recommended a number of mitigation measures to be implemented for watercourse crossings during the Construction Phase:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce
WSP_SUB_88	Inland Fisheries Ireland (IFI)

1702. The prescribed body submission from An Taisce stated that, Horizontal Directional Drilling (HDD) methods, if proposed, should avoid release of drilling fluids and should articulate a rapid spill response protocol in the event of malfunction. The submission continued that mitigation measures should be sufficiently robust to avoid river collapse and contaminant introduction into the aquatic environment.

1703. The prescribed body submission from IFI recommended a number of mitigation measures to be implemented to ensure comprehensive protection of local aquatic ecological integrity, in the first place by complete impact avoidance and as a secondary approach through mitigation by reduction and remedy. The submission continued that river crossings should be planned and executed in an environmentally sensitive way, preferably using tunnelling or boring techniques, unless specifically requested by IFI. The submission also requested that any works directly affecting watercourses or riparian habitats must first be submitted to IFI for assessment.

12.4.4.1 Applicant's Response

1704. The Applicant has taken into consideration the concerns of An Taisce around the release of drilling fluids from HDD and the requirement for spill response and other mitigation measures to avoid river collapse and release of contaminants into the water environment.

1705. Paragraphs 137 and 138 of EIAR Chapter 9 - Water outline the risks on the water environment from the 31 trenchless crossings of water bodies by the pipeline during the Construction phase and states:

'The greatest risk from trenchless crossings is the potential for a 'breakout' of bentonite drilling fluid. Where a slurry system is used to extract spoil during micro-tunnelling, a mix of bentonite and water is used to suspend the excavated spoil which is then pumped out of the excavation to a solids separation system on the surface where the spoil is filtered and separated from the slurry. The liquid sludge remaining in the tanks is placed under a soil separator and dewatered with a centrifuge or filter press.

In the absence of control measures, breakouts could occur spilling bentonite slurry onto the ground and/or into local water bodies. If these were to occur, there could be impacts to water quality as a result of the release of fine sediments to the receptor, including change to pH, as bentonite grout is alkaline. Although unlikely, should such a breakout occur, the magnitude of impact would be medium adverse, resulting in effects ranging from Slight (not significant) to Very Significant in the water bodies at the 31 water body crossings, as detailed in Section 7.5.2 in Appendix A9.2 (Pipeline Assessment).'

1706. Table 9.14 of Section 9.4.2 of EIAR Chapter 9 - Water outlines specific mitigation measures that will be employed to reduce the impacts from trenchless crossings during the construction phase:

'W-SC3 - Trenchless Crossings: The layout of the trenchless crossing area is designed to avoid impacting on riverbanks and contamination of the river with either dewatering fluid, silty water runoff or bentonite slurry. In particular, the reception and launch pits for the trenchless excavation will be located as per the requirements of the detailed design to be completed by the appointed Contractor, but will be contained within the Proposed Project and will be chosen or engineered such that the fall is away from

the water body and beyond the riparian habitat Soil stockpiles and fuel storage tanks will be a minimum of 10m from the river (CIRIA 2006a).'

1707. In addition to this, Section 9.4.1 of EIAR Chapter 9 - Water outlines a number of standard mitigation measures that will be implemented in order to reduce the risk of contaminants being released into the water environment. The standard measures which will be implemented include:

- Control of silt-laden water runoff and dewatering of silt water;
- Appropriate stockpiling of material;
- Appropriate storage of materials away from water bodies;
- Containment of fuel tanks, drums, mobile bowzers and bunds;
- Appropriate usage of vehicles and plant including when driving and refuelling;
- Control measures when working in or near watercourses; and
- Avoiding use of concrete in design where possible; and using self-contained batching plant on-site with adequate cleaning process defined.

1708. These standard mitigation measures follow industry best practice and will be implemented in accordance with the CEMP. This control methodology has been proven to work on other similar projects and is utilised across the construction industry. Measures have been selected to ensure suitability for the Proposed Project and the types of construction methods that would be employed.

1709. The Applicant has noted the response from IFI on the requirement to avoid impacts where possible and, where not avoidance is not possible, to reduce and remedy the impacts. The submission continued that river crossings should be planned and executed in an environmentally sensitive way, preferably using tunnelling or boring techniques, unless specifically requested by IFI. The submission also requested that any works directly affecting watercourses or riparian habitats must first be submitted to IFI for assessment.

1710. EIAR Chapter 9 - Water has taken account of 'embedded' mitigation which are mitigation embedded into the design (including the use of trenchless crossings of water bodies) to avoid or reduce environmental effects. In line with the mitigation hierarchy, this embedded mitigation has sought to avoid or reduce effect through the design of the Proposed Project. Where there is still potential for significant effects after the embedded mitigation is considered, standard and location specific mitigation measures have been proposed as set out in Section 9.5 of EIAR Chapter 9 – Water and the SWMP.

1711. The Applicant also notes requests by IFI for engagement on any works directly affecting watercourses or riparian habitats so IFI can assess them before construction begins. Paragraph 11 of the SWMP states:

*"A suitably qualified person will carry out the inspection/monitoring of the surface water management regime on behalf of the Employer. The **results will be stored and will be available for inspection/audit by the Employer, appointed Contractor and regulatory bodies** such as National Parks and Wildlife Service (NPWS), Environmental Protection Agency (EPA), IFI and the OPW where relevant. All inspections/monitoring and results will be recorded on standard forms."*

1712. The SWMP also outlines how works will be carried out following the relevant IFI guidance documents. Specifically, Section 6.3 of the SWMP outlines how working in or near watercourses will be undertaken:

'Buffer strips of natural uncleared vegetation will be preserved between construction activity and all rivers, streams and water bodies being crossed by trenchless excavation. The launch and reception shafts for pipe jacking will be situated outside of the riparian zone, therefore buffer strips of natural

uncleared vegetation will be preserved between construction activity and all rivers, streams and water bodies being crossed. This buffer will ensure there is no potential for construction materials to accidentally fall into a water body. The locations for drill rig and the launch and reception shafts will be chosen or engineered as such that the fall is away from the waterbody, thereby facilitating installation of pollution containment and control facilities, in accordance with the ‘Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters’ (IFI 2016). Where feasible, a buffer zone width will be maintained for larger river channels (>10m) of 35m to 60m and for smaller channels (<10m) of 20m or greater where possible, as per the recommendation in the ‘Planning for Watercourses in the Urban Environment A Guideline Developed by Inland Fisheries Ireland’ (IFI 2020), or as otherwise agreed with IFI during the construction stage. The same buffers will apply to water bodies paralleled by the proposed pipeline.’

1713. and;

‘The design and choice of temporary crossing structures will provide for passage of fish and macroinvertebrates, protect important fish habitats, and prevent erosion and sedimentation. Temporary crossings will be installed in accordance with IFI 2016 Guidelines’

1714. and;

‘The design of the outfalls and settlement ponds and the construction method statements for their installation will be agreed with IFI prior to construction’.

1715. Furthermore, the SWMP also outlines that IFI guidance will be followed, consultation with IFI will be continual throughout the Construction Phase for all elements of the Proposed Project including: storage and stockpiling of topsoil and subsoils, control of silty water, and attenuation lagoons (Paragraph 36 of the SWMP); watercourse crossings (Paragraph 49 of the SWMP); discharges (Paragraph 94 of the SWMP); the proposed 38 kV uprate works (Paragraph 158 of the SWMP); and construction sequencing (Paragraph 174 of the SWMP).

12.4.5 Potential Surface Water Runoff Impacts

1716. The prescribed body submission from An Taisce raised a specific issue relating to the potential impacts associated with increased surface water run-off:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce

1717. This prescribed body submission stated that the potential for higher surface water run-off with sediment-laden water into sensitive aquatic receptors should also be considered, especially rivers and streams noted for salmonid populations whose gravel spawning grounds can be smothered by excess siltation, and that this excess sedimentation may also give rise to hydromorphological impacts.

12.4.5.1 Applicant’s Response

1718. The Applicant notes the concern regarding the potential for sediment-laden surface water runoff to impact sensitive aquatic receptors, including salmonid rivers and streams, and confirms that the EIAR, CEMP and SWMP (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan) include a comprehensive suite of measure to prevent sedimentation, protect spawning habitats and avoid hydro morphological impacts.

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1719. The SWMP includes multiple measures that prevent sediment from entering watercourses including W-SC1, W-SC2, W-SC3, W-SC8, W-SC11, W-SC14, W-SC31, W-SC33, W-SC35, W-SC37 and W-SO2 which ensure that sediment cannot reach sensitive aquatic receptors.
1720. The Proposed Project also includes extensive measures specifically designed to protect salmonid rivers, spawning gravels, lamprey and juvenile fish:
- W-SC16 states that no in-stream works will occur during salmonid Annual Close Season and that works should be undertaken outside lamprey spawning seasons. If works are required between October and March then juvenile lamprey translocation is required. All timing is agreed site-specifically with IFI;
 - Furthermore, W-SC16 requires work during forecast low-flow periods with silt booms around outfalls to prevent sediment release with the absolute minimum disturbance of bed and bank. The outfalls are to be installed at 45 degrees, flush with the bank and aligned with the bed to avoid scour and baffles fitted to discharge points to prevent bed disturbance; and
 - Spawning gravels are ecologist-supervised and removed only where necessary with full IFI agreement with reinstatement undertaken to restore natural bed structure.
1721. These measures ensure that salmonid spawning habitats would not be smothered or degraded.
1722. EIAR Chapter 9 – Water and its associated appendices include a full hydromorphological assessment and the mitigation measures in the EIAR and SWMP avoid changes to channel form, flow regime or sediment dynamics:
- Flow diversion and dewatering are controlled to avoid altering stream velocity or water levels;
 - Runoff pathways are managed to prevent new inflow points that could cause bank scour;
 - Trenchless crossings avoid channel modification entirely;
 - Reinstatement restores bed and bank profiles to pre-construction condition; and
 - Monitoring detects any deviation from baseline hydromorphology and triggers immediate corrective action.
1723. These measures ensure that the Proposed Project does would not cause hydromorphological change.
1724. The Applicant considers that the EIAR, CEMP and SWMP provide a robust, multi-layered enforceable framework that prevents sediment-laden runoff, protects salmonid spawning grounds and avoids hydromorphological impacts. The measures in place exceed standard industry practice and fully address the concerns raised.

12.4.6 Landscape Abstraction Impacts and Changes to Seasonal Flow

1725. The prescribed body submission from Clare County Council raised a specific issue relating to landscape abstraction impacts and potential changes to seasonal flow:

Unique ID	Name of Prescribed Body
WSP_SUB_110	Clare County Council

1726. This prescribed body submission stated that landscape abstraction could alter natural flood regimes in several ways and that there are hydrological risks associated with the Proposed Project as the Shannon system includes a complex interaction of lakes, floodplains, wetlands and groundwater dependent ecosystems. The submission continued that floodplain ecosystems such as the Shannon Callows depend on periodic inundation and changes in abstraction could modify flood timing, flood duration and water levels.

12.4.6.1 Applicant's Response

1727. The Applicant notes the concern regarding potential changes to seasonal flow patterns and confirms that the abstraction point at Parteen Basin is a hydro-regulated system with a narrow ESB-controlled operating band. Water levels in Parteen Basin and Lough Derg are actively managed for hydropower generation, and the Proposed Project will be just one more consideration that ESB considers when managing water levels on Parteen Basin and Lough Derg.
1728. The River Shannon Callows (and the River Shannon Callows SAC) lies upstream of the abstraction point. The only possible mechanism of potential impact is the potential impact on water levels arising from the abstraction approximately 36km downstream (as the crow flies) at Parteen Basin, and the magnitude and distribution in time of these variations.
1729. It must be understood that the water level on Lough Derg and the River Shannon system as far upstream as Meelick Weir, at present is highly artificial in that it is managed year-round, primarily for hydropower, secondarily for navigation and in a collateral way to attenuate flooding insofar as possible. The only outflows are the compensation water (i.e. the minimum statutory compensation water flow of 10m³/s directed to the Old River Shannon at Parteen Weir), and the flow through Ardnacrusha. The latter is driven by the daily and weekly power requirements of the national grid.
1730. The shoreline flora and fauna have, over many decades, come into equilibrium with the water level regime corresponding to this control. As previously mentioned, since the late 1970s, and arising from considerations of embankment safety, ESB has operated a 460mm deep Normal Operating Band on Lough Derg, and water level has been consistently managed to remain within this band, except where periods of flooding cause its upper limit to be exceeded.
1731. In assessing these, the following should be borne in mind:
- ESB normally manages the Normal Operating Band to be near full in late spring, before the onset of summer conditions, and to be at the lower end in autumn, in anticipation of incoming wet weather flows
 - Even in a drought year such as 2018, the lowest recorded levels were in April and December, and not at all in the summer months. These lowermost levels, recorded naturally, pre-abstraction, were substantially the same as the model predicted levels post abstraction in August 2018 (EIAR Appendix A9.1, of Chapter 9: Water)
1732. Natural daily water level difference, across Lough Derg from north to south, due to wind effects and flow gradient, averaged 110mm (from the period 10 June 2018 to 31 August 2019), had a standard deviation of 60mm, had a minimum of 10mm and can exceed 400mm in storm events.
1733. The impacts to Lough Derg (and Parteen Basin) lake levels (which are part of the same system as the River Shannon Callows SAC), due to the modelled inclusion of the Proposed Project abstraction (as a constant flow of either 154Mld or 300Mld) are barely distinguishable from the baseline case when viewed on level/flow duration curves (a standard hydrological method for comparing long-term data series). The level regimes of Lough Derg (and Parteen Basin) are only simulated to be affected by the Proposed Project abstraction during extreme drought periods and in the days immediately after the drought (up to a week) when inflow is needed to replenish any deficit in storage caused by the Proposed Project abstraction. From the 52-year period model simulation period (1972-2023), the simulated Lake levels are only found to be notably affected by the inclusion of the Proposed Project during the 1995 and 2018 drought events, with all other years showing no perceptible impacts. Therefore, for approximately 99% of the 52-year model simulation period, there are no perceptible impacts to simulated Lake levels as a result of the Proposed Project abstraction. Even during the worst modelled drought event (2018) from the 52-year model simulation period, the size and rate of simulated Lake level change fits within the range of ESB normal observed Lake level fluctuations seen within the

historical recorded levels and are still within the Normal Operating Band on Lough Derg and the upper and lower water level that ESB applies to Parteen Basin. The abstraction modelling is addressed in more detail in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

1734. The hydrological regime of the Shannon Callows is primarily controlled by upstream inflows, overbank flooding processes, and hydraulic control at Meelick Weir, with minimal influence from water level management at Parteen Basin under typical conditions. The Proposed Project abstracts water from a downstream, highly regulated impoundment and represents a very small proportion of total Shannon system flows. Hydrological modelling demonstrates that any abstraction-related changes to water levels are negligible and largely confined to extreme drought conditions, with no measurable influence on flood magnitude, timing, duration or frequency upstream. Consequently, the processes underpinning periodic inundation of floodplain habitats, including those within the Shannon Callows, will remain unchanged. On this basis the proposed abstraction will not affect the ecological functioning of floodplain ecosystems, wetlands or groundwater dependent terrestrial ecosystems (GWDTEs), and no pathway exists for adverse effects on the integrity of the River Shannon Callows SAC or any other hydrologically connected European site. Further detail in relation to the effect on water levels during a flood event is provided in Chapter 11 – Water (Hydrological modelling and Water Levels) and further information on GWDTEs is provided in Chapter 10 – Biodiversity, of this report.

12.4.7 Planning Conditions Specific to the Kildare Country Council Area

1735. The prescribed body submission from Kildare County Council recommended a number of water-related conditions for proposed works within Kildare County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

1736. This prescribed body submission requested the following water-related conditions be attached to any grant of planning for the Proposed Project:

- Prior to the commencement notice stage, the Applicant shall submit a Construction Phase Surface Water Management Plan in accordance with the IFI 2016 Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters for written approval of the Planning Authority. The Plan shall address the collection, control and management of any surface water runoff from the site to prevent any polluting matter being discharged to receiving water. The Plan shall include a site layout plan which sufficiently identifies potential surface water and / or groundwater receptors, the location and design of proposed mitigation and proposals for surface water and / or groundwater monitoring programmes, as appropriate; and
- The Environment Section shall be consulted if a discharge to waters of any silt laden water is proposed as part of the Surface Water Management Plan for either the Construction or Operational Phases, as a discharge can only be authorised under Section 4 of the Local Government (Water Pollution) Act 1977, as amended.

12.4.7.1 Applicant's Response

1737. The Applicant acknowledges the recommended conditions and requirements within the submission from Kildare County Council. The Applicant is committed to ongoing consultation with Kildare County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the SID planning application documentation. The Applicant has provided a general response to conditions, including how the

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Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

1738. The Applicant acknowledges the requirement to submit a Construction Phase SWMP prior to commencement and confirms that a comprehensive SWMP has already been prepared as Annex A to the CEMP (EIAR Appendix A5.1).
1739. The SWMP has been developed in full accordance with the IFI 2016 Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters and incorporate all relevant CIRIA, OPW, NRA and best practice guidance.
1740. The SWMP includes a detailed and proactive monitoring regime as set out in Section 7 of the SWMP.
1741. Monitoring results will be stored and will be available for audit by the NPWS, EPA, IFI and the OPW to ensure full transparency and regulatory confidence.
1742. The SWMP identifies all surface water and groundwater receptors and sets out the location and design of all mitigation measures with the inclusion of Pollution Control Plans, Emergency Response Plans and Method Statements. It will be updated by the appointed Contractor prior to commencement to incorporate any commitments imposed by An Coimisiún Pleanála if planning permission is granted.
1743. The Applicant confirms that:
- If any discharge of silt-laden water to waters is proposed during construction or operation, the Planning Authorities' Environment Section will be consulted;
 - Where required, authorisation will be sought under Section 4 of the Local Government (Water Pollution) Act 1977 (as amended); and
 - The SWMP already includes measures to avoid the need for such discharges wherever possible.
1744. The Applicant considers that the SWMP fully addresses the requirements set out by the Planning Authority by providing a robust, IFI-compliant framework.

12.4.8 Planning Conditions Specific to the Limerick Country Council Area

1745. The prescribed body submission from Limerick County Council recommended a number of water-related conditions for proposed works within Limerick County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council

1746. This prescribed body submission requested the following water-related conditions be attached to any grant of planning for the Proposed Project:
- All existing drainage channels, including agricultural drains, roadside ditches and minor watercourses within or adjoining the area of works, must remain undisturbed throughout the construction process;
 - All surface water arising from construction activity within the working area must be managed and disposed of appropriately. It is essential that no surface water run-off is allowed to discharge onto adjoining properties or onto the public road network;

- Any water generated through vehicle movement, ground disturbance or temporary works must therefore be retained and controlled within the site boundary through standard best-practice measures; and
- Should it be proposed to alter drainage patterns in any way, revised drainage proposals should be submitted and agreed in advance of construction.

12.4.8.1 Applicant's Response

1747. The Applicant acknowledges the recommended conditions and requirements within the submission from Limerick City and County Council. The Applicant is committed to ongoing consultation with Limerick City and County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

1748. The construction works in Limerick would be limited to the proposed 38 kV Uprate Works which would be undertaken on existing infrastructure. The likely impacts on surface water relate solely to the construction works required to install the replacement lines. The potential for impact from the 38 kV Uprate Works is therefore mainly a result of direct crossing of water bodies by plant and machinery.

1749. Measure W-SC38 in the SWMP (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan) is specific to the 38 kV Uprate Works, and includes:

- The proposed 38 kV Uprate Works will be completed by ESNB on behalf of the Applicant. During the Construction Phase, ESNB will be obliged to comply with all the commitments set out in the EIAR and the NIS. In addition, ESNB will be required to comply with any conditions that may be attached by ACP to any planning approval that may be granted for the Proposed Project;
- In most instances, the proposed 38 kV Uprate Works do not involve extensive soil stripping. In addition, access will be across fields and in any peat area or wetland using wide-tracked, low ground pressure vehicles to reduce damage to the surrounding ground. No stone access roads are required, and where necessary 'bog mats' will be used to cross softer land;
- Clear span bridging will be used to provide access for construction machinery across watercourses where there is no existing crossing structure. This crossing method will be used unless an alternative crossing method is agreed with IFI. There are seven such crossings required for the proposed 38 kV Uprate Works;
- Clear span bridging utilises multiple layers of bog mats, wooden sleepers or lightweight metal structures. The nature of the bridging to be used will be agreed with the project ecologist on-site prior to installation. IFI has been and will continue to be consulted with respect to watercourse crossings and relevant guidance will be adhered to;
- Bridging will incorporate silt control fencing to prevent loose material deposition from construction vehicles gaining access to the watercourse being crossed. Clear span bridging will be installed using a tracked excavator, tracked dumper and tracked quad bikes importing materials via the agreed access tracks to the crossing point; and
- There is no requirement to provide temporary crossing infrastructure for the River Shannon or the Headrace. Existing public road crossings of both these significant watercourses will be utilised throughout the works.

1750. Section 6 of the SWMP also includes extensive generic mitigation measures that will apply to the proposed 38 kV Uprate Works. This includes, for example:

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- Cut-off ditches, berms or diversion channels will be utilised around working area boundaries, where possible, to limit surface water entering the excavated areas and silty water running off the site into surface water features or drains;
- Silt fences will be installed/erected along the boundary of water bodies to prevent any silt laden runoff from impermeable surfaces;
- Temporary stockpiles will be located away from drains and watercourses and at a minimum distance of 10m from a non-sensitive watercourse or 50m from a sensitive watercourse; and
- Management of stockpiles to prevent siltation of watercourse systems through runoff during rainstorms.

1751. The Applicant acknowledges the requirement to maintain all existing drainage channels, including agricultural drains, roadside ditches and minor watercourses. The EIAR and SWMP already include measures to ensure that these features remain undisturbed and fully functional throughout construction (e.g. through the pollution prevention measures described above), or where this is not feasible, that features are reinstated after construction work is complete. This includes measure W-SC8 which requires the reinstatement of any land drains temporarily altered during construction using hand excavated tie-ins into undisturbed ground to ensure proper re-connection and long-term functionality.

1752. EIAR Chapter 11 – Agriculture details mitigation measures specific to agricultural drains. This is addressed further in the responses in Chapter 14 – Agriculture of this report.

1753. The applicant confirms that:

- No alteration to existing drainage patterns will occur unless required for safe construction;
- Where temporary diversion of drains is necessary, the drains will be re-routed to maintain their function and reinstated following construction; and
- Any permanent changes to drainage patterns will be submitted for approval in advance and in accordance with the Planning Authority's requirement.

1754. The applicant considers the measures set out in the EIAR and SWMP to provide a robust and comprehensive framework to:

- Maintain all existing drainage channels in their current condition;
- Prevent any construction runoff from leaving the site;
- Ensure that any required permanent drainage alterations are agreed in advance; and
- Protect the existing hydrological regime and prevent localised flooding or blockages.

12.4.9 Planning Conditions Specific to the Offaly County Council Area

1755. The prescribed body submission from Offaly County Council recommended a number of water-related conditions for proposed works within Offaly County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

1756. This prescribed body submission requested the following water-related conditions be attached to any grant of planning for the Proposed Project:

- Conditions relating to the management of surface water;
- All recommendations as outlined in the submitted Flood Risk Assessment shall be implemented by the Applicant for the Operational Phase;

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- All mitigation measures as outlined in the submitted Water Status Impact Assessment Report shall be implemented by the Applicant for the Construction and Operational Phases; and
- The Applicant shall maintain / preserve any existing riparian corridor / drain present within and / or adjacent to the site by implementing a buffer zone where no development is permitted in accordance with Offaly County Council's Development Plan 2021-2027.

1757. The prescribed body submission from Offaly County Council stated that, in relation to river / stream crossings, it is requested that the views and the recommendations of IFI in regard to construction works over watercourse / river crossings are considered, where feasible.

12.4.9.1 Applicant's Response

1758. The Applicant acknowledges the recommended conditions and requirements within the submission from Offaly County Council. The Applicant is committed to ongoing consultation with Offaly County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

1759. The Applicant notes the requirement to maintain and preserve riparian corridors and confirms that the Proposed Project complies with Offaly County Development Plan Policies BLP-20 and WSP-22.

1760. The EIAR and SWMP (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan) includes a comprehensive suite of measures that ensure protection of riparian zones, drains and watercourses during both construction and operation. These measures collectively ensure that a minimum 10m riparian buffer is maintained in accordance with Policy BLP-20 except at unavoidable crossing points assessed in the EIAR.

1761. Key measures from the SWMP include, but are not limited to:

- Watercourse buffers:
 - Generic mitigation for working near watercourses is included in Section 6.3 of the SWMP. This includes that for watercourses within or adjacent to the Proposed Project, but not crossed by the Proposed Project, where feasible, a buffer zone width will be maintained for larger river channels (>10m) of 35m to 60m, and for smaller channels (<10m) of 20m or greater, as per the recommendation in the IFI guidance Planning for Watercourses in the Urban Environment, or as otherwise agreed with IFI during the Construction Phase.
- Avoidance of development within riparian buffers:
 - W-SC3 specifies that at trenchless crossings, soil stockpiles and fuel storage tanks will be a minimum of 10m from the river, and launch and reception pits will be outside of the riparian zone; and
 - W-SC13 specifies that when working in peat, temporary storage of excavated material will be located outside the buffer extents surrounding drains and watercourses, with buffers maximised based on site topography.
- Protection of watercourses from overland flow and sediment:
 - W-SC1 provides for toe drains along the Construction Working Width to intercept overland flows and prevent runoff reaching adjacent watercourses;

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- W-SC2 provides for attenuation ponds located strategically along the length of the Construction Working Width to prevent direct discharge of surface waters from within the Construction Working Width without prior attenuation and settlement; and
- W-SC8 requires silt fencing when backfilling the pipeline trench near a watercourse, and for geomorphologist/ecologist-led reinstatement at watercourse crossings, including planting of riparian vegetation.
- Watercourse crossings:
 - Section 4.2 of the SWMP contains measures specific to watercourse crossings (including both trenchless crossings and open cut crossings).
- Sustainable Drainage Systems (SuDS):
 - In accordance with W-SC22, W-SC28, W-SC31, W-SC33, W-SC35 and W-SC37, SuDS are incorporated across all the infrastructure sites. These measures will ensure that runoff is attenuated to greenfield rates and that sediment is removed prior to discharge.
- Specific riparian protection at sensitive locations:
 - W-SC33 requires that topsoil stripping does not occur within 5m of the Camcor_030 waterbody with silt fencing and bunding installed along its length. Daily visual inspections and weekly sampling ensure compliance and early detection of any issues.
- Protection of peatland drainage networks:
 - Section 4.4 of the SWMP contains measures specific to working in peat for preventing suspended soils and ammonia entering receiving waters.
- Controlled washout discharges:
 - W-SC20 sets strict discharge limits and requires dechlorination, pH adjustment and reoxygenation to ensure no adverse effects on riparian or aquatic environments.

1762. The Applicant confirms that:

- Riparian corridors and drains will be preserved, with a minimum 10m buffer applied in accordance with BLP-20, except at defined crossing points assessed in the EIAR or as otherwise agreed with IFI;
- SuDS and surface water controls ensure compliance with Policy WSP-22 and prevent any increase in runoff rates or downstream flood risk; and
- All measures are secured through the CEMP (including the SWMP) and will be implemented by the Contractor under the supervision of the Environmental Manager.

1763. On this basis, the Applicant considers that the Proposed Project fully complies with the riparian buffer and surface water management policies of the Offaly County Development Plan 2021 – 2027.

1764. The Applicant also notes the comment that the views and recommendations of IFI in regard to construction works over watercourses / river crossings are considered, and as responded to the IFI submissions on this matter in Sections 12.4.3 and 12.4.5 of this report.

12.4.10 Flood Risk and Mitigation

1765. The prescribed body submission from Tipperary County Council raised concerns about flood risk and mitigation:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

1766. This prescribed body submission states that the Proposed Project interacts with areas at risk of fluvial and pluvial flooding and raised concerns about flood risks impacting the Proposed Project during construction and with whether the mitigation measures proposed can be implemented successfully in times of flood risk.

12.4.10.1 Applicant's Response

1767. The Applicant notes the comment regarding the FRA and confirms that the conclusions presented in the EIAR are based on a comprehensive, multi-source assessment of flood risk to and from all elements of the Proposed Project.

1768. A response in relation to flood risk from the pipeline and RWI&PS is provided in Section 12.2.5 of this report.

1769. All infrastructure sites are at low risk from all flood sources and located in Flood Zone C except the RWI&PS and WTP access roads which would be in Flood Zone A. A Justification Test was completed for these two access roads in Section 8.3 of the FRA (EIAR Appendix A9.4).

1770. As set out in the FRA (EIAR Appendix A9.4), there would be no impact from the works at the infrastructure sites on fluvial flood risk as the works would be located outside of the 0.1% AEP flood extent and so would not give rise to a change in channel or floodplain conveyance and storage. The construction of the RWI&PS access road and the WTP access road crossing the Roran watercourse (Knockdromin Stream) floodplain have the potential to increase the risk of fluvial flooding, which was assessed in Section 7 of the FRA. It has been concluded that there would not be an increase in the flood risk over the adjacent areas due to the Proposed Project.

1771. SuDS and other measures to attenuate additional runoff generated by the works would form part of the design and ensure that there would be no increase in runoff rates from the sites. These measures include:

- RWI&PS – rainwater harvesting and the provision of an attenuation tank to attenuate surface water runoff;
- WTP – rainwater harvesting and the provision of an attenuation pond to attenuate surface water runoff;
- BPT – an infiltration basin to attenuate runoff;
- BPS – an attenuation pond to attenuate runoff;
- FCV – an attenuation pond to attenuate runoff; and
- TPR – two attenuation ponds with discharge at greenfield rates.

1772. Section 6 of the FRA describes the potential flood risk from construction works, and the measures for mitigating construction flood risk. Measures include, but are not limited to:

- Temporary runoff storage and attenuation features will be implemented within all active working areas, including the infrastructure sites, to store and attenuate any additional runoff that is generated during construction;
- Use of combined filter drains, soakaways or similar to receive and attenuate site runoff within active working areas;
- Careful placement of excavated fill to avoid stockpiles in areas prone to flooding or overland runoff;
- Where material stockpiles need to be built in the floodplain, the following measures will be implemented to ensure there is no increase in the risk of flooding:

- Minimise the length of stockpiles so they can be bypassed by overland flows - Provide culverts through them so they do not block overland flows;
- Sequence works to avoid lands subject to seasonal flooding; and
- Provide runoff attenuation and control along the Treated Water Pipeline trench to prevent it from acting as a flow conveyance route.

1773. The FRA demonstrated that, based on the design of the Proposed Project developed to date, there is a low overall risk of flooding to, and arising from, the Proposed Project.

1774. The Applicant confirms that the FRA findings are robust, have been fully integrated into the design and ensure that flood risk effects remain within those predicted in the EIAR. The FRA demonstrates that the Proposed Project will not increase flood risk to people, property or the environment.

12.4.11 Adequacy of Mitigation Measures

1775. The prescribed body submission from Tipperary County Council raised concerns about the adequacy of mitigation measures in the CEMP:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

1776. This prescribed body submission stated that the level of specification of many of the proposed measures leaves them open to interpretation and do not provide clarity, which may fail to ensure that they are effective in practice, for example:

- Operational Phase mitigation measures include various measures related to control of effects that may otherwise occur due to culverts and outfalls, for example 'limitation of culvert length through design' and 'To monitor the efficacy of the above measures, there will be post project appraisal to identify if there are issues that can be investigated and addressed at an early stage.'

12.4.11.1 Applicant's Response

1777. The Applicant notes that the request for additional clarity on mitigation measures has been made against various topics in the submission from Tipperary County Council and has addressed this in Chapter 2 – Overarching Matters of this report.

1778. In relation to specifically the water environment, pre-defined compliance thresholds, action levels and trigger points for open cut crossings in areas of peat and managing surface water through peat areas are set out in Section 4.4 of the SWMP (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan) and align with relevant regulatory criteria to ensure that environmental effects do not exceed those assessed. Details on monitoring, inspections and quality indicators for the wider construction works are provided in Section 7 of the SWMP.

1779. Furthermore, the Applicant notes the request for greater clarity regarding the operational phase mitigation measures associated with culverts and outfalls. Section 8 of the SWMP sets out a detailed suit of design-led measures which are embedded in the project design. Additional embedded mitigation in relation to outfalls and operational use of washout valves is provided in EIAR Appendix A4.1 – Operational Strategy. Mitigation for outfalls includes, for example:

- Directing each outfall downstream to reduce impacts to flow patterns;
- Provision of appropriate scour protection at the base of the outfall headwall where required;

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- Directing outfalls away from the banks of a river to reduce any potential risk of erosion (particularly on the opposite bank);
- Minimising the size/extent of the outfall headwall where possible to reduce the impact on the banks; and
- Any discharges from the pipeline will be dechlorinated prior to discharge. Residual chlorine would be reduced to <0.005mg/l as required by the Salmonid Regulations.

1780. A typical Washout Valve (with outfall) arrangement is shown in EIAR Figure 4.87 – Proposed Typical Washout Valve Arrangement.

1781. On this basis, the applicant confirms that EIAR provides sufficient clarity and certainty regarding the operational phase mitigation measures and their implementation.

13. Soils, Geology and Hydrogeology

13.1 Overview

1782. Fourteen of the 114 submissions raised the issue of soils, geology and hydrogeology in relation to the Proposed Project.
1783. An assessment of soils, geology and hydrogeology was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 10 - Soils, Geology and Hydrogeology. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
1784. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding soils, geology and hydrogeology. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 6 Proposed Project Description;
 - Chapter 7 Construction and Commissioning;
 - Chapter 10 Biodiversity;
 - Chapter 12 Water (General);
 - Chapter 14 Agriculture; and
 - Chapter 23 Risk of Major Accidents and/or Disasters.
1785. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
1786. The majority of submissions were in relation to soil compaction, contamination and groundwater, which have been assessed in the EIAR and appropriate mitigation measures proposed.
1787. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding soils, geology and hydrogeology;
 - Specific matters raised in general observer submissions regarding soils, geology and hydrogeology; and
 - Specific matters raised by Prescribed Bodies regarding soils, geology and hydrogeology.
1788. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.

13.2 Response to General Issues Raised

13.2.1 Potential Soils Impacts

1789. The following submissions raised concerns about the potential impact on soils as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_16	Joanne Skehan
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_92	Judith Kohler
WSP_SUB_101	Edward Frayne
WSP_SUB_114	Tipperary County Council

13.2.1.1 Applicant's Response

1790. EIAR Chapter 10 - Soils, Geology and Hydrogeology assesses the impact on soil loss and compaction from the construction and operation of the Proposed Project. Impacts on soils are mainly related to the Construction Phase due to the limited operational activities that would interact with soils (as a result, there would be no likely significant effects on soils during the Operational Phase). During construction, the movement of construction plant and traffic within the Planning Application Boundary could cause localised compaction of the topsoil and subsoils, leading to changes in the hydrogeological regime. There would also be a permanent loss of soil as a result of constructing the infrastructure sites, and temporary loss of soils within the Construction Working Width. However, the assessment concluded that there would be no likely significant effects on soils as a result of constructing the Proposed Project, with the exception of small, localised areas of degraded raised bog (see response in Section 13.3.1 of this report in relation to effects on peat).
1791. Potential farm-scale Construction Phase impacts on land are addressed in EIAR Chapter 11 - Agriculture. All drainage systems impacted will be reinstated. A team of experienced surveyors will survey the Construction Working Width and detailed records will be kept during the setting out of the works along the corridor. Once reinstated, normal agricultural activity can continue across the land, with only the standard restrictions on planting and building applying within the 20m Permanent Wayleave and any exclusion areas associated with pipeline features such as Air Valves, Washout Valves and Line Valves. Responses in relation to agriculture are in Chapter 14 – Agriculture of this report.
1792. Soils could also be impacted during the Construction Phase from contamination. As described in Section 10.4 of EIAR Chapter 10 – Soils, Geology and Hydrogeology, no significant potential contamination risk was identified along the Construction Working Width, resulting in no likely significant effects on soils from contamination. Standard, best practice mitigation measures will be implemented to avoid or reduce the impact on soil contamination during construction. These mitigation measures are included in Section 10.5 of EIAR Chapter 10 and the Surface Water Management Plan (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan). Examples of mitigation measures include, but are not limited to:
- Use of secondary containment, e.g. bunds around oil storage tanks;
 - Use of drip trays around mobile plant;
 - Supervising all deliveries and refuelling activities;
 - Designating and using specific impermeable refuelling areas isolated from surface water drains; and
 - Having an emergency/accidental spillage plan in place.
1793. Standard, best practice mitigation measures will be implemented to reduce the impact on soils during construction. These mitigation measures are included in the Soil Management Plan (Annex B of EIAR

Appendix A5.1 – Construction Environmental Management Plan). Examples of mitigation measures include, but are not limited to:

- Land Liaison Officers appointed by the Applicant will be present on-site to monitor the stripping, handling, and storage of topsoil, and to record land use details for each affected holding;
- Topsoil and subsoil will only be handled or trafficked when the surface is free of standing water and not frozen. Soils will only be handled when they are in a reasonably dry and friable state, below the plastic limit;
- Detailed records will be kept of soil stripping operations undertaken to ensure that soils are used for their intended purpose or reinstated to the correct agricultural field as applicable;
- Topsoil and subsoil will not be mixed and will be stored in separate stockpiles positioned within designated areas and kept free from the passage of vehicles and plant; and
- Once a stockpile has been completed the area shall be clearly defined to prevent any disturbance or contamination by other construction activities. Wheeled vehicles will be prohibited from tracking over stockpiles of soil that are to be reused.

1794. On completion of the construction works, all temporary works facilities will be removed, and the sites reinstated to their pre-existing condition, with the exception of the permanent Infrastructure Sites. This will be undertaken as per the process set out in Section 5.8.3.11 of EIAR Chapter 5 - Construction & Commissioning and Section 1.4.4 of the Soil Management Plan.

1795. Reinstatement will start with the restoration of the subsoil by ripping it to a minimum uniform depth of 600mm. This depth exceeds the standard level of construction phase compaction. This depth of ripping will loosen any material compacted during construction. All surface stones and roots above 150mm in diameter will be removed. Regrading of subsoil will be carried out. The spreading of subsoil will be carried out in favourable weather and workable ground conditions. The subsoil will be evenly spread across the Construction Working Width leaving it level. Topsoil will then be spread evenly across the Construction Working Width. Reseeding will be carried out on completion of topsoil spreading. Soil cleared from agricultural parcels will be stockpiled and protected during construction to prevent subsoil and topsoil mixing. The stockpiled soil will be used during reinstatement.

13.2.2 Potential for Contamination of Water Sources from Mines

1796. The following submission raised concerns about the potential for contamination of water sources from mines:

Unique ID	Name of Individual or Organisation
WSP_SUB_77	Shane Mathews

13.2.2.1 Applicant's Response

1797. In relation to contamination from historic mines affecting the water quality in Parteen Basin, there is no hydrological connectivity between the Silvermines and Parteen Basin. The Kilmastulla discharges to the River Shannon, immediately downstream of Ardnacrusha Power Station.

1798. Notwithstanding the above, contamination from historic mining has been considered in EIAR Chapter 10 – Soils, Geology and Hydrogeology. Specifically, the Silvermines (Gortmore) Tailings Management Facility (TMF) is located 200m downgradient of the Construction Working Width (shown on EIAR Figure 10.83 in Chapter 10 – Soils, Geology and Hydrogeology). The Gortmore TMF is a large, engineered tailings disposal facility. Since cessation of mining in the 1990s, the TMF was rehabilitated. Historical metal and sulphate contamination occurred at the TMF. Surface water monitoring in the Kilmastulla River indicates that natural attenuation and dilution in the environment results in metals within

acceptable surface water concentrations. Rehabilitation works have been completed at various localities in the Silvermines including Gortmore TMF, with works administered by North Tipperary County Council on behalf of the Department of Climate, Energy and the Environment. The rehabilitation work has included:

- Capping poorly and non-vegetated areas of the TMF surface;
- Establishing a grassland sward on the capped areas of the TMF;
- Various engineering works on the TMF (e.g. improvements to the surface water drainage system and construction of rockfill buttresses to lessen the slopes of the TMF sidewalls); and
- Remedial works to the TMF's retention ponds and wetlands, so as to improve the quality of waters discharging into adjoining watercourses.

1799. The levels of dissolved metal in the surface water, while slightly elevated above background levels, are within drinking water limits downgradient of the TMF. Elevated soil metals may be encountered near the banks of the Kilmastulla River, due to historical mining upgradient at Silvermines. Excavation of soils with high metals may mobilise metals in the soil and groundwater but is predicted to have a low and localised impact. Works along the riverbank only comprise of three permanent outfalls along the Kilmastulla. There would therefore be no likely significant effect in relation to contamination from the TMF, as reported in Section 10.4 of EIAR Chapter 10 – Soils, Geology and Hydrogeology.

13.2.3 Potential for Contamination of Soils during the Operational Phase

1800. The following submission raised concerns about the potential for leakages at the WTP during the Operational Phase to result in the contamination of soils:

Unique ID	Name of Individual or Organisation
WSP_SUB_93	Michael McKeogh

13.2.3.1 Applicant's Response

1801. As set out in Section 10.4.3 of EIAR Chapter 10 – Soils, Geology and Hydrogeology, there would be no likely significant effect from contamination during the Operational Phase of the Proposed Project.

1802. There would be chemicals stored at the WTP. The chemical with the potential for the greatest impact on the aquatic environment would be aluminium sulphate, as it is particularly toxic to fish life, but the same principle applies to all water treatment chemicals. All chemicals will be stored in secure areas inside buildings within a bund area. Level monitoring will be used to detect any sudden change in the volume stored in each tank and detect a leak or damage to containers. Any sudden change in tank volume will be alarmed and this would prevent an extensive release of chemicals into the environment. As a result, it would be very unlikely that there would be an incident.

1803. In the very unlikely event that aluminium sulphate or other chemical reach the soils, the WTP is underlain by deep low permeability subsoils. Section 10.3.2 of EIAR Chapter 10 – Soils, Geology and Hydrogeology states that the WTP is underlain by deep subsoils (9.6m to 35.1m below ground level) comprising glacial till derived from Lower Palaeozoic and Devonian sandstones, with high clay content (>15%) and low to moderate permeability. This low permeability till acts as a natural barrier, significantly limiting vertical migration of any spilled water or chemical into deeper soils. Any release would be largely restricted to the immediate surface zone, localised, and readily remediated.

1804. The Operational Strategy (EIAR Appendix A4.1) and Section 4.15 of EIAR Chapter 4 - Proposed Project Description set out the system control philosophy for the Proposed Project. The system control philosophy is to default to 'shut down' in the event of a high-water level or overflow at the BPT or TPR,

or in the event of a communications failure between the Infrastructure Sites. Similarly, if the RWI&PS or WTP experience difficulties a signal would be sent to the BPT, TPR and BPS (as necessary) to shut down, to ensure the system remains primed. All input and output flows would be metered and communicated to the System Control and Data Acquisition (SCADA) to continually monitor for leakages or bursts on the pipeline. In the instance of an imbalance of ‘flow in’ versus ‘flow out’, an alarm is raised to alert the operators (located at the WTP and repeated to the National Operations Management Centre) who can take appropriate action to shut down the pumps and isolate the main as necessary. Pressure would also be monitored, with sudden drops in pressures resulting in an alert to operators in the WTP control room, who would then take action to shut down the pumps and pipeline and dispatch a call out for investigation.

1805. Coated steel has been selected as the pipeline material as catastrophic failures on steel pipelines are extremely rare. In line with the Operational Strategy (EIAR Appendix A4.1), in the unlikely event that a leakage incident should occur along the pipeline, remotely operated automated Line Valves will be closed in order to limit the amount of water that can discharge from the affected section of pipe. If required, the section of pipe can then be drained down, water will be de-chlorinated and there will be a controlled discharge to nearby watercourses, at flow rates appropriate to their capacity. Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur. Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners is minimised. Pre-emptive monitoring and inspections will be carried out routinely to allow the Applicant to identify and address any potential issues before they arise.
1806. Given these embedded design measures and procedures, the risk of leakages or accidental release of water or chemicals from the WTP or pipeline is considered to be as low as reasonably practicable, as set out in EIAR Chapter 20 - Risk of Major Accidents and/or Disasters.

13.3 Response to Specific Issues Raised in General Observer Submissions

13.3.1 Potential Impacts on Peatland on Specific Landholdings

1807. The general observer submission from James Waldron raised a specific issue relating to the potential impact of the proposed pipeline on peatland within their landholding:

Unique ID	Name of Individual or Organisation
WSP_SUB_90	James Waldron (Corr Property Consultants on behalf of)

1808. This general observer submission raised concerns about the potential impact that the proposed pipeline on his lands will have on peatland habitat to the west and north of the property, and the associated significant negative impacts on the local environment.

13.3.1.1 Applicant's Response

1809. The impact on peatlands has been assessed in EIAR Chapter 10 – Soils, Geology and Hydrogeology and methods for working in peat are described in EIAR Appendix A5.3. As set out in these documents, areas of peat along the pipeline route have undergone degradation by historical drainage and peat extraction and no high value active raised bog is present. The majority of the peatland habitats affected by the proposed pipeline route are cutover bog, however there are small areas of degraded raised bog at Clonad Bog, Mount Lucas Bog, Esker and Timahoe North Bog (the latter of which is located near the landholding in question). In all cases, raised bog habitats recorded within the Proposed Project have undergone drainage or cutting at some point in time and therefore do not conform with the Annex I habitat criteria for ‘active raised bogs’ or ‘degraded raised bogs still capable of natural regeneration’.

1810. EIAR Appendix A5.3 sets out the construction methods for working in peat. This includes appropriate construction methods depending on the depth of peat, as well as measures for managing peat instability, drainage arrangements, and access arrangements. This appendix also includes details for the reinstatement of peat following construction works. As per Section 6.9 of EIAR Appendix A5.3, following completion of the construction works the general principle is that the Construction Working Width will be reinstated in a manner consistent with conditions that existed on site prior to construction commencing and in accordance with any relevant approved Rehabilitation Plans or Enhanced Rehabilitation Plans that are being implemented by Bord na Móna, where such plans are in place. This would be on the basis of the conditions which existed on site prior to the construction of the Proposed Project, including the material, habitat, on-site features and surface water management measures that were on site before the works commenced.
1811. There are no high sensitivity peatland habitats adjacent to the observer's lands. Given the low sensitivity of cutover peatlands, and the embedded mitigation for managing peat during construction in Appendix A5.3, the effect on the majority of peatlands affected by the Proposed Project would not be significant (as set out in Section 10.4 of EIAR Chapter 10 – Soils, Geology and Hydrogeology). There would, however, be short-term likely significant effects on the small areas of degraded raised bog (totalling only 1.1ha across the length of the Proposed Project) as these areas have a higher ecological value, and therefore higher sensitivity. As the degraded raised bog will be placed over the pipe following installation (as per the reinstatement process set out in EIAR Appendix A5.3), the effect would reduce to not significant in the long term.

13.3.2 Potential Soil Compaction Impacts on Specific Landholding

1812. The general observer submission from James Waldron raised a specific issue relating to the potential impact of soil compaction on his lands as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_91	James Waldron (McEntegert Consultancy on behalf of)

1813. This general observer submission raised concerns about the potential impact of the works associated with the electricity grid infrastructure proposed on his lands as part of the Proposed Project and the potential to result in soil compaction.

13.3.2.1 Applicant's Response

1814. This submission is concerned with soil compaction in relation to the use of land as an equine paddock. The equine farm in question is Drumachon Stud. Construction works on this farm would be limited to the installation of electricity poles to facilitate a power connection for the Proposed Project (the main works associated with pipeline construction would not occur on this land). Impacts on soil compaction would therefore be limited. As set out in the response in Section 13.2.1 of this report, best practice mitigation measures, included in the Soil Management Plan (Annex B of EIAR Appendix A5.1 – Construction Environmental Management Plan), would be implemented to reduce the impact on soils, and soils would be reinstated to their pre-existing condition following completion of the works.

13.4 Response to Specific Issues Raised by Prescribed Bodies

13.4.1 Potential for Soil Erosion Impacts

1815. The prescribed body submission from An Taisce raised a specific issue in relation to the potential impacts of construction works on soils and groundwater:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce

1816. This prescribed body submission recommend that ACP assess the potential for increases in soil erosion to ensue during construction works due to vegetation removal during trenching. The submission further stated that the compaction and soil profile disturbance may also affect groundwater recharge patterns which should be particularly considered at areas of higher permeability to ensure that groundwater quality status does not deteriorate and compromise WFD objectives.

13.4.1.1 Applicant's Response

1817. As set out in the response in Section 13.2.1 of this report, best practice measures for managing soils during construction will be implemented through the Soil Management Plan (Annex B of EIAR Appendix A5.1 – Construction Environmental Management Plan). These measures will reduce the potential for soil erosion.

1818. The submission notes the risk that soil compaction and profile disturbance could alter groundwater recharge patterns. The EIAR has assessed this specific but highly localised risk. There would be a temporary reduction in local recharge during construction due to compaction, but this would be reversed once the land is reinstated. Details of the restoration measures is included in EIAR Chapter 5 - Construction & Commissioning and EIAR Chapter 11 - Agriculture.

1819. Section 10.4.2.2 of EIAR Chapter 10 – Soils, Geology and Hydrogeology states that the Proposed Project would influence existing runoff and groundwater recharge patterns locally across and around hardstanding areas. However, as part of the measures detailed in the SWMP (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan), rainwater would be intercepted and discharged to Sustainable Drainage Systems, resulting in only a localised reduction in recharge over a less than 24-month period.

1820. In conclusion, the localised and short-term construction would not have a likely significant effect on extensive high-permeability zones (such as regional sand and gravel aquifers). The design includes specific measures to prevent the pipeline from becoming a permanent pathway. This is in the form of puddle clay stanks or low permeability material that will be used as an impermeable barrier to the free movement of water. This is undertaken to prevent the (higher permeability) bedding material being used as a conduit for the transference of groundwater.

1821. An assessment of the compliance of the Proposed Project with the objectives of the Water Framework Directive is provided in the Water Status Impact Assessment Report that has been submitted with the SID planning application. This separate report addresses both groundwater bodies and surface water bodies, and concluded that the Proposed Project would not compromise WFD objectives or cause a deterioration in the status of any surface water or groundwater WFD designated water body and/or jeopardise the attainment of good surface water (or good ecological potential) or groundwater status.

13.4.2 Updated Data Sources

1822. The prescribed body submission from GSI raised a specific comment relating to the environmental monitoring reports for the Silvermines area that were referenced in the EIAR:

Unique ID	Name of Prescribed Body
WSP_SUB_87	Geological Survey of Ireland (GSI)

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1823. This prescribed body submission stated that, with reference to the Chapter 10, Section 10.3.6 of the EIAR, 'Contaminated Land', GSI noted references to environmental monitoring carried out for the Silvermines area in 2019 and 2021 by CDM Smith, now MKO. The submission continued that GSI would like to draw attention to more up to date monitoring reports for this area. The submission further stated that there are also specific geotechnical reports available for the Gortmore Tailings Management Facility, which should be considered in the planning application.

13.4.2.1 Applicant's Response

1824. A review of the 2019 and 2021 monitoring data of the Kilmastulla and the Gortmore TMF by CDM Smith Ireland Data (now MKO) was undertaken as part of the assessment reported in EIAR Chapter 10 – Soils, Geology and Hydrogeology. A number of historical reports were also summarised in the CDM Smith reports. It should be noted that there is no alteration to the TMF, TMF embankment or any associated infrastructure related to the TMF as part of the Proposed Project. The Treated Water Pipeline is proposed 200m to the west and upgradient of the TMF.

1825. The Applicant notes the more up to date information highlighted by GSI and has reviewed this information to inform this response. This includes data available on the Department of Climate, Energy and the Environment website (accessed April 2026). Much of the data relates to all areas of mining in Silvermines, including Ballygown, Magcobar, Garryard, Gortinadeeha, Shallee and Gortmore TMF. No clear trend in metal concentrations was noted in the Kilmastulla River downgradient of Silvermines.

1826. The Applicant can confirm that there is no information from the reviewed data that changes the conclusions or mitigation measures in the EIAR.

13.4.3 Request for Future Data

1827. The prescribed body submission from GSI requested a copy of reports detailing any site investigations carried out:

Unique ID	Name of Prescribed Body
WSP_SUB_87	Geological Survey of Ireland (GSI)

1828. This prescribed body submission stated that the GSI would much appreciate a copy of reports detailing any site investigations carried out. The submission continued that the data would be redacted for confidentiality and added to GSI's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector, and can be issued to the Geological Mapping Unit.

13.4.3.1 Applicant's Response

1829. The Applicant notes the request from GSI. Data on site investigations carried out to date are included in the appendices to EIAR Chapter 10 – Soils, Geology and Hydrogeology, and are publicly available from the SID planning application website. The site investigations data will be provided to the GSI.

13.4.4 Potential Impact on Group Water Schemes

1830. The prescribed body submission from Offaly County Council raised a specific issue relating to the potential impact of the Proposed Project on the Group Water Schemes (GWS):

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

1831. This prescribed body submission stated that any planning decision should ensure that any likely effects arising from the Proposed Project on established GWSs in terms of impacts on water volumes and / or water quality shall not pose a risk to public health. The Offaly County Council submission requested further clarity in regard to the extent of possible temporary effects which the installation of the Proposed Project pipeline may have on the Ballinagar GWS. The submission recommended the inclusion of conditions to be attached to any grant of planning that require mitigation measures in relation to any possible temporary effects which the installation of the Proposed Project may have on any Group Water Scheme.

13.4.4.1 Applicant's Response

1832. The Applicant acknowledges the recommended conditions and requirements within the submission from Offaly County Council. The Applicant is committed to ongoing consultation with Offaly County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.

1833. As explained in Section 10.4.2.2 of EIAR Chapter 10 – Soils, Geology and Hydrogeology, dewatering to the north of the Geashill Public Water Scheme (PWS)/Ballinagar GWS would be required to enable the installation of the Treated Water Pipeline from the BPT to the TPR. While the proposed trench would be located downgradient of the Geashill/Ballinagar water supplies and outside of the Zone of Contribution, dewatering would be required to a depth of 8m with potential to alter groundwater flow/quantity at the Ballinagar GWS. In relation to effects on the Geashill PWS/Ballinagar GWS, to the east of the Geashill to Ballinagar road it is evident from borehole data (BH213 and BH224) that groundwater levels are below the Treated Water Pipeline. In the absence of mitigation measures, there is the potential for a significant effect on Ballinagar GWS. There would be no likely significant effect on any other GWS or PWS.

1834. The short-term works (less than 12 weeks) would limit potential drawdown at the Geashill/Ballinagar supplies. As per Section 10.5 in EIAR Chapter 10 – Soils, Geology and Hydrogeology, the groundwater will be monitored upgradient of the water supply. Monitoring will be undertaken at the Geashill and Ballinagar water supplies along with the existing monitoring wells. Additional well surveys will be undertaken pre-construction. Trigger values will be established in terms of pH, conductivity, and water levels upgradient of the proposed works. Where concentrations exceed the natural variation in the parameters, the following mitigation will be implemented:

- Sheet piling at trenchless crossing shaft to limit groundwater inflows to the south of the Construction Working Width;
- Limiting the period of excavation. The trenching operation is only conducted once the pipeline installation and backfill crew are ready to install the pipeline in that location, in order to minimise the duration that the trench is open; and
- Alternative water source to the existing Ballinagar GWS for the duration of the temporary excavation works, if required. Alternative water sources include tankering or a connection to the Geashill PWS.

1835. With these mitigation measures in place, there would be no likely significant residual effects on groundwater flow or quality from dewatering during installation of the Treated Water Pipeline at Ballinagar GWS during the Construction Phase.

1836. Relevant water companies, the National Federation of Group Water Schemes and individual GWS would be consulted in advance to agree any diversions or outages and arrangements for alternative supplies, if required.

13.4.5 Disruption to Groundwater Flow and Quality from Dewatering and Contamination Risks

1837. The prescribed body submission from Tipperary County Council raised a specific issue relating to the potential impact of the Proposed Project on groundwater flow and quality from dewatering and contamination risks:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

1838. This prescribed body submission stated the construction phase poses risks to soil and geology. Potential impacts due to construction may include disruption to groundwater flow and quality from dewatering and contamination risks.

13.4.5.1 Applicant's Response

1839. Temporary dewatering would be required to manage groundwater, facilitating dry working conditions in excavations. Dewatering methods would vary depending on ground conditions and includes sump pumping, wellpoint dewatering, drainage channels, depending on site conditions. Effects on groundwater flow and quality from dewatering were assessed in EIAR Chapter 10 – Soils, Geology and Hydrogeology.

1840. Where dewatering is required, mitigation measures will be implemented as per Section 10.5 in EIAR Chapter 10 and the REAC in Annex G of EIAR Appendix A5.1 – Construction Environmental Management Plan. This will include measures set out in Section 13.4.4 of this report for GWS/PWS. Five private water supplies were also identified that would have potential indirect impacts due to groundwater drawdown from excavations. Where dewatering is required along the Construction Working Width, dewatering will be undertaken in accordance with C750 Groundwater Control: design and practice second edition (CIRIA 2016). Mitigation measures include:

- Limiting the period of open excavations and therefore dewatering requirement;
- Suitable groundwater control scheme to minimise drawdown or pore water pressure reductions, i.e. sheet or secant piles;
- Selection and placement of settlement tanks, settlement lagoons or lamella tanks for removal of suspended solids; and
- Monitoring of water supplies location and, if necessary, replacement or augmentation of affected water supplies.

1841. Direct disposal to watercourses of arisings from excavations and from groundwater dewatering activities will not be allowed. Water will be managed and treated in accordance with the SWMP (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan). This includes measures related to control of silty run-off and managing accidental spillages from construction activities, and measures specific to avoiding groundwater quality issues from working in peat.

1842. As per the conclusions of EIAR Chapter 10 – Soils, Geology and Hydrogeology, there would be no likely significant effects on groundwater flow or quality after the application of mitigation measures.

14. Agriculture

14.1 Overview

1843. Forty-one of the 114 submissions raised the issue of agriculture in relation to the Proposed Project.
1844. An assessment of agriculture was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 11 – Agriculture. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
1845. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding agriculture. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 6 Proposed Project Description;
 - Chapter 7 Construction and Commissioning;
 - Chapter 8 Noise & Vibration;
 - Chapter 9 Traffic & Transport;
 - Chapter 10 Biodiversity;
 - Chapter 12 Water (General);
 - Chapter 13 Soils, Geology and Hydrogeology;
 - Chapter 15 Air Quality; and
 - Chapter 23 Risk of Major Accidents and/or Disasters.
1846. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
1847. The majority of submissions were in relation to potential impacts on agricultural land holdings and operations, including temporary and permanent loss of land, disruption to access, biosecurity risks, and the impact on drainage and services, all of which were assessed in the EIAR and appropriate mitigation measures proposed.
1848. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding agriculture;
 - Specific matters raised in general observer submissions regarding agriculture; and
 - Specific matters raised by Prescribed Bodies regarding agriculture.
1849. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.
1850. Some of these responses to the consultation on the SID planning application regarding the approach to the construction of the Proposed Project partially overlap with submissions received by ACP regarding the application by the Applicant for an associated Compulsory Purchase Order (CPO) for the Proposed Project. A separate response has been provided by the Applicant to those objections to the CPO.

1851. The CPO responses make extensive reference to the process used to identify the route of the pipeline, the location of the Infrastructure Sites and the process for identifying the location of Construction Compounds and Pipe Storage Depots. This process is described in full in the EIAR in Chapter 3 – Consideration of Reasonable Alternatives and has not been referred to in the responses set out in this Chapter.

14.2 Response to General Issues Raised

14.2.1 Disruption to Agriculture and Farmlands

1852. The following submissions raised concerns about the general potential impact of the Proposed Project on farmlands, including resulting disruptions to agriculture:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_31	Tony O'Brien
WSP_SUB_42	Eileen McNamara
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_65	Samuel Norris
WSP_SUB_89	James Cullen Senior
WSP_SUB_101	Edward Frayne
WSP_SUB_114	Tipperary County Council

14.2.1.1 Applicant's Response

1853. As outlined in EIAR Chapter 11 - Agriculture, an assessment of the potential loss of agricultural land has been carried out for both the construction and operation stages of the Proposed Project.
1854. During the construction phase, short term (1-7 years in EIA terms) access to land would be required. Works would be carried out in a phased, linear manner, with the pipeline installed in a series of sections. A new section of the Construction Working Width would be opened only once construction in the preceding section is sufficiently advanced or nearing completion. The length of each active construction section would vary depending on local conditions, including site access and proximity to the public road network, but would typically range between 5km and 15km. Land would typically be removed from agricultural use for 18 to 24 months before reinstatement and return of the land to the landowner. This excludes land used for Construction Compounds and Pipe Storage Depots, which would be temporarily acquired for the duration of the Construction Phase, and at the infrastructure sites and locations of ancillary pipeline infrastructure where land would be permanently removed from agricultural use during both the construction and operational phases. The permanent loss of land will be addressed in the statutory compensation process. Temporarily acquired land would be returned to pre-construction conditions. This includes reinstatement of the subsoil and topsoil, with agricultural function assumed to return within three to five years. This estimate reflects expected short-term reductions in yield or quality, particularly on intensively managed or tilled land, and informs the basis for any proposed mitigation or compensation arrangements.
1855. Land Liaison Officers (LLOs) have been appointed by the Applicant as part of this current planning phase, and will remain in place throughout the construction, reinstatement and handover phases to address any queries that landholders and stakeholders may have. They will enable communications with affected landholders and facilitate the reorganisation of farm enterprises at critical times during the Construction Phase. They will also consult with landholders to identify any special management

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requirements such as specific on farm biosecurity measures isolating and identifying the disease status of farms affected. The works throughout will be executed under the supervision of the engineer acting on behalf of the Applicant. The LLOs will supervise the execution of the works and maintain contact with landholders along the route of the pipeline during the works. It will be the responsibility of the LLOs to maintain communication with landholders at all times during all aspects of works. This will include keeping landholders fully informed of any issues raised.

1856. All best practice mitigation measures that are applicable to a project of this kind will be implemented to avoid or reduce effects on agriculture to the greatest extent feasible. Mitigation measures for agriculture are outlined in Section 11.5 of EIAR Chapter 11 – Agriculture. Examples of construction phase mitigation measures include, but are not limited to:

- Crossing points will be agreed and suitable access arrangements will be provided which will accommodate the landholder while at the same time facilitating the construction of the Proposed Project;
- Active engagement with landowners will take place during construction;
- All agricultural lands, including drainage, utility services, and shelter belts/boundary features will be reinstated to pre-construction conditions;
- Disease protocols and farm biosecurity measures will be adhered to at all times; and
- Best practice measures will be followed for soil stripping, handling, storage and reinstatement, as set out in a Soils Management Plan.

1857. There would be short-term likely significant residual effects on 181 individual agricultural landholdings due to construction of the pipeline and associated pipeline infrastructure, and on eight landholdings due to permanent loss of land from the Infrastructure Sites. There would be likely significant residual effects on 12 equine only enterprises during construction. These effects would be short-term, with the exception of the landholdings that would be permanently acquired for the infrastructure sites.

1858. During operation there would be permanent removal of agricultural land where ancillary pipeline infrastructure such as Line Valves, Washout Valves, Air Valves, and Manways are located. The Proposed Project also includes acquisition of a 20m wide Permanent Wayleave, which is addressed in more detail in the response in Section 14.2.5 of this report. Disturbance to agricultural operations could occur due to the location of the ancillary pipeline infrastructure, requirement to undertake maintenance on the infrastructure, or during discharge of water from Washout Valves, would typically only be used once every 30 years or in the event of a catastrophic failure requiring the emergency emptying of the pipeline. Example mitigation measures during the operational phase include, but are not limited to:

- Above ground infrastructure will be fenced off in accordance with equine industry standards to ensure safety for grazing and exercising horses;
- Maintenance activities will be planned and coordinated with landholders to minimise disruption. Notification will be provided in advance of such works to allow landholders to adjust farming activities and relocate livestock where necessary; and
- Rare discharge events from Washout Valves will be carefully managed to reduce disruption to agricultural land, including giving landowners advance notice, considering site specific conditions when determining the discharge management approach, and agreeing remedial actions with landowners, if necessary.

1859. During operation of the Proposed Project, there would be a likely significant effect on one equine enterprise only.

1860. Other potential causes of disruption to agriculture due to the Proposed Project, including loss of access, sterilisation of land, spread of disease and land impacts, as well as the proposed measures for mitigating these impacts are covered in other responses in this Chapter.

14.2.2 Potential Loss of Agricultural Access

1861. The following submissions raised concerns about the general potential impact of the Proposed Project on agricultural access during construction:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Cllr Fiona Bonfield, Alan Kelly TD, & Cllr Louise Morgan Walsh
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_72	Carol Killeen
WSP_SUB_74	John Hensey
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_91	James Waldron (McEnteggert Consultancy on behalf of)
WSP_SUB_92	Judith Kohler
WSP_SUB_93	Michael McKeogh
WSP_SUB_97	Seamus Cullen

14.2.2.1 Applicant's Response

1862. As per the agriculture mitigation measures in the Register of Environmental Actions and Commitments (Annex G of EIAR Appendix A5.1 – Construction Environmental Management Plan), the Proposed Project will ensure access to agricultural land is not compromised during construction. Mitigation measures include, but are not limited to:

- Construction activities will be confined to the Planning Application Boundary. The type of temporary fencing provided along the Construction Working Width during the Construction Phase would be site specific, dependent on the particular farming methods at each location (with a stock-proof fence, where required). The type of fencing will be agreed in consultation with landowners. Temporary access points will be provided and the location and number of crossing points discussed and agreed with landowners;

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- A Pre-entry Requirements and Record of Construction Report will be completed with the landowner/occupier prior to the appointed Contractor(s) entering onto the land for the main pipeline construction. The report will contain landowners' particular reasonable requests in relation to temporary fencing, the provision of access across the Construction Working Width, the provision of water supply and power supply. Landowners will be notified prior to access being required to allow stock to be moved; and
- LLO's will be the principal point of contact for landowners during the construction, reinstatement and handover stages of the Proposed Project. Prior to any works commencing, the LLO's will engage with landowners to discuss and agree particular access requirements for vehicles and livestock to allow suitable access to be maintained throughout the duration of the works.

1863. In addition to the above agriculture specific mitigation measures, a Traffic Management Plan has been developed (EIAR Appendix A7.2) and will be implemented by the appointed Contractor for the Construction Phase to reduce disturbance to landholders. Materials would be transported along haul roads, and access and egress points will be designed to allow construction traffic to turn safely on and off the road reducing the occurrence of potential disruptions or hazards created by turning or moving machinery. See also response in Section 9.2.4 of Chapter 9 – Traffic & Transport of this report.

1864. Access to agricultural land has been considered in EIAR Chapter 11 – Agriculture and has factored into the assessment of likely significant effects, along with other agricultural impacts. Individual agricultural landholdings were assessed in EIAR Appendices A11.2 and A11.3.

1865. The submission from Seamus Cullen raises specific design matters in relation to access. These are addressed in Section 6.3.4 of Chapter 6 – Proposed Project Description of this report.

14.2.3 Potential Security Impacts for Landowners

1866. The following submission raised concerns about the potential general security impacts for landowners along the pipeline wayleave:

Unique ID	Name of Individual or Organisation
WSP_SUB_101	Edward Frayne

14.2.3.1 Applicant's Response

1867. As per Section 5.6 of the CEMP (EIAR Appendix A5.1), security will be the responsibility of the Contractor, who will provide adequate security to prevent unauthorised entry to or exit from any working areas. The following measures will be used to prevent unauthorised access:

- Fencing around the sites to reduce the risk of vandalism and unauthorised access. This process will be made easier by all operatives possessing an ID card. ID Cards will only be issued to operatives who have attended the site induction;
- Installation of CCTV and alarm systems, where required; and
- When there is no site activity, close and lock site gates and implement appropriate site security measures.

1868. As per Section 11.5 of EIAR Chapter 11 – Agriculture, landowners will be consulted during the construction phase to address queries surrounding the construction works. This will include agreeing fencing requirements so that appropriate temporary fencing and gates are used during construction to ensure security.

14.2.4 Risk of Spread of Disease Across Agricultural Land

1869. The following submissions raised concerns about the potential for the spread of disease across agricultural land as a result of the construction of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_65	Samuel Norris
WSP_SUB_77	Shane Mathews
WSP_SUB_113	Offaly County Council
WSP_SUB_114	Tipperary County Council

14.2.4.1 Applicant's Response

1870. The Applicant agrees that consideration of the risk of the spread of disease is necessary and consequently, this has been completed and appropriate mitigation and management measures put forward in the SID Planning Application documents.

1871. An assessment of the potential risk of major accidents and/or disasters has been carried out and is reported in the EIAR in Chapter 20 - Risk of Major Accidents and/or Disasters. The assessment considered a range of risks, including the risk of spread of livestock diseases due to movement of soil, animals and vehicles during construction. This risk was also covered in EIAR Chapter 11 - Agriculture. In EIAR Chapter 11 it was concluded that there would be no significant environmental effect as a result of the spread of disease during the construction or operational phase of the Proposed Project. The Applicant does not agree with the observation from Tipperary County Council that the risk of the spread of TB is not assessed and reported in the EIAR. As with the spread of disease generally, the spread of TB was considered in EIAR Chapter 11 and the assessment of the spread of disease generally in EIAR Chapter 20 includes the risk of the spread of TB. There are biosecurity measures included within the CEMP in Appendix A5.1 of the EIAR, as set out below. There is no different or additional risk to human health from the spread of TB that was not assessed in the EIAR submitted with the SID Planning Application.

1872. As part of the assessment, mitigation and management measures were identified and will be employed to reduce the risk of spread of disease (as outlined in Section 11.5 of EIAR Chapter 11). These include, but are not limited to:

- The appointed Contractor(s) will be required to comply with any third-party guidance, procedures and measures for livestock diseases in the unlikely event that an outbreak occurs during construction;
- All plant and equipment used during the Construction Phase will be thoroughly cleaned using a power washer unit prior to leaving site and a sign off sheet will be maintained to confirm cleaning;
- Stock-proof boundaries will be maintained to prevent animals from straying or coming into contact with other livestock;
- The appointed Contractor will liaise with the Department of Agriculture, Food and the Marine in relation to crop and livestock health;
- In the event that a notifiable disease outbreak occurs, or specific national biosecurity measures are introduced, any additional requirements will be implemented as directed by the relevant authorities, in coordination with affected landowners and stakeholders; and
- Biosecurity measures will be implemented in accordance with EU law on the prevention and management of the introduction and spread of invasive alien species, as well as relevant Irish national legislation and guidance.

1873. Mitigation in EIAR Chapter 8 – Biodiversity will act to reduce the primary pathway for increased disease risk during the Construction Phase, namely disturbance-induced badger dispersal. The provision of artificial badger setts, together with the phased and supervised closure of existing setts, will minimise abrupt displacement and help maintain badgers within their established territories. This reduces the likelihood of extended ranging behaviour and increased contact between social groups, which is associated with elevated disease transmission risk. Pre-construction surveys and the retention of suitable habitat and commuting routes will further support territorial stability. In addition, where implemented, mammal fencing will be designed to guide badger movement away from active construction areas and toward retained habitat or artificial setts, thereby minimising disturbance without fragmenting territories. Collectively, these measures reduce the potential for disturbance-driven movements that could otherwise increase the risk of disease spread.

1874. The assessment reported in Chapter 20 - Risk of Major Accidents and/or Disasters drew on the conclusion from EIAR Chapter 11. As this risk is assessed as part of the agriculture assessment, and appropriate mitigation and management measures identified, the risk is considered to be as low as reasonably practicable. There would therefore not be a risk of a major accident and/or disaster from a spread of livestock disease as a result of the Proposed Project.

14.2.5 Potential Sterilisation of Lands and Impacts to Land Use

1875. The following submissions raised concerns about the potential long-term sterilisation of agricultural land as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_31	Tony O'Brien
WSP_SUB_114	Tipperary County Council

14.2.5.1 Applicant's Response

1876. The operation of the Proposed Project will require the permanent removal of agricultural land from production at infrastructure sites. This represents a permanent loss of land which cannot be physically mitigated. Compensation will be provided to affected landholders to address this loss.

1877. As set out in EIAR Chapter 11 – Agriculture, the Proposed Project includes acquisition of a 20m wide Permanent Wayleave. This Permanent Wayleave would be registered on the title of each individual land holding. While it does not involve the acquisition of landownership, the registration of the wayleave may have the following practical implications for landholders:

- Land use implications: The presence of a registered wayleave may influence decisions regarding crop selection and land use within the wayleave corridor;
- Cropping and farm enterprise mix: Certain farming practices may need to be adjusted in areas where the wayleave is located;
- Farm infrastructure development: The wayleave may restrict the placement of new farm buildings or infrastructure within the designated corridor; and
- Residential and land development: Future development proposals on the land would need to accommodate the presence of the wayleave.

1878. However, as explained in EIAR Chapter 11 – Agriculture, the 20m wide Permanent Wayleave is not expected to affect the day-to-day agricultural use or cropping during the Operational Phase. There may be some disruption to farming activities during infrequent maintenance works. Once land is handed back to landholders, they would be able to resume use of land where permanent structures, such as

Air Valves, Washout Valves, and Line Valves are not present. Restrictions within the wayleave would not result in likely significant effects on agricultural landholdings. Any implications for land value, letting value, cropping regimes, farm enterprise mix, forestry and future development potential will be addressed through an appropriate financial compensation package.

14.2.6 Potential Land Impacts

1879. The following submissions raised concerns about the potential for soil impacts, including compaction and land drainage issues resulting from the construction of the Proposed Project:

Unique ID	Name of Prescribed Body
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_65	Samuel Norris

14.2.6.1 Applicant's Response

1880. The assessment in EIAR Chapter 11 – Agriculture acknowledges that, in the absence of appropriate mitigation measures during the Construction Phase, the productivity of agricultural land during the Operational Phase may be adversely affected by a range of soil-related impacts arising from construction activities. These may include loss of topsoil, improper separation or mixing of topsoil and subsoil, and severe compaction resulting from the movement and operation of heavy machinery, particularly within Construction Compounds and Pipe Storage Depots. Such impacts can reduce soil permeability, impair root development, and restrict crop growth, potentially leading to a long-term decline in soil health and agricultural output. However, the impact from soil compaction has been considered as part of the assessment in EIAR Chapter 10 - Soils, Geology and Hydrogeology, and appropriate mitigation measures proposed, as set out in the Soil Management Plan (Annex B of EIAR Appendix A5.1 – Construction Environmental Management Plan). Further details on soil mitigation are provided in the response in Section 13.2.1 in Chapter 13 – Soils, Geology and Hydrogeology of this report. On completion of the Proposed Project, all temporary works facilities would be removed, and the sites reinstated to their pre-existing condition. Further information on this is provided in Section 14.3.7 of this report.

1881. In relation to drainage, and as set out in Section 11.5.2.1.9 of EIAR Chapter 11 – Agriculture, pre-construction liaison meetings with landholders will be held to agree the extent of existing land drainage systems that will be impacted by the Construction Phase and to agree the nature and extent of replacement drains required. A detailed record of the locations of land drains intercepted during the Construction Phase will be kept. A LLO will be on-site to record land details. This process will also be followed during reinstatement works.

14.3 Response to Specific Issues Raised in General Observer Submissions

14.3.1 Potential Impact of Construction Dust on Specific Landowner Lands

1882. Three general observer submissions raised a specific issue relating to the potential impact of construction dust on their crops and farm animals as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_92	Judith Kohler

1883. These general observer submissions raised concerns about the impact of construction dust on their specific crops and animals throughout the Construction Phase.

14.3.1.1 Applicant's Response

1884. Dust impacts from the Proposed Project are addressed in Section 15.2.2 and 15.3.1 of Chapter 15 – Air Quality of this report. In summary, as set out in EIAR Chapter 11 (Agriculture), the appointed Contractor will employ measures to prevent the spread of dust and mud onto adjoining lands, in line with the dust mitigation measures set out in EIAR Chapter 12 (Air Quality) and the Dust Management Plan (Annex E of EIAR Appendix A5.1 – Construction Environmental Management Plan). Dust impacts during construction would be imperceptible (Not Significant) following the implementation of mitigation measures.

14.3.2 Potential Impact of Acquisition on Future Development on Specific Landowner Lands

1885. Five general observer submissions raised a specific issue relating to the potential impact of land acquisition on development on their land holding:

Unique ID	Name of Individual or Organisation
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_84	Eamonn Dooley
WSP_SUB_92	Judith Kohler
WSP_SUB_102	Fonsell Ltd.
WSP_SUB_108	Michael and Mary Kinsella

1886. The general observer submission from Gordon and Leslie Beattie stated that there is development potential in their lands which is being very negatively impacted by the pipeline route and the valve. It further states that the air valve is a seriously negative issue from a tillage farming perspective and also from a development perspective.

1887. The general observer submission from Eamonn Dooley noted that the landowner has family members with an interest in agriculture whom will be hoping to build a house on the farm when they finish their education. The submission continues that the area proposed to be acquired for the Proposed Project would be one of the locations considered for that purpose but that will not be possible for the years when construction is progressing.

1888. The general observer submission from Judith Kohler noted that the pipeline would have devastating consequences for the land in terms of its current use and long-term development potential.

1889. The general observer submission from Fonsell Ltd. stated that the property was intended for a housing development given its location close to Celbridge and the Hazelhatch railway station. The submission raised concerns that the Proposed Project would cause unnecessary sterilisation of lands to the south of the proposed pipe as they will not be capable of being developed.

1890. The general observer submission from Michael and Mary Kinsella states that the acquisition of their lands will prevent them from constructing a dwelling house at Coagh Upper.

14.3.2.1 Applicant's Response

1891. The Applicant does not believe the various submissions in relation to loss of development potential, or opportunity to construction a dwelling house, are relevant to the SID Planning Application, including specifically the EIAR, as the Proposed Project does not impact any active planning application on the

lands in question. Loss of development potential will be a matter for compensation, which sits outside the EIA process.

1892. It should be noted that the proposed pipeline will not impact lands outside the permanent wayleave and temporary working area (once construction is completed). Development will be restricted within the 20m wide permanent wayleave. There will be no restriction on development outside of the 20m wide permanent wayleave, or on crossing the pipeline with development roads servicing adjacent development lands outside the permanent wayleave.
1893. Provided any proposed development does not impact on the permanent wayleave or the temporary working area, prior to the conclusion of the construction phase or completely severs access to the pipeline wayleave, including from adjoining lands, the Applicant will not object to any planning permission application.
1894. The Applicant further notes that the question of whether a dwelling or other development might be permissible elsewhere on the landholding, outside the permanently acquired plots/rights, is a matter for the planning code and the relevant planning authority/ACP (as applicable). However, where the acquisition of land and associated permanent rights remove or materially constrain the landowners' ability to realise a particular development option on the affected lands, such effects may arise as a compensation claim to be assessed on the facts and evidence.

14.3.3 Adequacy of Impact Assessment on Farming Enterprises

1895. Four general observer submissions raised a specific issue relating to the level of assessment carried out for their standalone farming enterprise is inadequate:

Unique ID	Name of Individual or Organisation
WSP_SUB_74	John Hensey
WSP_SUB_90	James Waldron (Corr Consultancy on behalf of)
WSP_SUB_91	James Waldron (McEntegert Consultancy on behalf of)
WSP_SUB_100	A.M.R Limited

1896. This general observer submission from John Hensey stated that the landowner operates a standalone dairy farm and impact of the Proposed Project should be assessed as such. The submission continues that the impact will be far greater than reported in the EIAR. In addition, the submission outlines that there is no distinction between the impact on the land as a result of pipeline and also the proposed depot.
1897. This general observer submission from James Waldron stated that the EIAR had failed to properly assess the specific impact on this land holding, particularly the impact of the proposed overhead lines on the day-to-day operation of the farm which is a highly sensitive enterprise.
1898. The general observer submission from A.M.R. Limited stated that there was an inadequate assessment of impacts of the Proposed Project on their property, and that there was a lacunae in documents submitted in relation to their land.

14.3.3.1 Applicant's Response

1899. The Applicant notes the concerns raised in respect of the assessment of impacts on individual agricultural holdings, including the classification of land use (e.g. leased lands), proportional impacts on farm enterprises, and the distinction between temporary construction compounds (including pipe

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storage depots) and linear pipeline infrastructure, but disagrees that an inadequate assessment has been carried out.

1900. As outlined in EIAR Chapter 11 - Agriculture, the assessment has been undertaken at both individual farm holding level and within the broader agricultural context, based on detailed data collection including field surveys, aerial imagery review, and consultation with landowners where access was available. The methodology, as set out in Section 11.2 of EIAR Chapter 11, includes an appraisal of impacts having regard to farm sensitivity, enterprise type, and the scale and duration of land take (temporary and permanent).
1901. In relation to individual farm holdings, the EIAR provides an assessment (refer to Appendix A11.2 - Table of Impact Assessment - Pipeline Infrastructure) which identifies:
- The nature and extent of temporary and permanent land take;
 - The proportion of the overall holding affected;
 - The potential for severance, access disruption, and disturbance to farm operations; and
 - The resulting level of impact pre and post mitigation.
1902. This approach ensures that the specific characteristics of each holding, including enterprise type (e.g. dairy, dry stock, forestry and equine), land fragmentation, and reliance on affected parcels, are incorporated into the assessment.
1903. With regard to leased lands and land tenure, the assessment has been undertaken based on the best available information at the time of EIAR preparation, including land use surveys and stakeholder engagement. The classification of lands (e.g. leased or owner-operated) does not alter the assessment of physical impacts on agricultural productivity, which are determined by the extent of land take, severance, and disruption to farming activities, regardless of tenure arrangements. The Applicant acknowledges that leasing arrangements may vary over time; however, the assessment appropriately focuses on the functional agricultural use of the land, which is the relevant parameter for EIAR purposes.
1904. In respect of temporary construction compounds and pipe storage depots, these have been explicitly considered within the assessment as part of the temporary infrastructure associated with the Proposed Project (refer to Section 11.2.1 of EIAR Chapter 11 - Agriculture). These impacts are reflected in the construction phase impact ratings, with mitigation measures identified to address soil handling, reinstatement, and drainage (Section 11.5 of EIAR Chapter 11). The short-term duration of impact (typically 18 to 24 months) and the requirement for full reinstatement of agricultural land following construction are also clearly outlined in EIAR Chapter 11 and Appendix A11.2.
1905. The EIAR further acknowledges that temporary soil disturbance and compaction may give rise to residual effects, including potential impacts on soil structure and fertility. These are identified in Appendix A11.2 and are mitigated through adherence to established best practice in soil management, including:
- Segregation and reinstatement of topsoil and subsoil;
 - Drainage reinstatement; and
 - Post construction land rehabilitation measures.
1906. Following implementation of these mitigation measures, residual effects on agricultural productivity are generally assessed as Not Significant, with land capable of returning to its previous agricultural use, including more specialised enterprises, following reinstatement.

1907. In relation to proportional impacts on farm enterprises, the EIAR explicitly quantifies the percentage of land affected at holding level, which forms part of the basis for determining effect significance (Appendix A11.2). This ensures that the relative scale of impact on each enterprise, including more specialised operations, is appropriately reflected in the assessment.
1908. The Applicant also notes concerns regarding disturbance associated with construction activity (including traffic, noise, and proximity to farm residences). These aspects are assessed separately within the relevant EIAR chapters, including Noise and Vibration, Air Quality, and Traffic and Transport, and are further addressed through the Construction Environmental Management Plan (EIAR Appendix A5.1), with cumulative effects considered as part of the overall EIAR process.
1909. Finally, it is noted that compensation for both temporary and permanent impacts on agricultural holdings forms part of the overall mitigation strategy, as identified throughout the agricultural assessment, and is intended to ensure that landowners and occupiers are appropriately compensated for loss of land, disruption, and interference with farming operations.
1910. In relation to concerns regarding the placement of overhead ESB lines and associated pole structures within agricultural lands, particularly in more sensitive enterprises, including equine operations, the Applicant notes that the design approach seeks where feasible to locate such infrastructure as close as practicable to existing field boundaries, hedgerows, or other linear features, thereby avoiding placement within the centre of agricultural fields or paddocks.
1911. This approach is adopted specifically to:
- Minimise severance and fragmentation of agricultural land;
 - Avoid the need for additional fenced exclusion zones within fields; and
 - Reduce interference with routine agricultural practices, including livestock movement and machinery operations.
1912. Where it is not practicable to fully align infrastructure with existing boundaries, the design will seek to:
- Provide adequate clearance for farm machinery and livestock movement; and
 - Minimise obstruction through appropriate design.
1913. This will be informed by ongoing engagement with landowners, including consideration of farm type and operational requirements.
1914. The Applicant also confirms that farm-specific arrangements will be agreed, where required, to accommodate existing agricultural practices, including more sensitive enterprises.
1915. In relation to specifically the land of John Hensey, this was assessed as parcel reference TY089 and TY090 in EIAR Appendix A11.2 - Table of Impact Assessment - Pipeline Infrastructure. This concluded that while there would be a short-term significant effect during the Construction Phase, there would be no likely long-term residual effect given the mitigation measures proposed (such as measures for managing soils during construction and reinstating land to pre-construction condition following completion of the works).
1916. In relation to specifically the land of A.M.R, this was assessed as parcel reference TY002 in EIAR Appendix A11.3 Table of Impact Assessment – Infrastructure Sites. This concluded that the residual effects would not be significant either during construction or in operation.
1917. In relation to specifically the land of James Waldron, this was assessed as an equine farm (parcel KE072) and is address in the response in Section 14.3.4 of this report.

14.3.4 Potential Impact on Equine Stock / Enterprise

1918. Five general observer submissions raised a specific issue relating to the potential impact of the Proposed Project on the equine enterprise:

Unique ID	Name of Individual or Organisation
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_90	James Waldron (Corr Property Consultants on behalf of)
WSP_SUB_91	James Waldron (McEntegert Consultancy on behalf of)
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

1919. This general observer submission from Melissa Anne Kenny raised concerns that the land to be acquired for the Proposed Project forms a very significant proportion of her and her family's overall equine enterprise and will have serious negative implications on this enterprise, not just financially but also socially and personally.

1920. The general observer submissions from James Waldron raised concerns about the potential impact of construction on the sensitive thoroughbred horses on their landholding, noting that thoroughbred horses are very sensitive to their surrounding environment. The submissions stated that there is also an overall potential impact on the viability of their equine enterprise and associated financial implications. This submission also noted the risks of relocating horses during construction on horse welfare.

1921. The general observer submission from John Quinn and Sandra Frayne raised concern about the impact of construction on their equine stock and the need to relocate their horses. The submission also included a specialist equine report relating to the Proposed Project and their stock.

1922. The general observer submission from Robert Frayne stated that the construction of the Proposed Project will have a negative impact on his land and equine stock. The submission also specifically noted that the current proposed location of the washout valve on his land will also have an impact on his equine stock.

14.3.4.1 Applicant's Response

1923. The Applicant acknowledges the concerns raised by a number of observers in relation to the potential impact of the Proposed Project on equine enterprises, including potential effects on horse welfare, disruption during construction, and implications for ongoing agricultural operations, including reference to specialist equine advice submitted as part of the observations.

1924. The Applicant recognises that equine enterprises, particularly breeding and rearing operations, can be sensitive to environmental disturbance, including noise, vibration, visual stimuli, and changes in routine. Submissions received highlight concerns regarding potential impacts arising from construction activities in proximity to paddocks, stabling areas, and access routes, including disturbance to horses, the potential need for temporary relocation of stock, and implications for the management and viability of equine enterprises. As such, receptor-specific analysis was undertaken for specialised equine and stud farm operations. This was undertaken within the overall agricultural methodology, recognising the heightened sensitivity of horses to noise, vibration, and disturbance. A specialist equine veterinary consultant (Equine Veterinary Consultancy) applied equine-specific considerations reflecting horse health, welfare, and behavioural sensitivities, and the safety of handlers. These considerations followed the same overall methodology as the agricultural assessment (desktop study, farm walk, consultation

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with landholders, mapping review, and professional judgement), with additional factors such as potential for fright responses, foaling unit requirements, and adequacy of screening/fencing.

1925. It is noted that the construction phase of the Proposed Project will be short-term in nature, and that potential impacts on agricultural holdings, including those supporting equine enterprises, have been assessed within the broader agricultural assessment presented in EIAR Chapter 11 - Agriculture and Appendix A11.2 - Table of Impact Assessment - Pipeline Infrastructure, and will be managed through the implementation of established construction management and environmental mitigation measures.
1926. These measures are included in the CEMP, including its annexes (EIAR Appendix A5.1), which incorporates controls in respect of noise, vibration, dust, traffic management, and general site activities during the construction phase. Matters relating to noise and traffic are also assessed in detail within the relevant EIAR chapters (EIAR Chapter 6 - Noise & Vibration, and Chapter 7 - Traffic & Transport), with mitigation measures identified to reduce potential impacts on sensitive receptors, including residential properties and farm holdings.
1927. The EIAR also provides for:
- The use of appropriate construction methodologies and sequencing to minimise the duration of works in any given location;
 - The maintenance of safe and continuous access arrangements to agricultural lands and facilities, including those used for equine purposes; and
 - The reinstatement of lands following construction, including restoration of soil structure and drainage, to ensure their return to agricultural use (refer to EIAR Chapter 5, Chapter 11 and Appendix A11.2).
1928. With regard to equine-specific considerations, the Applicant confirms that site-specific management measures are included in Appendix A11.2 based on the advice of the equine specialist, and will continue to be developed in consultation with affected landowners, taking account of the nature of individual enterprises and the timing of sensitive periods, such as breeding and foaling, insofar as practicable. Where construction activities are required in proximity to equine facilities or paddocks, the Applicant will seek to:
- Implement temporary fencing or segregation measures, where required, to ensure animal safety; and
 - Coordinate construction activities, where feasible, to avoid peak sensitivity periods for equine enterprises.
1929. In relation to concerns regarding the potential need to relocate horses during construction, this may be considered, where necessary, on a case-by-case basis in consultation with landowners, having regard to animal welfare, operational requirements, and the duration and nature of the works. The Applicant notes that any such arrangements would be agreed with landowners as part of the overall management of construction-related impacts.
1930. With respect to longer term impacts on paddock condition and usability, the Applicant confirms that all lands affected during construction will be reinstated in accordance with established best practice for soil handling and land restoration, including the segregation and reinstatement of topsoil and subsoil, and the restoration of drainage systems. These measures are secured through the CEMP (EIAR Appendix A5.1) and the construction methodology set out in EIAR Chapter 5 – Construction & Commissioning and are further acknowledged in the agricultural assessment in EIAR Chapter 11 and Appendix A11.2. These measures are designed to ensure that lands are returned to their pre-construction condition, as far as practicable, and remain suitable for agricultural use, including equine enterprises, following completion of the works.

1931. In relation to specifically the land of Melissa Ann Kenny, this was assessed as parcel reference TY105 in EIAR Appendix A11.3 - Table of Impact Assessment – Infrastructure Sites. The agricultural interview and site inspection for the holding were undertaken in October 2024 as part of the standard EIAR agricultural assessment process. The purpose of this assessment was to identify the nature of the land use, farming activities, land management arrangements and any operational sensitivities associated with the holding at the time of survey. Particular attention was paid during the agricultural assessment process to identifying any specialised or sensitive agricultural enterprises along the Proposed Project corridor, including equine enterprises where relevant. The agronomy assessment process considered the nature and intensity of the farming activities being undertaken on affected holdings and, where indicators of a specialist or intensive equine operation were identified, those holdings were subject to further consideration by appropriately experienced equine specialists as part of the wider assessment process.
1932. This approach formed part of the broader assessment methodology applied to all potentially sensitive agricultural enterprises and was intended to ensure that holdings involving higher sensitivity activities, including specialised thoroughbred breeding, training or associated operational facilities, were appropriately identified and assessed where such activities were present.
1933. During the agricultural interview and accompanying site inspection, the lands in question were identified as agricultural grasslands used for leasehold grazing purposes. It was recorded that the lands were leased to a third-party equine operator for grazing activities. No intensive equine operational facilities or associated specialist infrastructure were identified on the subject lands during the assessment process. For clarity, the lands did not contain or was not found to be within close proximity to equine infrastructure (150-200 meters) such as training gallops, stabling complexes, breeding sheds, foaling units, horse walkers, loading yards or other specialist equine infrastructure typically associated with a high-intensity equine enterprise requiring a distinct or enhanced sensitivity assessment within the EIAR process.
1934. The assessment therefore, considered the lands within the context of agricultural grazing lands leased for pasture, which is consistent with the observed land use and information provided during the agricultural interview process.
1935. There are no handling or training facilities / buildings on site, and this is not considered an equine facility that requires additional assessment or has a higher level of sensitivity over and above the assessment undertaken. The threshold for classification as a specialist equine facility requiring enhanced assessment is generally informed by the presence of operational equine infrastructure, permanent equine management facilities, intensive training or breeding activity, or land whose primary function is intrinsically linked to such operations. These characteristics were not identified on the subject lands during the EIAR assessment process.
1936. The impacts on the farm holding have been fully assessed as parcel reference TY105 in EIAR Appendix A11.3 (Table of Impact Assessment – Infrastructure Sites). The assessment considered the likely effects of the Proposed Project on the agricultural holding, including land take, access, severance, drainage, disturbance during construction and residual operational effects following mitigation.
1937. The assessment incorporated standard and project-specific mitigation measures, including reinstatement of lands to pre-construction condition where temporary works occur, maintenance of access arrangements, reinstatement of drainage and boundary treatments, and measures to minimise interference with ongoing agricultural activities during construction. This concluded that mitigation measures in place, there would be no likely significant effect during either the construction or operational phases. Compensation will be provided to landowners and occupiers to address both temporary and permanent impacts on agricultural holdings resulting from the project.

1938. In relation to specifically the land of James Waldron, this relates to Drumachon Stud which was assessed as parcel reference KE072 in EIAR Appendix A11.2. This equine farm would be impacted by electricity poles that would be installed for a power connection to a line valve, which would result in a moderate effect in the long term, which is a likely significant effect. Specific measures for disturbance risks include siting above ground infrastructure to minimise proximity and visual prominence relative to sensitive equine activity areas, supported by screening/landscaping measures where relevant and by holding-specific engagement to manage equine welfare and safety considerations in practice. With regard to the siting of the polesets a design mitigation was incorporated into the Proposed Project to move one of the proposed poleset locations to the field boundary. Based on the advice from the equine specialist, there would not be any likely significant effect from the pipeline construction or operation on this equine farm. This is addressed further in Section 14.3.8 of this report.
1939. In relation to specifically the land of John Quinn and Sandra Frayne, and Robert Frayne, this relates to Lyreen Farm and was assessed as parcel reference KE049 in EIAR Appendix A11.2. This concluded that the farm would experience a moderate effect during construction, which is a significant effect. This would be partially due to noise effects. As explained in Section 8.2.1 of Chapter 8 – Noise and Vibration of this report, mitigation for the noise will be implemented. However, there would still be a short-term significant residual effect for the duration of construction works in this area. As such, and in line with the recommendation of the equine specialist, the Applicant are in active discussions with the landowners in relation to temporarily removing the resident horses from the farm for the duration of pipeline construction works in this area. Following completion of the construction works in this area, land would be reinstated to its pre-construction condition. As such, the assessment concluded that there would be no likely significant residual effect in the long-term.
1940. Overall, while the Applicant acknowledges that there will be short-term and localised effects during the construction phase, it is considered that, having regard to the nature and duration of the works, the implementation of mitigation measures, and ongoing engagement with landowners, the Proposed Project will not result in likely significant adverse effects on all but one of the equine enterprises in the long-term. There would be a likely significant residual effect on Drumachon Stud due to the location of the electricity poles for the power connection, as described above.

14.3.5 Potential Impact of Temporary Acquisition on Farming Enterprise

1941. Three general observer submissions raised a specific issue relating to the potential impact of the temporary land acquisition for the construction compounds on their farming enterprises:

Unique ID	Name of Individual or Organisation
WSP_SUB_84	Eamonn Dooley
WSP_SUB_86	Fintan Dunne
WSP_SUB_89	James Cullen Senior

1942. All three of these general observer submissions acknowledged the need for the Proposed Project but raised specific concerns about the potential impact of the temporary land acquisition for the construction compounds on their lands, in-combination with the acquisition required for the pipeline. The submissions state that this level of acquisition will make their farming operation unsustainable. The submissions state that previously, contractors secured construction compounds after winning contracts, typically using commercially active land with willing landowners, which worked effectively for all parties. The current plan to acquire compounds through compulsory purchase orders (CPOs) places an extra burden on commercial farmers already affected by the pipeline, threatening the viability of their farming operations.

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1943. The submission from Eamonn Dooley states that the proposal seeks to compulsorily acquire 4.783 hectares of land for a construction compound.
1944. The submission from Fintan Dunne states that the proposal seeks to compulsorily acquire 8.632 hectares of land for a construction compound.
1945. The submission from James Cullen Senior states that the proposal seeks to compulsorily acquire 2.236 hectares of land for a construction compound.

14.3.5.1 Applicant's Response

1946. The Applicant acknowledges the concerns raised in relation to the potential impact of the temporary acquisition of lands for construction compounds, particularly in combination with the land required for pipeline installation, and the potential implications of this for the viability of individual farming enterprises.
1947. Submissions received highlight concerns regarding the scale of temporary land take, the cumulative effect of compound and pipeline working areas, and the potential for disruption to established farming systems, including stocking levels, cropping activities, and participation in agricultural schemes. In this regard, it is noted that the extent and duration of temporary land take, including that associated with construction compounds, have been assessed at individual holding level as part of the agricultural impact assessment presented in EIAR Chapter 11 - Agriculture and Appendix A11.2 - Table of Impact Assessment - Pipeline Infrastructure. This assessment explicitly considers:
- The combined impact of pipeline working width and temporary compound areas;
 - The proportion of the overall holding affected; and
 - The potential implications for farm operations and enterprise continuity, including farming systems of varying intensities and sensitivities.
1948. The Applicant notes the observations regarding the approach to the identification and acquisition of construction compound locations, including suggestions that such areas could be identified at a later stage by contractors. In this regard, it is noted that the siting of construction compounds has been informed by a range of engineering, environmental, and land use considerations, and has been assessed within the EIAR on that basis.
1949. The Applicant refers to the Environmental Impact Assessment Report (EIAR) in Chapter 3 – Consideration of Reasonable Alternatives which sets out the identification and selection of preferred Temporary Construction Compounds and Pipe Storage Depots. This sets out the reasonable alternatives considered and the main reasons for the selected approach and expressly includes consideration of construction compounds within the scope of design decisions assessed. The outcomes of this selection process are evidenced in the EIAR, Figure 3.22 (“Proposed and Rejected Compound and Depot Sites”), which documents candidate sites and records whether each option was selected, potentially suitable but not selected, or rejected. The preferred compound/depot strategy and the compounds proposed for the construction phase are then set out in Chapter 5 – Construction and Commissioning of the EIAR.
1950. In relation to the suggestion that construction compounds should be left to contractors to acquire after award of the construction contract, the Applicant notes that this approach would introduce potential for significant uncertainty and programme risk on a strategic infrastructure project of this scale. Notwithstanding a clear preference for voluntary acquisition, it has not been possible to secure agreement with all affected parties and compulsory acquisition is required to ensure the project can be commenced and completed in a timely manner, with land requirements transparently assessed through the planning and environmental process rather than emerging ad hoc post-consent.

1951. From an agricultural perspective, the assessment presented in EIAR Chapter 11 and Appendix A11.2 considers the location, scale, and proportional impact of these compounds at individual holding level, including their interaction with field layouts and existing farming practices.
1952. The Applicant further notes that the temporary nature of these acquisitions is a key characteristic of the Proposed Project, with lands required for construction compounds generally occupied for a defined and limited duration, following which they will be reinstated and returned to agricultural use. With respect to construction impacts, the EIAR provides for:
- The use of appropriate construction methodologies and sequencing to minimise the duration of occupation of any given area;
 - The maintenance of access to remaining lands during construction; and
 - The reinstatement of lands following construction, including restoration of soil structure and drainage.
1953. These measures are secured through the CEMP (EIAR Appendix A5.1) and the construction methodology set out in EIAR Chapter 5 – Construction & Commissioning and are further relied in the agricultural assessment in EIAR Chapter 11 and Appendix A11.2.
1954. Following completion of the works, all temporarily acquired lands will be reinstated to their pre-construction condition, as far as practicable, to enable the resumption of agricultural activities.
1955. The Applicant acknowledges that, during the construction phase, the temporary loss of land may give rise to short-term constraints on farm operations, including stocking levels, cropping patterns, and participation in certain agricultural schemes. However, these impacts are short-term and localised in nature and have been considered in the assessment of impacts at individual holding level, as set out in EIAR Chapter 11 and Appendix A11.2. Overall, it is considered that, having regard to the short-term duration of land take, the implementation of mitigation measures, and the reinstatement of lands following construction, the Proposed Project will not result in likely significant adverse effects on the long-term viability of farming enterprises.
1956. In relation to specifically the lands of Eamonn Dooley, Fintan Dunne and James Cullen Senior, these were assessed as parcel reference OY119, OY117B and KE041 respectively in EIAR Appendix A11.2 - Table of Impact Assessment – Pipeline Infrastructure. This concluded that there would be no likely significant effect on OY119, and while there would be short-term significant effects during the Construction Phase on OY117B and KE041, there would be no likely long-term residual effects given the mitigation measures proposed (such as measures for managing access, drainage, fencing, crossing points and biosecurity measures during construction and reinstating land to pre-construction condition following completion of the works). To the extent that the landowners contend that temporary loss of use, disturbance, livestock management impacts, additional costs or financial consequences arise as a result of the temporary works, these are matters that can be addressed within the statutory compensation framework.

14.3.6 Potential Impact on Receiving Funding / Payments

1957. Three general observer submissions raised a specific issue relating to the potential impact of the Proposed Project on receiving funding from agricultural payments:

Unique ID	Name of Individual or Organisation
WSP_SUB_84	Eamonn Dooley
WSP_SUB_86	Fintan Dunne
WSP_SUB_89	James Cullen Senior

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1958. These general observer submissions raised concerns about the potential impact that the disruption during construction of the Proposed Project could have on their ability to maintain receiving funding from agricultural payments which have strict criteria that must be met for payment to be issued.

14.3.6.1 Applicant's Response

1959. The impact on area-based payments is considered in Chapter 11 – Agriculture of the EIAR. As stated in Section 11.5 of EIAR Chapter 11, this will be a matter for review, discussion with relevant landholders and potential compensation, which is outside the EIA process.

14.3.7 Land Condition Post-Construction

1960. Two submissions raised a specific issue relating to the condition of lands returned post-construction:

Unique ID	Name of Individual or Organisation
WSP_SUB_86	Fintan Dunne
WSP_SUB_114	Tipperary County Council

1961. The general observer submission from Fintan Dunne raised concerns about the whether the commitment to returning the land on his holding in the same condition as it was pre-construction is feasible given the construction works required to facilitate the Proposed Project.

1962. The prescribed body submission from Tipperary County Council raised concerns relating to the long term impacts on land use within the pipeline wayleave.

14.3.7.1 Applicant's Response

1963. The reinstatement of Temporary Working Areas is described in Section 5.8.3.11 of EIAR Chapter 5 – Construction & Commissioning, and Section 11.5 of EIAR Chapter 11 – Agriculture.

1964. On completion of the Proposed Project, all temporary works facilities would be removed, and the sites reinstated to their pre-existing condition, with the exception of the fixed Infrastructure Sites. This means the reinstatement of vegetation post-construction on a like-for-like basis wherever reasonably practicable. If affected, services, drainage, shelter belts, and linear features, including hedgerows and fence lines, will also be reinstated.

1965. Generally, the reinstatement operations would start with the removal of any temporary structures, e.g. temporary roads / geotextile, as may be applicable. The remediation of the subsoil would be undertaken by scarifying/ripping it with tractor mounted flat lift rippers to a minimum uniform depth of 600mm, taking care not to damage the field drainage and other services. The depth of ripping would be selected to scarify/loosen any material compacted during construction. In all cases the depth of ripping shall exceed the depth of subsoil compaction. All stones and roots over 150mm in diameter would be picked up and removed from the subsoil. Re-grading subsoil using excavators/graders would be carried out and would include side slopes, where applicable.

1966. The spreading of subsoil and later topsoil would be carried out during favourable weather conditions when the soil is drier and more friable. The subsoil stockpiled for reinstatement would be pushed evenly across the site area using excavators (with tractor shovels) and graders to leave it generally level. Then, the separately stockpiled topsoil would be similarly spread to present a neat and level appearance.

1967. At the same time as the site is being restored, excavator(s) would be used for the reinstatement of ditch banks, and boundary fences/walls. All stones/roots more than 50mm in diameter would be removed from the topsoil. The topsoil would then be given a final inspection, and corrected accordingly, to ensure

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it is neat and level in appearance. Generally, all areas would be reinstated to pre-existing ground conditions allowing for some settlement.

1968. If it is necessary to import topsoil onto the site, the topsoil would be screened for invasive species, weeds and roots, checked for quality, consistency, and soil structure ensuring that no stones more than 50mm in diameter, or debris, are contained within the topsoil. Any necessary consents would be sought. An Agronomist engaged by the Applicant would inspect and approve the source and supplier of the topsoil for the suitability of the proposed location. In all situations, the topsoil from the site which was cleared, stockpiled and protected during construction would be the priority for use during reinstatement.
1969. Reseeding would be carried out on completion of the topsoil spreading, if required; the rate of seeding, and the time and method of sowing, including application of fertiliser, shall be in accordance with best agricultural practice. Driving over the land, where topsoil has been put back, would be monitored by an Agronomist engaged by the Applicant and kept to a minimum, particularly in wet weather. Mechanical equipment heavier than standard tractors and trailers would not be allowed to travel back over the topsoil.
1970. The machines used for the reinstatement of topsoil and subsoil would be of a suitable ground bearing pressure to minimise compaction as much as is practicable.
1971. All reinstatement work will be undertaken in accordance with the requirements outlined in the Soil Management Plan devised for the Proposed Project (Annex B of EIAR Appendix A5.1 – Construction Environmental Management Plan).
1972. LLOs will be present on-site to monitor the stripping, handling, and storage of topsoil, and to record land use details for each affected holding.

14.3.8 Risks Associated with Pipeline Routing

1973. The general observer submission from James Waldron raised a specific issue relating to the risks associated with the proposed pipeline on his lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_90	James Waldron (Corr Property Consultants on behalf of)

1974. This general observer submission raised concerns about the health and safety risks and animal welfare risks posed by the current pipeline routing on his lands.

14.3.8.1 Applicant's Response

1975. The Applicant notes the landowner's description of a specialist equine enterprise and associated livestock management and acknowledges that equine breeding and youngstock management can be particularly sensitive to disturbance and changes to the operating environment.
1976. The impact on the agricultural holding was assessed and reported in EIAR Chapter 11 – Agriculture. The relevant land was identified as parcel reference KE072 in EIAR Appendix A11.2 - Table of Impact Assessment - Pipeline Infrastructure.
1977. The EIAR explicitly recognises stud farms and intensive equine facilities as high/very-high sensitivity receptors and confirms that the agricultural assessment methodology was refined for specialised equine and stud operations using input from an equine specialist so that equine welfare and handler safety sensitivities are robustly captured within the assessment framework.

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1978. As explained in the response in Section 14.3.4 of this report parcel reference KE072 would experience a moderate effect, which is a likely significant effect. This effect would primarily be the result of new electricity poles that would be installed for a power connection to a line valve.
1979. With regard to the pipeline construction, the Construction Working Width would be located approximately 100m from the land holding (and 650m away from the yard) with mature hedgerows between the areas of intensive equine activity and the easement corridor. Notwithstanding this, the Applicant recognises that equine enterprises, particularly those involving thoroughbred horses, may be sensitive to environmental disturbance, including noise, vibration, visual stimuli, and changes in routine. The submission highlights concern regarding the potential for construction activities, including the use of heavy machinery, lighting, and dust, to give rise to behavioural responses in horses, with consequent implications for animal welfare and handler safety.
1980. It is recognised that livestock, including horses, may exhibit a response to unfamiliar or sudden stimuli such as noise associated to construction activities; however, such responses are typically associated with short term disturbance and, in the context of the Proposed Project, are limited in duration and managed through the implementation of appropriate mitigation.
1981. In this regard, it is noted that the potential effects associated with pipeline construction activities are short-term in nature, with works progressing along the pipeline route such that any given section of land will be subject to construction activity for a limited duration only.
1982. The EIAR provides for the implementation of a range of mitigation measures and management controls, including those set out in the CEMP and its associated topic management plans (EIAR Appendix A5.1), which will address:
- Control of noise and vibration arising from construction activities;
 - Management of dust emissions;
 - Control of lighting associated with construction works; and
 - General site management practices to minimise disturbance to surrounding land uses.
1983. Additionally, EIAR Appendix A11.2 includes a specific mitigation measure for parcel reference KE072 in the form of temporary berms (bunds) of excavated soil, located on the stud farm side of the corridor and formed to an appropriate height, to add an additional layer of noise and visual attenuation/buffering during construction.

14.3.9 Permanent Loss of Agricultural Land

1984. The general observer submissions from Michael McKeogh and Michael and Mary Kinsella raised specific issues relating to permanent loss of agricultural land as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_93	Michael McKeogh
WSP_SUB_108	Michael and Mary Kinsella

1985. The general observer submission from Michael McKeogh stated that the lands proposed to be acquired to facilitate the Proposed Project form an integral and actively used component of his wider dairy enterprise and the acquisition will result in the permanent loss of an important agricultural unit. The submission outlines that the subject lands have been farmed by Michael and his predecessors for generations and form part of a lived rural environment and are central to the identity and daily working life of the landowner. The permanent loss of this unit will permanently sever this relationship and extinguish a family-farmed agricultural unit.

1986. The general observer submission from Michael and Mary Kinsella stated that the proposed permanent and temporary acquisition on their land for a pumping station and site compound will amount to 100% of their farmland at Coagh Upper and represents a disproportionate interference and destruction of their farm leaving the landowner landless and unable to carry on farming.

14.3.9.1 Applicant's Response

1987. The Applicant acknowledges the concerns raised in relation to the permanent loss of agricultural land and the potential implications of this for the viability of individual farming enterprises, including the role of such lands within wider farm operations and their long-standing use as part of established agricultural holdings.

1988. Submissions received also raise concerns regarding the combined effect of permanent and temporary land acquisition, including the potential for the complete loss of lands at specific locations and the resulting impact on the ability to continue farming.

1989. In this regard, it is noted that the extent of permanent and temporary land take has been assessed separately and in combination as part of the agricultural impact assessment presented in EIAR Chapter 11 - Agriculture and Appendix A11.2 (for the pipeline) and A11.3 (for infrastructure sites), including at individual holding level. This assessment considers:

- The extent of permanent land acquisition associated with above-ground infrastructure;
- The extent and duration of temporary land take associated with construction activities; and
- The proportional impact on the overall holding and farming enterprise.

1990. The Applicant acknowledges that, in certain instances, land parcels may be fully occupied on a short-term basis during the construction phase, including where such lands are required for construction compounds or working areas. However, such occupation is temporary in nature, and all lands not required for permanent infrastructure will be reinstated following completion of the works, in accordance with the measures set out in the CEMP (Appendix A5.1) and the construction methodology described in EIAR Chapter 5 – Construction & Commissioning.

1991. Following reinstatement, these lands will be returned to their pre-construction condition, insofar as practicable, to enable the resumption of agricultural use.

1992. With respect to permanent land take, the Applicant notes that this is limited to the footprint of specific above-ground infrastructure sites and does not extend to the entirety of lands subject to temporary acquisition. Accordingly, while it is acknowledged that permanent land loss may give rise to localised impacts on farm operations, these impacts have been assessed in the context of the overall holding and are not considered to result in the loss of entire farming enterprises.

1993. The Applicant also notes that the agricultural assessment has been undertaken based on the best available information at the time of EIAR preparation, including land registry data, aerial imagery, and site surveys, where access was available. In instances where access to lands or engagement with landowners was not possible, the assessment has been based on observable land use characteristics and available records, with holdings assessed on a parcel and ownership basis as identified within the EIAR.

1994. Accordingly, while it is acknowledged that individual parcels may be subject to temporary full occupation during the construction phase, the assessment considers the overall impact at holding level, including the distinction between temporary and permanent land take, and does not indicate that the Proposed Project would result in the permanent loss of entire farming enterprises.

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1995. The Applicant further recognises that the lands in question may form part of a wider agricultural system, including use as out-farms or as part of long-established family holdings, and that their loss may give rise to operational and social impacts, as highlighted in submissions. These factors have been taken into account in the agricultural assessment, including consideration of the role of such lands within the broader enterprise.
1996. Overall, it is considered that, having regard to the limited extent of permanent land take, the temporary nature of construction-related land occupation, and the implementation of reinstatement and mitigation measures, the Proposed Project is not anticipated to give rise to likely significant adverse effects on the long-term viability of farming enterprises.
1997. In relation to specifically the lands of Michael McKeogh and Michael and Mary Kinsella, these were assessed as parcel reference TY011/TY126 and OY070 respectively in EIAR Appendix A11.3 - Table of Impact Assessment - Infrastructure Sites. This concluded that while there would be short-term significant effects during the Construction Phase, there would be no likely long-term residual effects given the mitigation measures proposed (such as measures for managing soils during construction and reinstating land to pre-construction condition following completion of the works). While there would be permanent loss of land at these agricultural land holdings, compensation will be provided to landowners and occupiers to address both temporary and permanent impacts on agricultural holdings, including loss of land, reduced access, or interference with agricultural infrastructure and operations, as part of the mitigation strategy. Accordingly, the Applicant notes that the objection in relation to enterprise disruption and the consequences of permanent land loss are matters addressed through the statutory compensation process following confirmation/activation of the CPO.

14.3.10 Impact of Hedgerow / Tree Boundary Removal on Livestock

1998. Two general observer submissions raised a specific issue relating to the impact of hedgerow / tree removal on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

1999. These general observer submissions stated that removal of hedgerows and trees along their land boundaries required for the Proposed Project will impact their livestock that feed from and take shelter under these hedgerows / trees.

14.3.10.1 Applicant's Response

2000. In accordance with the mitigation hierarchy, the Proposed Project has been designed to avoid or reduce environmental effects where reasonably practicable, including the removal of trees and hedgerows. As set out in Section 5.9.3.1 of EIAR Chapter 5 – Construction & Commissioning, the mitigation hierarchy will continue to be applied during subsequent stages of the project. This will include, for example:
- Seeking opportunities to avoid removing all habitat within the Construction Working Width (i.e. retaining more habitat within the Planning Application Boundary);
 - Retain existing landscape features and biodiversity assets, including existing habitat, as far as reasonably practicable, taking account of the overall requirements of the Project Proposed and the construction works needed to deliver it; and
 - Retain hedgerows / tree lines that form the linear boundary of the Planning Application Boundary as far as reasonably practicable.

2001. As set out in Section 11.5 of EIAR Chapter 11 – Agriculture, any shelter removed during the Construction Phase, where it is not reasonably practicable to retain, will be reinstated, where appropriate. Hedgerow replanting will reflect the original species mix but will be selected to avoid any risk of damage to the pipeline. Replanting activities will be carried out in compliance with relevant Department of Agriculture, Food and the Marine regulations, including guidance on tree felling, hedgerow restoration, and environmental management. An appropriate aftercare programme will be implemented to ensure the successful establishment of replanted hedgerows.
2002. In relation to specifically the land of John Quinn and Sandra Frayne and Robert Frayne, this was assessed as parcel reference KE049 in EIAR Appendix A11.2 - Table of Impact Assessment – Pipeline Infrastructure. This concluded that while there would be a short-term significant effect during the Construction Phase, there would be no likely long-term residual effect given the mitigation measures proposed (which includes reinstating land to pre-construction condition following completion of the works, which will include shelterbelts and hedgerows).

14.3.11 Disproportionate Interference of the Proposed Project on Farmland

2003. The general observer submission raised a specific issue relating to the disproportionate impact of the Proposed Project on their farmland:

Unique ID	Name of Individual or Organisation
WSP_SUB_107	Mark Kinsella

2004. The general observer submission from Mark Kinsella stated that the acquisition of a between 50m to 100m wide strip of land to construct a 1.5 metre diameter pipeline is a disproportionate interference and destruction of a highly productive farm.

14.3.11.1 Applicant's Response

2005. The Applicant does not agree with the statement that the temporary and permanent land take for the Proposed Project is 'disproportionate'. The land that would be temporarily and permanently acquired is the land required to construct and operate the Proposed Project, including access and required mitigation measures for avoiding or reducing significant environmental effects.
2006. The Construction Working Width is the extent of temporary works area required for the construction of the Raw Water Rising Mains and the Treated Water Pipeline and their subsequent reinstatement. It would typically be 50m in width. As set out in Section 5.9 of EIAR Chapter 5 – Construction and Commissioning, the Construction Working Width needs to be 50m in width in order to provide sufficient space for:
- Excavating the trench for the pipeline;
 - Storing material that has been excavated including the separation of topsoil and sub-soil;
 - Managing surface water including drainage channels; and
 - An internal Temporary Construction Road to move construction vehicles up and down the construction corridor.
2007. The Construction Width would be wider to accommodate the following works:
- Access and egress to the public road network;
 - Construction of trenchless crossings for high voltage power lines, railway, road and watercourse crossings;
 - Areas required for surface water management including attenuation ponds;

- Temporary abstraction and discharge points; and
- Additional working width for ground conditions such as topography and soft ground, such as peat.

2008. The Construction Working Width would only be required during the Construction Phase. The 20m wide Permanent Wayleave would be positioned within this Construction Working Width. The 20m wide Permanent Wayleave would be required to facilitate access to the pipeline for operational purposes.

2009. As described in EIAR Chapter 5 – Construction and Commissioning, for each geographic section of the pipeline construction the pipeline construction would be over a total period of three years (excluding testing and commissioning). However, not all land would be required for the whole three-year period and further sub-division of the sections or phases into smaller, more manageable lengths (works packages) would allow this to be achieved. For example, the Contractors would aim to complete a length of pipeline construction between two designated access points in a single year. As a result, the works would be planned to reduce the period of time that land is out of agricultural use so that each landowner would not be affected for a period of more than 18–24 months (excluding returning to the land during the commissioning phase of the works).

2010. In relation to specifically the land of Mark Kinsella, this was assessed as parcel reference OY071 in EIAR Appendix A11.3 - Table of Impact Assessment - Infrastructure Sites. This concluded that while there would be a short-term significant effect during the Construction Phase, there would be no likely long-term residual effect given the mitigation measures proposed (such as measures for managing soils during construction and reinstating land to pre-construction condition following completion of the works).

14.3.12 Impact of Proposed New Stream Crossings During Construction

2011. Two general observer submissions raised a specific issue relating to the proposed location of a new access across streams on their lands to facilitate construction:

Unique ID	Name of Individual or Organisation
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

2012. These general observer submissions stated the proposals would interfere with the current crossing point of the stream on their lands and that it was agreed that a new temporary crossing location would be agreed with the Applicant. The submission continues that there has been a failure by the Applicant to confirm proposals on how to manage the relocation of the current designated route for the temporary crossing of the stream, and this would mean that access to the upper field will be denied in breach of their rights as protected by the constitution and statute.

14.3.12.1 Applicant's Response

2013. The Applicant notes the impact the pipeline route would have on access requirements across Lyreen stream (crossing ID WCX070). During Construction Phase planning, particular items will be discussed and agreed in advance of any works commencing and will include:

- Access requirements for livestock and vehicles to maintain suitable access throughout the duration of the works;
- Presence of any existing drainage, to maintain connections, or implement temporary solutions during construction works, and that appropriate permanent solutions are in place on completion of the works; and
- Presence of any existing services, e.g. water and power supplies to maintain services.

2014. The CEMP (EIAR Appendix A5.1) expressly provides that landowner discussions in advance of works include particular access requirements for livestock and vehicles and fencing requirements, to deliver appropriate temporary fencing and gates during construction (see mitigation measure A4 in the Register of Environmental Actions and Commitments, which is Annex G of EIAR Appendix A5.1). The Applicant has appointed LLOs who will remain in place throughout the construction, reinstatement and handover phases to address queries that landowners and stakeholders may have. They will enable communications with affected landholders and facilitate the reorganisation of farm enterprises at critical times during the Construction Phase. The works throughout will be executed under the supervision of the engineer acting on behalf of the Applicant.
2015. In addition, the Surface Water Management Plan (SWMP) (Annex A of EIAR Appendix A5.1 – Construction Environmental Management Plan) includes controls and mitigation for existing drainage and watercourse crossings, including trenchless and open-cut methodologies, and measures to avoid pollution and reinstate banks and channels to a condition at least as good as prior to construction, with monitoring and remedial works where required. While the SWMP is focused on water protection, it evidences that watercourse crossings are planned, controlled activities, governed by method statements and oversight.
2016. The LLOs are the Applicant's principal points of contact with landholders and will be the interface between the Applicant and the appointed Contractor. It will be the responsibility of the LLOs to maintain communication with landholders at all times during all aspects of works.
2017. Accordingly, the Applicant's position is that access to retained lands is not intended to be denied; temporary access arrangements are to be agreed and implemented in advance through the LLO process and the Contractor's detailed method statements under the CEMP framework, with reinstatement thereafter.

14.3.13 Cumulative Impact of All Construction Elements on Landowner Lands

2018. The following general observer submissions raised a specific issues relating to the cumulative impact of all construction elements on land:

Unique ID	Name of Individual or Organisation
WSP_SUB_65	Samuel Norris
WSP_SUB_74	John Hensey

2019. The general observer submission from Samuel Norris stated that the cumulative burden across hundreds of landowners should be proportionate and demonstrably necessary.
2020. The general observer submission from John Hensey stated that no assessment of the cumulative impact of all construction elements on the farm was provided in the planning application.

14.3.13.1 Applicant's Response

2021. It is not accurate to state that the cumulative effect on the landholding has not been assessed. The assessment of effects reported in EIAR Chapter 11 – Agriculture considers various potential impacts that could occur on agricultural landholdings from the Proposed Project during construction. This includes the following impacts:

- Loss of use of land for duration of Proposed Project Construction Phase;
- Short-term loss of use of land on or adjacent to the Construction Working Width;
- Short-term loss of land at the Construction Compounds and Pipe Storage Depots;

- Loss of services (water, power, paddock fencing);
- Disturbance caused by increased traffic volume due to construction;
- Disturbance caused by noise emanating from the Construction Phase works;
- Potential adverse impacts caused by dust emanating from the Construction Phase works;
- Impacts on shelter;
- Disturbance to farm operations;
- Effect on area-based payments;
- Interruption to drainage systems;
- Restriction on use of land for specialist crop production or animal husbandry adjacent to the construction works;
- Spread of noxious weeds and invasive species when soil is exposed;
- Spread of animal diseases; and
- Spread of soil-borne diseases.

2022. The effect on each individual agricultural landholding is presented in EIAR Appendix A11.2 and A11.3 for the pipeline and infrastructure sites respectively. The conclusions on the significance of effect considered all of the above impacts, where relevant to the landholding in question, as well as the assessment conclusions of other EIAR topics, such as Chapter 6 - Noise & Vibration, Chapter 7 - Traffic & Transport, Chapter 9 - Water, Chapter 10 - Soils, Geology & Hydrogeology and Chapter 12 - Air Quality. In relation to specifically the land of John Hensey, this was assessed as parcel reference TY089 and TY090 in EIAR Appendix A11.2. This concluded that while there would be a short-term significant effect during the Construction Phase, there would be no likely long-term residual effect given the mitigation measures proposed (such as measures for managing soils during construction and reinstating land to pre-construction condition following completion of the works).

2023. The Applicant acknowledges that there would be a cumulative burden across hundreds of landowners. The impact on regional and national agriculture is considered in the agriculture assessment. As set out in Section 11.5 of EIAR Chapter 11 – Agriculture, the Proposed Project would affect 0.0086% of national Utilisable Agricultural Area and 0.07% of combined county level Utilisable Agricultural Area. On this basis, it was concluded that the Proposed Project would have an imperceptible effect on national and regional agriculture. As set out in the response in Section 14.3.11 of this report, the Applicant considers the land take proportionate for delivering this nationally significant infrastructure.

14.3.14 Potential Impacts on Land Drainage on Specific Landholdings

2024. Eight general observer submissions raised a specific issue relating to the potential impact of the Proposed Project on drainage on their lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_91	James Waldron (McEntegert Consultancy on behalf of)
WSP_SUB_92	Judith Kohler
WSP_SUB_101	Edward Frayne
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

Unique ID	Name of Individual or Organisation
WSP_SUB_114	Tipperary County Council

2025. The general observer submissions from Danny Janssens, Gordon and Leslie Beattie, Judith Kohler, Edward Frayne, John Quinn and Sandra Frayne and Robert Frayne raised concerns about the potential impact of laying the pipeline on future drainage of their lands. Some of the submissions further note that any negative impact on the drainage of the land from the pipeline would have negative consequences for their lands.
2026. The general observer submission from James Waldron stated that the electricity grid infrastructure element of the Proposed Project on his land will have a negative impact on land drainage.
2027. This prescribed body submission from Tipperary County Council stated that the Proposed Project presents significant potential for adverse impacts on existing drainage patterns, land settlement and ponding, within the works area and on adjoining lands, and this is an area that requires detailed consideration by ACP and a commitment from the Applicant to resolve any post-construction drainage issues that may arise.

14.3.14.1 Applicant's Response

2028. The Applicant acknowledges the concerns raised in relation to potential impacts on drainage conditions, soil moisture regimes, and the water table, and the implications this may have for agricultural productivity. From an agronomic perspective, such factors are relevant in that they may influence soil trafficability, drainage performance, and the overall usability of agricultural lands.
2029. In this regard, the agricultural assessment presented in EIAR Chapter 11 - Agriculture and Appendix A11.2 - Table of Impact Assessment - Pipeline Infrastructure considers the potential for temporary disturbance to soils and field drainage systems during construction, including the need for drainage reinstatement and soil structure restoration. These effects are identified as temporary and are addressed through mitigation measures including appropriate soil handling, reinstatement of drainage infrastructure, and post-construction land rehabilitation.
2030. As per the response in Section 14.3.7 of this report, land will be reinstated to pre-construction conditions, and this includes any drainage if affected.
2031. Potential effects on groundwater levels and the water table, including any changes arising from construction, are assessed separately within EIAR Chapter 10 - Soils, Geology and Hydrogeology, while surface water is addressed within EIAR Chapter 9 - Water.
2032. The findings of these assessments, including the implementation of mitigation measures secured through the Construction Environmental Management Plan (EIAR Appendix A5.1) and associated management plans, are relied upon within the agricultural assessment in concluding that lands will be reinstated and returned to agricultural use following construction.

14.3.15 Recommended Mitigation

2033. The general observer submission from Yvonne Moloney recommended landowner-related mitigation to be attached to any grant of planning:

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney

2034. This general observer submission requested that it should be ensured that there is fair compensation for landowners affected by the 20m permanent wayleave.

14.3.15.1 Applicant's Response

2035. The Applicant notes the recommendation. As stated in Section 11.5 in EIAR Chapter 11 – Agriculture, the loss of agricultural land as a result of the construction of the RWI&PS, WTP, BPS, BPT, FCV and TPR would be a permanent loss and will be addressed in the statutory compensation process. The temporary loss of land within the Construction Working Width along the proposed pipeline route will be addressed by compensation to the landholder. Other impacts, such as loss of services, will also be subject to potential compensation. Financial compensation is not a mitigation measure and is separate from the EIA process.

14.4 Response to Specific Issues Raised by Prescribed Bodies

2036. There are no specific issues raised by prescribed bodies that have not already been covered in responses in Section 14.2 and 14.3 of this report.

15. Air Quality

15.1 Overview

2037. Twenty-six of the 114 submissions raised the issue of air quality in relation to the Proposed Project.
2038. An assessment of air quality was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 12 – Air Quality. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
2039. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding air quality. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 5 – Consideration of Reasonable Alternatives;
 - Chapter 6 – Proposed Project Description;
 - Chapter 7 – Construction and Commissioning;
 - Chapter 14 – Agriculture; and
 - Chapter 18 – Human Health.
2040. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
2041. The majority of submissions relating to air quality were in relation to potential dust impacts. These related to the risk of dust impacts on Peamount Hospital and / or agricultural lands during construction, which have been assessed in the EIAR and appropriate mitigation measures proposed, as set out in this Chapter.
2042. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding air quality;
 - Specific matters raised in general observer submissions regarding air quality; and
 - Specific matters raised by Prescribed Bodies regarding air quality.
2043. Within these sections there is some overlap and inter-relationship between the matters raised, and relevant, cross references have been included to link any General and Specific Matter responses.

15.2 Response to General Issues Raised

15.2.1 Potential for Odour Impacts

2044. The following submissions raised concerns about the potential for odour impacts as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_52	John Sadlier
WSP_SUB_71	Ballymore Eustace Trout and Salmon Anglers' Association
WSP_SUB_76	Melissa Anne Kenny

Unique ID	Name of Individual or Organisation
WSP_SUB_93	Michael McKeogh

15.2.1.1 Applicant's Response

2045. The submissions raised concerns that odour generated from the Proposed Project would affect local residents. However, the water treatment process does not release any malodours, unlike wastewater treatment where odour management is a key consideration. The processes associated with water treatment are based on physical separation of material from the raw water and they are not biological processes that generate odours, which would be the case with wastewater treatment. In addition, the chemicals used as part of the water treatment process (sulphuric acid, chlorine, caustic soda) do not generate malodours. As the Proposed Project would not result in any significant odour emissions, there would be no impact on local residents as a result of odour.

15.2.2 General Construction Dust Impacts

2046. The following submissions raised concerns about the potential for construction dust impacts as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_72	Carol Killeen
WSP_SUB_114	Tipperary County Council

15.2.2.1 Applicant's Response

2047. The submissions relate to potential construction dust impacts as a result of the construction of the Proposed Project. A construction dust assessment was carried out as part of the EIAR (see Chapter 12 – Air Quality). This concluded that dust effects during construction would be imperceptible (Not Significant) following the implementation of mitigation. Mitigation measures for dust are outlined in EIAR Appendix A12.1 - Dust Mitigation Measures and the Dust Management Plan (Annex E of Appendix A5.1 - Construction Environmental Management Plan). These measures are best practice, based on the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (2024), and are appropriate for sites that have a high level of risk associated with dust emissions. The full suite of dust mitigation measures includes detailed measures specific to demolition, earthworks, construction and trackout activities (trackout is the spread of dust from the wheels of vehicles from non-paved site areas to public roads). Examples of mitigation measures include, but are not limited to:

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- The appointed Contractor(s) will prepare Site Specific Dust Management Plans based on the measures and requirements in Annex E of the CEMP, as a minimum;
- Site layouts will be planned so that machinery and dust causing activities are located away from receptors, as far as is practicable;
- Erecting solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Daily on-site and off-site monitoring will be undertaken where receptors are nearby to monitor dust, record inspection results, and make sure the log is available to the local authority when asked; and
- Dust deposition, dust flux, or real-time PM₁₀ continuous monitoring locations will be chosen in consultation with the relevant local authority.

2048. As set out in Section 12.5 of EIAR Chapter 12 – Air Quality, the mitigation measures shall be strictly adhered to by the Contractor. The proposed mitigation measures will be reviewed at regular intervals during the Construction Phase to monitor the effectiveness of the procedures in place and to maintain the goal of reducing dust as far as practicable. These procedures will be monitored and assessed to check they are working satisfactorily. In the unlikely event of significant dust soiling occurring outside the site of major works areas or Construction Compounds, movements of materials likely to raise dust and dust-generating activities will be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations (as set out in the Dust Management Plan).

15.3 Response to Specific Issues Raised in General Observer Submissions

15.3.1 Potential Construction Dust Impacts on Specific Landowner Lands

2049. Five general observer submissions raised a specific issue relating to potential construction dust and air quality impacts resulting from the construction of the Proposed Project on specific landowner lands:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_74	John Hensey
WSP_SUB_90	James Waldron (Corr Property Consultants on behalf of)
WSP_SUB_92	Judith Kohler

2050. The general observer submission from Danny Janssens, Gordon and Leslie Beattie, and Judith Kohler raised concerns about the potential construction dust impact on crops and farm animals as a result of the construction of the Proposed Project.

2051. The general observer submission from John Hensey raised concerns about the impact of construction dust resulting from the construction depot that will be located in close proximity to the farm and the subsequent construction traffic and pipe haulage from the depot along the local road beside the farm.

2052. The general observer submission from James Waldron raised concerns about the potential construction dust impacts on his property, and particularly on the highly sensitive equine stock on the property.

15.3.1.1 Applicant's Response

2053. In relation to potential construction dust impacts on crops, farms, equine stock and/or property as a result of the construction of the Proposed Project, the mitigation and monitoring measures to control construction dust described in Section 15.2.2 of this report are applicable. Dust has been considered in the agricultural assessment, which includes consideration of equine facilities affected by the Proposed Project. As set out in EIAR Chapter 11 - Agriculture, the appointed Contractor will employ measures to prevent the spread of dust and mud onto adjoining lands, in line with the dust mitigation measures set out in the Air Quality chapter and Dust Management Plan.

2054. The assessment in EIAR Chapter 15 – Human Health has considered the direct health effects from dust on the population, as well as the indirect health effects related to food production and safety (in relation to agricultural lands). In both instances, the assessment concluded that there would be no likely significant effect from dust emissions and deposition.

15.3.2 Potential Construction Dust Impacts on Peamount Hospital

2055. The general observer submission from Peamount Healthcare raised a specific issue relating to potential construction dust and air quality impacts resulting from the construction of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_104	Peamount Healthcare

2056. This general observer submission raised concerns about potential construction-related air quality impacts on the patients and staff at Peamount Hospital.

15.3.2.1 Applicant's Response

2057. The submission from Peamount Healthcare relates to potential construction dust impacts on Peamount Hospital, including the risk of Aspergillus. The National Guidelines for the Prevention of Nosocomial Aspergillosis (HSE 2018) provide a risk assessment for Aspergillus, and preventative dust mitigation measures in Appendix B: Pre-Project Planning and Contractor Advice. The HSE guidance also provides information that will be included as part of tender documents. Prevention works, in addition to the standard dust mitigation with respect to Aspergillus, will involve advising that the windows on the façades of the hospital that are in closest proximity to the works are sealed where feasible to limit fugitive dust entering the hospital through windows. As set out in Section 12.5 of EIAR Chapter 12 – Air Quality, an Aspergillus Prevention Plan will be completed by a specialist to prevent Aspergillus spores spreading.

2058. Specific mitigation and monitoring measures relevant to Peamount Hospital are:

- The National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis during Construction/Renovation Activities (National Disease Surveillance Centre 2002) and National Guidelines for the Prevention of Nosocomial Aspergillosis (HSE 2018) will be complied with by the appointed Contractor;
- In relation to Aspergillus specifically, survey and prevention works will take place before construction commences by a competent Contractor in proximity to any sensitive buildings and in particular in proximity to Peamount Hospital;
- Prevention works will involve advising that the windows on the façades of the hospital that are in closest proximity to the works are sealed where feasible to limit dust entering the hospital through windows (in line with the National Guidelines for the Prevention of Nosocomial Aspergillosis);

- A site-specific Aspergillus Prevention Plan will be developed by a suitably qualified specialist prior to commencement of works on the site to prevent Aspergillus spores spreading. This will detail measures supplementary to the dust mitigation measures proposed for the Proposed Project and will be discussed in consultation with Peamount Hospital (this will include, for example, the sealing of windows where feasible); and
- A real-time particulate monitor to monitor PM₁₀ and PM_{2.5} concentrations will be used. This monitor has the capability to provide alerts if particulate concentrations are elevated above set trigger levels, as set out in the Dust Management Plan (Annex E of EIAR Appendix A5.1 – Construction Environmental Management Plan).

2059. The mitigation measures put in place to control construction dust, as described in Section 15.2.2 of this report, are also considered as mitigation measures with respect to Aspergillus as they will limit the potential for spread of the fungal spores.

2060. Peamount Hospital raised concerns on the sensitivity that has been assigned to the hospital in the air quality assessment. This comment is based on Table 12.18 in EIAR Chapter 12 – Air Quality, which summarises the sensitivity of the Termination Point Reservoir Construction Compound as 'medium' for dust soiling and 'low' for human health. The sensitivity ratings in Table 12.18 are based on the number of high sensitivity receptors within 20m of the Construction Compound and includes considerations of other factors such as background air quality, in line with the IAQM Guidance mentioned above. The 'medium' and 'low' sensitivity should therefore not be considered as the assessment stating that Peamount Hospital is low sensitivity, but rather that the general baseline environment is low-medium based on the assessment guidance applied. From a human health perspective, the hospital has been identified as a high sensitivity receptor, as is reflected in Section 15.3.3 of EIAR Chapter 15 – Human Health, which states – *'The Peamount Healthcare complex is assessed as a site of high sensitivity due to its vulnerable and dependent population with low capacity to adapt'*. Further, based on a precautionary approach the dust mitigation for the Proposed Project is based on a high level of risk associated with dust emissions, and the specific mitigation in relation to Aspergillus is based on National Guidelines for the Prevention of Nosocomial Aspergillosis.

2061. Peamount Hospital raised concerns around the fact that no specific assessment in relation to Aspergillosis was undertaken as part of the EIAR. The Applicant does not believe this is required, or indeed, that it would differ from the assessment carried out for the Proposed Project. As per the National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis, the methods for preventing the spread of Aspergillosis for major external works near a hospital, such as the Proposed Project, is to implement measures to control dust. This is precisely what the Proposed Project has done, with a mitigation strategy based on preventing dust becoming airborne and thus also suppressing potential fungal spores contained within the dust. The highest level of dust mitigation has been proposed for the Proposed Project which will avoid likely significant dust effects occurring. Consequently, it is not that an assessment has not been undertaken but rather that as part of the overall process the potential effects were identified and then avoided / reduced through appropriate mitigation measures.

2062. Peamount Hospital raised concerns in relation to the feasibility of implementing the Aspergillus measures at the hospital. The National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis during Construction/ Renovation Activities (National Disease Surveillance Centre 2002) and National Guidelines for the Prevention of Nosocomial Aspergillosis (HSE 2018) primarily relate to works within hospital buildings themselves rather than works external or adjacent to hospital settings. Therefore, it is recognised that many of the mitigations discussed within these documents will not be applicable to the TPR construction works. However, where specific measures are applicable, they will be implemented and this will be defined in the Aspergillus Prevention Plan. These measures would be supplementary to the dust mitigation measures proposed for the Proposed Project outlined in EIAR Chapter 12 – Air Quality and the Dust Management Plan and would be discussed in consultation with a competent specialist in the area of Aspergillus and Peamount Hospital.

2063. It is noted that High-Efficiency Particulate Air (HEPA) filters are not currently in place within the hospital, however, the reference to HEPA filtration within EIAR Chapter 12 – Air Quality was for example purposes only and is not specified as a requirement within any of the guidance documents referenced. In consultation with Peamount Hospital the closing of windows will be discussed and where feasible it will be advised that windows remain closed to further reduce the potential for dust to enter the hospital buildings. However, the primary aim of the Proposed Project's dust mitigation measures is to avoid dust becoming airborne in the first instance through the high level of mitigation proposed. As mentioned above, real-time monitoring will also be undertaken for the duration of the works at the TPR, which will allow works to be stopped and appropriate measures to be taken in the event that trigger levels are exceeded (as set out in Table 1.2 and 1.3 of the Dust Management Plan). Therefore, the risk of dust emissions, and by association, Aspergillus spores significantly impacting the hospital and its patients is low.

2064. The submission from Peamount Healthcare also raised a potential alternative permanent access into the TPR and this is considered further in Chapter 5 – Consideration of Reasonable Alternatives of this report.

15.3.3 Potential Odour Impacts Resulting from the Transport of Wastewater

2065. The general observer submission from Ballymore Eustace Trout and Salmon Anglers Association raised a specific issue relating to the potential for odour impacts on local residents as a result of the proposal to tanker wastewater:

Unique ID	Name of Individual or Organisation
WSP_SUB_71	Ballymore Eustace Trout and Salmon Anglers Association

2066. This general observer submission stated that the removal of foul wastewater from the WTP site during operation by tanker will lead to odour problems for the local communities and along the route to the WwTP where it is to be disposed of and does not appear to be sustainable in the long term.

15.3.3.1 Applicant's Response

2067. As set out in Section 4.8.6. of EIAR Chapter 4 - Proposed Project Description, foul wastewater generated on the WTP site would be directed to a holding tank with a level sensor to alert when emptying is required. It would then be tankered away for disposal at a licensed Wastewater Treatment Plant. Wastewater generated by operational staff on the site would be less than 1m³/d. There would be no odour impact from the transporting of the wastewater, as the foul wastewater will be in an enclosed tanker and would not be exposed to open air.

15.4 Response to Specific Issues Raised by Prescribed Bodies

15.4.1 Potential Dust Impacts at Peamount Hospital

2068. The prescribed body submission from the HSE raised a specific issue relating to potential dust impacts:

Unique ID	Name of Prescribed Body
WSP_SUB_94	Health Service Executive (HSE) - National Office for Environmental Health Services

2069. This prescribed body submission raised concerns about the Bergerhoff dust limit proposed to be used during construction and stated that it is important that the air quality in relation to Peamount Hospital mitigation strategy is implemented in consultation of Peamount Healthcare.

15.4.1.1 Applicant's Response

2070. In relation to dust monitoring, the HSE submission raises concerns that the Bergerhoff limit of 350mg/m²/day is a monthly average standard for daily dust deposition and therefore there may be periods of very high dust deposition over short periods that are still compliant with the limit value. Because of this, they recommend that dust mitigation should be continually implemented, and any complaints investigated and responded to, and additional mitigation measures implemented when required. The Applicant agrees with this and considers that this is consistent with what is set out in the CEMP in EIAR Appendix A5.1.
2071. As set out in Section 1.3.6 of the Dust Management Plan (Annex E of EIAR Appendix A5.1 – Construction Environmental Management Plan), the monthly dust deposition monitoring results will be reviewed, and any exceedances of threshold or limit values will be recorded. A suitably qualified and experienced person will investigate, as quickly as reasonably practicable, activities on-site that cause exceedances of limit values for dust to ascertain if any visible dust is emanating from the site or if any activities are occurring on-site that are not in line with the dust control measures. It should be noted that although 350mg/m²/day is the limit value for dust, a lower value of 200mg/m²/day (four-week average) will be used as a threshold value. Exceedance of this threshold value will trigger a review of site procedures to confirm mitigation measures are being implemented, and implementation of additional mitigation measures, where it is reasonably practicable to do so, when the threshold value is exceeded for three consecutive months (as per Table 1.3 in the Dust Management Plan). In addition to dust monitoring, daily and weekly visual inspections will be carried out, as per Section 1.3.6 of the Dust Management Plan. This will include, for example, regular dust soiling checks of surfaces within 100m of the site.
2072. In specific circumstances, in addition to the dust deposition monitoring, real-time particulate matter monitoring for PM₁₀ and PM_{2.5} will be undertaken. This will be in areas where there are highly sensitive receptors and the Applicant has committed to this for Peamount Hospital. This monitoring has the capability to provide alerts if particulate concentrations are elevated above set trigger levels (as set out in Table 1.2 and 1.3 of the Dust Management Plan). Where this monitoring is used, the real-time monitoring data will be reviewed at regular intervals, at a minimum four times daily. Alert trigger levels will provide a warning system when dust emissions become elevated. This will include an email/text alert to the relevant personnel. When an alert is issued the real-time data will be reviewed by the Environmental Specialist. An investigation into the cause of the alert will be conducted which will include a review of the activities occurring on site, particularly in close proximity to the real-time monitor. If necessary, any dust causing activities will be paused until additional mitigation measures can be put in place to reduce dust emissions.
2073. Section 1.3.1.1 of the Dust Management Plan sets out the complaints procedure in relation to dust emissions. All complaints will be investigated, and for complaints that are deemed valid, the works will be stopped, the working practices will be revised and additional mitigations put in place to reduce dust emissions.
2074. In relation to Aspergillus, the mitigation measures are described in the response in Section 15.3.2 of this report. As per the HSE advice, the Applicant agrees that the mitigation strategy must be and will be implemented in consultation with Peamount Healthcare.

15.4.2 Planning Conditions Specific to the Kildare County Council Area

2075. The prescribed body submission from Kildare County Council recommended a number of air-related conditions for proposed works within Kildare County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

2076. This prescribed body submission requested the following air-related conditions be attached to any grant of planning for the Proposed Project:

- The Applicant shall use Best Practice Measures to prevent / minimise dust during the Construction and Operational Phases, through the provision of proper maintenance, use and operation of all machinery to the satisfaction of the Planning Authority; and
- The total dust emissions arising from the on-site operations associated with the Proposed Project shall not exceed 350mg/m²/day, averaged over a continuous period of 30 days, when measured as deposition of insoluble particulate matter at any positions along the boundary of the site.

15.4.2.1 Applicant's Response

2077. The Applicant acknowledges the recommended conditions and requirements within the submission from Kildare County Council. The Applicant is committed to ongoing consultation with Kildare County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements.

2078. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

2079. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.

2080. The Applicant considers that the Dust Management Plan (Annex E of EIAR Appendix A5.1 – Construction Environmental Management Plan) fully addresses the requirements set out by the Planning Authority by providing a robust suite of mitigation measures to control construction dust.

15.4.3 Planning Conditions Specific to the Offaly County Council Area

2081. The prescribed body submission from Offaly County Council recommended a number of air-related conditions for proposed works within Offaly County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

2082. This prescribed body submission requested the following air-related conditions be attached to any grant of planning for the Proposed Project:

- The Applicant shall take reasonable measures to mitigate any environmental dust nuisance which may arise during construction. Construction shall take place during working hours 7am to 6.30pm Monday to Friday and 8am to 1.30pm Saturday unless otherwise authorised by the Planning Authority; and
- Dust suppression shall be undertaken under dry and windy conditions to ensure that dust deposition does not exceed 350mg/m²/day. Details of a monitoring programme for the dust shall be submitted to, and agreed in writing with, the Planning authority prior to commencement of development. Details to be submitted shall include monitoring locations, the commencement date and the frequency of monitoring results.

15.4.3.1 Applicant's Response

2083. The Applicant acknowledges the recommended conditions and requirements within the submission from Offaly County Council. The Applicant is committed to ongoing consultation with Offaly County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant would note that such conditions need to be related to the working hours as set out in the CEMP in EIAR Appendix A5.1 (which are slightly different to those quoted by the Council), or as per working hours conditioned by ACP in the event that the planning permission is granted.
2084. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.
2085. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.
2086. The Applicant considers that the Dust Management Plan (Annex E of EIAR Appendix A5.1 – Construction Environmental Management Plan) fully addresses the requirements set out by the Planning Authority by providing a robust suite of mitigation measures to control construction dust, noting that the working hours suggested by the Planning Authority are not consistent with the working hours in the EIAR or CEMP.

16. Climate

16.1 Overview

2087. Nineteen of the 114 submissions raised the issue of climate in relation to the Proposed Project.
2088. An assessment of climate was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 13 - Climate. The assessment complied with the relevant legislation, standards and guidance as set out in that chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
2089. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding climate. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 5 – Consideration of Reasonable Alternatives;
 - Chapter 6 – Proposed Project Description;
 - Chapter 7 – Construction and Commissioning;
 - Chapter 11 – Water (Hydrological Modelling and Water Levels); and
 - Chapter 23 – Risk of Major Accidents and/or Disasters.
2090. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
2091. A number of submissions were specific to climate. These included submissions related to the potential carbon impacts from the Proposed Project, which have been assessed in the EIAR and appropriate mitigation measures proposed, and submissions relating to the carbon assessment and its adequacy, which has been undertaken in accordance with relevant legislation with regard to best practice guidelines.
2092. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding climate;
 - Specific matters raised in general observer submissions regarding climate; and
 - Specific matters raised by Prescribed Bodies regarding climate.
2093. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.

16.2 Response to General Issues Raised

16.2.1 Potential Climate Impacts

2094. The following submissions raised concerns about the potential for climate impacts as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens

Unique ID	Name of Individual or Organisation
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_92	Judith Kohler

16.2.1.1 Applicant's Response

2095. The impact of the Proposed Project on climate is assessed in EIAR Chapter 13 - Climate. The climate assessment quantifies the greenhouse gas (GHG) emissions from the Proposed Project over its lifetime, from construction to operation. The assessment compares these emissions to relevant carbon budgets, targets and policy to contextualise the magnitude of impact.
2096. During construction, the main risk to climate would be from embodied carbon in construction materials, loss of carbon sinks such as forestry and peat, and the greenhouse gas emissions from construction vehicles. Design measures are embedded into the Proposed Project to reduce carbon emissions during construction, such as reducing the amount of materials, and therefore embodied carbon, required to construct the Proposed Project and in turn reducing construction traffic to reduce carbon from vehicle emissions. Further mitigation measures are proposed, for example:
- Use of a low carbon concrete to reduce embodied carbon from concrete;
 - Using hydrotreated vegetable oil in construction plant and equipment instead of diesel to reduce carbon emissions from construction vehicles, and using electric construction equipment where feasible;
 - Use of recycled materials to reduce the embodied carbon from new materials; and
 - Using renewable energy for Construction Compounds connected to the electricity grid (rather than using diesel or petrol generators).
2097. The Proposed Project can be considered to align with the requirements set out in the national Climate Action Plan, such as procuring from national suppliers that meet the carbon reduction targets set out in the Climate Action Plan (and similar targets for international suppliers).
2098. During operation, the main risk to climate would be carbon emissions from power requirements. Design measures are embedded into the Proposed Project to reduce carbon emissions during operation, such as improving energy efficiency, including solar panels at the Infrastructure Sites, recycling wastewater within the Water Treatment Plant, and optimising the design (for example, by only using a single Treated Water Pipeline, therefore reducing embodied carbon from manufacturing the pipe). Further mitigation measures are proposed, including a Corporate Power Purchase Agreement to use electricity generated from renewables for 100% of operational electrical power.
2099. Total annualised GHG emissions from the Proposed project would be equivalent to 0.04% of Ireland's 2030 Non-ETS target of 22.72 MtCO₂eq. Total annualised industry, electricity, transport and waste emissions from the Proposed Project would be less than 1% of the relevant 2030 sectoral ceilings (see response in Section 16.2.3 of this report for further details).
2100. As explained in Section 13.6 of EIAR Chapter 13 - Climate, the Proposed Project can be considered to align with Ireland's trajectory towards net zero by 2050 as it has reduced its emissions through embedded design and mitigation measures in alignment with the Climate Action Plan. On this basis, there would be no likely significant effect on climate from the Proposed Project.
2101. The climate assessment also identifies the impact of a changing climate on the Proposed Project and receiving environment. The assessment considers the Proposed Project's vulnerability to climate change and identifies adaptation measures to increase climate resilience. As set out in Section 13.4.5 of EIAR Chapter 13 - Climate, the Proposed Project includes design measures to reduce the impact of

future climate hazards. This includes, for example, avoiding areas of floodplain, or where this has not been feasible, including design measures to mitigate the risk (e.g. flood relief culverts along the length of the WTP access road where it crosses floodplain). There are elements of the design that will be considered at detailed design, such as choice of building materials and calculating appropriate wind loads. Considering the current design and future detailed design considerations, the vulnerability of the Proposed Project to climate hazards is assessed to be low. There would therefore be no likely significant effect in terms of vulnerability of the Proposed Project to climate change.

16.2.2 Potential Climate Impact from Hedgerow / Tree Removal

2102. The following submissions raised concerns about the potential for climate impacts as a result of hedgerow and / or tree removal required to facilitate the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_01	Danny Janssens
WSP_SUB_03	Gordon and Leslie Beattie
WSP_SUB_92	Judith Kohler
WSP_SUB_101	Edward Frayne
WSP_SUB_103	John Quinn and Sandra Frayne
WSP_SUB_105	Robert Frayne

16.2.2.1 Applicant's Response

2103. The assessment reported in EIAR Chapter 13 - Climate considers the loss of hedgerows and trees, along with other land uses such as peat, and this forms the part of the assessment of likely significant effects on climate. As explained in Chapter 13 - Climate, the calculation of GHGs from constructing the Proposed Project includes land clearance activities (i.e. the carbon emissions from the act of clearing vegetation) as well as land use change (i.e. the loss of carbon stored in vegetation, including trees and hedgerows). The GHG emissions associated with these elements, after the application of mitigation measures, are included in Table 13.31 of EIAR Chapter 13 - Climate. There would be 508 tonnes CO₂eq from clearance activities, and 148 tonnes CO₂eq from land use change (combined, this equates to 0.09% of the total Construction Phase GHG emissions).

2104. As stated in EIAR Chapter 13 - Climate, as well as EIAR Chapter 8 – Biodiversity, the design has reduced vegetation loss as far as practicable through embedded mitigation (such as routing the pipeline to avoid sensitive habitats). Mitigation will take the form of replanting temporary vegetation loss like for like within the Construction Working Width, mosaic habitat planting (of trees and scrub) in the 20m wide Permanent Wayleave where there is permanent loss of woodland due to the pipeline and restrictions to planting in the wayleave, and the landscape planting proposals at the infrastructure sites.

16.2.3 Lifecycle Carbon Assessment and Carbon Budgets

2105. The following submissions raised concerns relating to a full lifecycle carbon assessment and carbon budgets, including that the planning application does not convincingly demonstrate a full lifecycle carbon assessment or alignment with carbon budgets:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_62	Mountshannon Community Council

16.2.3.1 Applicant's Response

2106. The Applicant does not agree that a lifecycle carbon assessment has not been undertaken. As set out in Section 13.2.2 of EIAR Chapter 13 - Climate, to establish the scope of the assessment for GHG emissions, the lifecycle stages and categories from the Transport Infrastructure Ireland (TII) Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document (PE-ENV-01104), which is based on the modular approach from PAS2080:2023 Carbon Management in Infrastructure specification (British Standards Institution), were reviewed. The lifecycle stages of relevance to the Proposed Project are the Before-Use stage and the Use stage, which include GHG emissions from:

- Embodied GHG emissions within construction materials;
- Fuel consumed for material, plant, and construction worker transportation;
- Site clearance, groundworks, excavation, on-site energy and water use, and waste management;
- Land use change (e.g. habitat loss and planting);
- Maintenance and repair activities; and
- Operational energy and water use, operational process, and operational transportation.

2107. The End-of-Life stage was not considered relevant for this assessment as the Decommissioning Phase of the Proposed Project has not been assessed. Potable water treatment and conveyance assets are usually rehabilitated and maintained in a long service life.

2108. Construction and operation GHG emissions from the above activities have been quantified pre- and post-mitigation in Sections 13.4 and 13.6 of EIAR Chapter 13 - Climate.

2109. As explained in Section 13.2 of EIAR Chapter 13 - Climate, project-related GHG emissions are assessed at a national scale in terms of alignment with carbon budgets and sectoral emissions ceilings. Ireland has a national carbon budget of 295 MtCO₂eq for the period 2021 – 2025 and a budget of 200 MtCO₂eq for the period 2026 – 2030. The 2023 Climate Action Plan provided that the economy-wide carbon budgets will be supplemented by sectoral emissions ceilings, setting the maximum amount of GHG emissions that are permitted in a given sector of the economy during each five-year carbon budget. The sectoral emission ceilings for each sector were first published in July 2022 and are reproduced in Table 13.4 of EIAR Chapter 13 - Climate. The Proposed Project is implementing mitigation measures where appropriate to align with the Climate Action Plan and to reduce the impact to climate. As per Table 13.31 and 13.32 of EIAR Chapter 13 - Climate, the total annualised construction phase emissions associated with the Proposed Project would be 6,053 tonnes CO₂eq. When post-mitigation operational phase emissions of 5,575 tonnes CO₂eq are also included, this equates to total project emissions of 11,628 tonnes CO₂eq, this is equivalent to 0.04% of Ireland's 2030 Non-ETS target of 22.72 MtCO₂eq. Total annualised industry, electricity, transport and waste emissions from the Proposed Project will be less than 1% of the relevant 2030 sectoral ceilings, and will not result in a significant effect on climate as per the conclusions of EIAR Chapter 13 - Climate.

2110. The submission states that the Proposed Project should include mitigation commitments in relation to climate. As set out in the response in Section 16.2.1 of this report, the Proposed Project includes mitigation measures for reducing construction and operational GHG emissions. These mitigation commitments are also included in the Register of Environmental Actions and Commitments in Annex G of the Construction Environmental Management Plan (Appendix A5.1 of the EIAR). This includes a commitment to implement a whole life Carbon Management Plan aligned to PAS2080 to inform detailed design, build and operation.

16.2.4 Climate Adaptation

2111. The general observation submission from Joanne Skehan states that climate adaptation must be considered and building a system reliant on consistent river flows may prove vulnerable under intensified drought patterns:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan

16.2.4.1 Applicant's Response

2112. The Applicant agrees that it is necessary and essential that climate adaptation with regard to drought must be considered and that it what has been done and reported in the EIAR. A detailed assessment of the vulnerability of the Proposed Project to climate change has been included in EIAR Chapter 13 - Climate.

2113. Drought conditions were included in this assessment with no significant risks identified as outlined in Table 13.28 of EIAR Chapter 13 - Climate. The potential impact of increased dry periods due to climate change is discussed in Section 13.4.5.9 of EIAR Chapter 13 - Climate and has been assessed in EIAR Appendix A9.1 - Abstraction Assessment. EIAR Appendix A9.1 describes the potential impacts of the abstraction on surface water receptors, including Lough Derg, Parteen Basin, the River Shannon and the various tributaries. The summary of the assessment is provided in EIAR Chapter 9 - Water. Section 6 and Annex A - Hydrological Modelling Report of EIAR Appendix A9.1 detail the approach taken for considering how abstraction may be affected by a RCP8.5 Upper 75th allowance scenario for climate change by 2080. The results of the abstraction assessment show that the abstraction is not considered likely to result in a significant effect on any of the surface water receptors, including during a drought and/or as a result of the RCP8.5 Upper 75th allowance climate change scenario.

2114. Climate in relation to the abstraction and hydrological modelling is further addressed in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

16.2.5 Alignment of the Proposed Project with Climate Legislation

2115. The following submissions raised concern about the Proposed Project's alignment to climate legislation requirements and climate targets. This includes compliance with the EU climate legislation, the Climate Action and Low Carbon Development Act 2015, and national climate objectives/targets/obligations:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_26	River Shannon Protection Alliance Company Ltd
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_38	Cllr. Séamie Morris
WSP_SUB_44	Eric Conroy
WSP_SUB_59	Melina Sharp & Michael Eversen
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_70	Tom and Mary Scully
WSP_SUB_110	Clare County Council
WSP_SUB_114	Tipperary County Council

16.2.5.1 Applicant's Response

2116. The European Climate Law¹⁰ sets legally binding greenhouse gas emissions reduction targets for the EU and member states (including Ireland) including:

- Reduction of net greenhouse gas emissions (emissions after deduction of removals) by at least 55% compared to 1990 levels by 2030;
- Reduction of net greenhouse gas emissions (emissions after deduction of removals) by 90% compared to 1990 levels by 2040; and
- Reducing emissions to net zero by 2050.

2117. The Irish Climate Action and Low Carbon Development Act 2015 (as amended in 2021: the 'Climate Act') sets the following objective. *'The State shall, so as to reduce the extent of further global warming, pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy'*. The Climate Act also provides for climate action plans, climate action strategies, adaptation plans, carbon budgets, and sectoral emissions ceilings (among other matters).

2118. The Proposed Project climate assessment has been undertaken in accordance with best practice guidance, including TII Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) and Institute of Sustainability and Environmental Professionals (ISEP) guidance on Assessing Greenhouse Gas Emissions and Evaluating their Significance. TII refer to the ISEP guidance which states that the crux of assessing significance is *'not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050'*. As set out in Section 13.2.6 of EIAR Chapter 13 - Climate, significance is determined with consideration of the following two factors:

- The extent to which the trajectory of GHG emissions from the project aligns with Ireland's GHG trajectory to net zero by 2050 (the Proposed Project has also taken into consideration the Applicant's own target to achieve net zero by 2040); and
- The level of mitigation taking place.

2119. In line with these considerations, a not significant effect (minor adverse impact) is defined, based on the TII guidance, where:

- The project's GHG impacts are mitigated through 'good practice' measures;
- The project has complied with existing and emerging policy requirements; and
- Fully in line to achieve Ireland's trajectory towards net zero (and the Applicant's own target to achieve net zero by 2040).

2120. As set out in Section 13.6.4 of EIAR Chapter 13 - Climate, the Proposed Project can be considered to align with Ireland's trajectory towards net zero by 2050 as it has reduced its emissions through embedded design, mitigation measures and alignment with the Climate Action Plan. Alignment with PAS2080, implemented through a whole-life Carbon Management Plan during detailed design, has the potential to push the design of the Proposed Project beyond current design standards, further reducing its impact on GHG emissions. As such, it is concluded that the Proposed Project aligns with the significance criteria described above and would therefore have a long term, minor adverse, Not Significant effect on GHG emissions.

¹⁰ Regulation (EU) 2021/1119 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law').

2121. The Proposed Project GHG emissions have also been assessed against the national carbon budgets and sectoral emission ceilings, as explained in the response provided in Section 16.2.3 of this report.
2122. EIAR Chapter 13 - Climate has demonstrated how the Proposed Project is consistent with the objectives of section 15 of the Climate Action and Low Carbon Development Act 2015 (as amended). The EIAR has carried out a greenhouse gas emissions assessment and assessed the Proposed Project's resilience/adaptation to climate change.
2123. The Greenhouse Gas Emissions assessment considered the Proposed Project's GHG emissions over its lifetime. The assessment analysed these emissions in the context of the relevant carbon budgets, targets and policies to ensure consistency with the most recent approved climate action plan and the most recent approved national long term climate action strategy, and with measures in furtherance of the national climate objective. This complies with subsections 15 (1) (a), (b), (d) and (e) of the Climate Action and Low Carbon Development Act 2015 (as amended).
2124. The Climate Change Vulnerability assessment identified the impact of a changing climate on the Proposed Project and receiving environment in the context of the most recently approved national adaptation framework and approved sectoral adaptation plans. The assessment considered the Proposed Project's vulnerability and adaption to climate change and identified adaptation measures to increase resilience, as discussed in Section 13.6.3 of EIAR Chapter 13 - Climate. This covers section 15(1)(c) and (e) of the Climate Action and Low Carbon Development Act 2015 (as amended).
2125. In addition, the purpose of the Proposed Project is ensuring resilience in the water supply to the Eastern and Midlands Region. Climate change is one of the factors which increases the vulnerability of this supply and therefore the need for the Proposed Project is directly linked to future climate adaptation. The assessments undertaken in EIAR Chapter 13 - Climate and outlined above along with the mitigation measures set out in Chapter 13 pursue the furtherance of the national climate objective and the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State as far as practicable as required by section 15(1)(d) and(e) of the Acts.

16.3 Response to Specific Issues Raised in General Observer Submissions

16.3.1 Inadequate Assessment of Carbon Dioxide Release due to Mass Soil Excavation

2126. The general observer submission from Edward Frayne raised a specific issue relating to carbon dioxide assessment of the mass excavation of soil to facilitate the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_101	Edward Frayne

2127. This general observer submission stated that no thorough impact study of release of carbon dioxide into the atmosphere from mass excavation of soils was undertaken for the EIAR.

16.3.1.1 Applicant's Response

2128. As explained in the response in Section 16.2.2 of this report, the climate assessment reported in EIAR Chapter 13 - Climate included GHG emissions from land clearance and land use change and this formed the part of the assessment of likely significant effects on climate. This includes the clearance of vegetation and agricultural land, as well as the loss of carbon sinks such as trees and peat. In addition, the assessment of Construction Phase GHG emissions also considers excavation works. As stated in Table 13.31 of EIAR Chapter 13 - Climate, there would be 3,080 tonnes CO₂eq from excavation (this equates to 0.41% of the total Construction Phase GHG emissions). The design has sought to reduce

GHG emissions associated with soil loss by, for example, avoiding areas of sensitive peat bog, such as undisturbed peat or active raised bog, which act as a carbon sink.

16.3.2 Potential Impact of the Proposed Project on Renewable Energy Generation

2129. The following submissions raised specific concerns about the potential impact of the Proposed Project on existing renewable energy generation:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Protection Alliance Company Ltd
WSP_SUB_38	Cllr. Séamie Morris
WSP_SUB_67	Senator Dee Ryan
WSP_SUB_112	Limerick County Council

2130. The general observer submissions from the River Shannon Protection Alliance Company Ltd and Cllr. Séamie Morris state that there would be a reduction in water available for renewable energy production. However, they also suggest that removal of Ardnacrusha would reduce the renewable share by only 1.2 percentage points, a marginal change that does not justify disproportionate ecological and hydrological impacts.

2131. This general observer submission from Senator Dee Ryan stated that there are concerns locally that a further extraction of water from Parteen Basin, which also supplies water for hydroelectricity generation at Ardnacrusha, would result in a further reduction in renewable energy generation and would negatively impact on achieving climate action targets.

2132. The prescribed body submission from Limerick County Council stated that the proposed abstraction will be from the water allocated for power generation, and this will reduce the amount of power that the ESB will be able to produce. The submission continued that, as this is carbon neutral electricity, the impact on Ireland achieving its carbon reduction goals under the Climate Act is recommended to be assessed and taken into account and compensatory carbon neutral power generation should be identified.

16.3.2.1 Applicant's Response

2133. Section 13.4.4.1 in EIAR Chapter 13 – Climate addresses the loss of renewable energy generation from Ardnacrusha. The Proposed Project may result in a minor reduction in renewable power generation from the Ardnacrusha Generating Station, as water that would usually be used for hydropower is instead abstracted for drinking water purposes. This in turn could increase carbon emissions if power is instead generated from fossil fuels to make up for the reduction of power generated from Ardnacrusha. There are many factors that would affect whether there would be a reduction in power generation from Ardnacrusha, and if so, the amount it would be reduced by, including whether Ardnacrusha is generating at full capacity (the actual generating rate is typically substantially below this), whether the Proposed Project is abstracting at full capacity (during periods of peak demand), and other uses in Parteen Basin that affect water levels.

2134. While there may be peak periods where renewable power generation is reduced, it is considered that over a normal average year of operation this impact would be negligible as approximately 90%–95% of the long-term average annual flow in the Shannon at Parteen Weir (which is approximately 180m³/s), is directed through Ardnacrusha (with a minimum statutory compensation water flow of 10m³/s directed to the lower Shannon at Parteen Weir) and in comparison the average abstraction for the Proposed Project would be 1.78m³/s in 2050. The Proposed Project abstraction would simply be another factor, alongside existing considerations like predicted rainfall and power generation demand, that the ESB would take account of during their daily operations as they carefully manage water levels within the

Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Additionally, over the lifetime of the Proposed Project, the impact would further reduce as the proportion of electricity generated from renewable sources in Ireland increases. Therefore, for the purpose of the climate assessment, any change in carbon emissions from a reduction of renewable power generation at Ardnacrusha would be imperceptible and would not affect the conclusions on likely significant effects.

2135. In relation to the point raised by the River Shannon Protection Alliance Company Ltd and Cllr. Séamie Morris regarding the removal of Ardnacrusha generating station to improve ecology and hydrology, this is not within the scope of the Proposed Project.

16.3.3 Embodied Carbon

2136. The general observer submission from James Crowley raised specific concerns about embodied carbon:

Unique ID	Name of Individual or Organisation
WSP_SUB_50	James Crowley

2137. This general observer submission stated that the Applicant's Sustainability Strategy aims for net-zero carbon by 2040, and the submission estimated that the 170km steel pipe will utilise up to 180,000 tonnes which embodies up to 350,000 tons of CO₂ emissions. The submission continued that, as this is just one aspect of the carbon embodied by the Proposed Project, ACP should ensure that embodied carbon Electric Arc Furnaces should be utilised to lower the emissions (up to 75% reduction) from this aspect of the carbon footprint for the proposed pipeline, particularly in light of Ireland declaring a climate emergency and the country's commitment to legally binding carbon reduction targets.

16.3.3.1 Applicant's Response

2138. The embodied carbon from the steel pipeline was included in the assessment of GHG emissions from the Proposed Project and formed part of the assessment of likely significant effects on climate. As set out in Table 13.15 of EIAR Chapter 13 – Climate, the total embodied carbon from materials, including the steel pipeline, would be 585,196 tonnes CO₂eq.
2139. As explained in Section 13.5 of EIAR Chapter 13 – Climate, the Proposed Project has embedded mitigation which has reduced the embodied carbon from the pipeline. This includes reducing the diameter and thickness of the pipeline, and opting for a single Treated Water Pipeline instead of a dual pipe design. The Proposed Project also has additional mitigation to reduce embodied carbon in the form of the Applicant committing to only procuring from suppliers in Ireland which achieve the target of a decrease by 10% embodied carbon for materials produced and used in Ireland by 2025 in accordance with the Climate Action Plan, as far as practicable (and similar targets for international suppliers). While some materials, such as steel, will not be sourced in Ireland it is known that other EU countries will have their own decarbonisation strategies and therefore the same procurement requirement can be applied. By 2030, the 10% decrease in embodied carbon increases to a 30%, in line with the Climate Action Plan.
2140. Once this additional mitigation is accounted for, the embodied carbon from materials drops to 526,677 tonnes of CO₂eq, as set out in Table 13.31 of EIAR Chapter 13 – Climate.

16.3.4 Energy Demand and Carbon Emissions

2141. The following submissions raised a specific issue relating to energy demand and carbon emissions due to the operation of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Protection Alliance Company Ltd
WSP_SUB_38	Cllr. Séamie Morris
WSP_SUB_110	Clare County Council

2142. The general observer submissions from the River Shannon Protection Alliance Company Ltd and Cllr. Séamie Morris state that long-distance pumping and treatment entail high, permanent energy demand. Claims of carbon neutrality rely on offsetting rather than genuine emissions avoidance and are incompatible with national climate obligations.

2143. The prescribed body submission from Clare County Council stated that large inter-basin water transfer schemes require significant long-term energy consumption for pumping, and that operation emissions associated with energy use must therefore be considered in climate assessments.

16.3.4.1 Applicant's Response

2144. The GHG emissions from operational energy use was considered in the climate assessment and formed part of the assessment of likely significant effects on climate. Section 13.4.4.1 in EIAR Chapter 13 – Climate shows the annual operational power demand for the Proposed Project, and the GHG emissions from this power demand (2,440 tonnes of CO₂eq per annum). As explained in Section 16.2.1 of this report, mitigation includes the use of a Corporate Power Purchase Agreement to use electricity generated from renewables for 100% of operational electrical power. With this mitigation in place, the annual GHG emissions from operational power demand drops to 0 tonnes of CO₂eq, as per Section 13.6.2 in EIAR Chapter 13 – Climate.

2145. A response in relation to national climate obligations is provided in Section 16.2.5 of this report.

16.4 Response to Specific Issues Raised by Prescribed Bodies

16.4.1 Potential Peatland Carbon Impacts

2146. The prescribed body submission from Clare County Council raised a specific issue relating to peatland carbon impacts:

Unique ID	Name of Prescribed Body
WSP_SUB_110	Clare County Council

2147. The prescribed body submission stated that hydrological changes affecting raised bog systems may lead to peat degradation and the release of stored carbon. The submission continued that Ireland's peatlands represent one of the country's largest terrestrial carbon stores.

16.4.1.1 Applicant's Response

2148. The Proposed Project would not impact any active raised bog systems or degraded raised bogs still capable of natural regeneration. During the options selection stage, peat bog was considered as a constraint when selecting the preferred pipeline corridor, with options discounted on the basis of traveling through extensive areas of peat compared to the preferred pipeline corridor. Areas of sensitive peat bog, such as undisturbed peat or active raised bog, which act as a carbon sink, were avoided where practicable, including refining the preferred pipeline corridor to avoid areas of degraded raised bog and undisturbed bog remnant.

2149. As set out in Section 8.5.2.1.3 of EIAR Chapter 8 – Biodiversity, there would also be no indirect hydrological impacts on raised bog. No peatlands with Groundwater Dependant Terrestrial Ecosystems were identified along the Proposed Project. There is no active peatland present based on the ecological specialist wetland/peatland surveys. There are no areas of central or sub-central ecotopes (active raised bogs) along the Proposed Project. There is therefore no potential for direct or indirect hydrogeological impacts on active raised bogs.
2150. There are sections of the pipeline that will have to pass through areas of peat. However, most of this peatland is cutover peat which has been historically worked. As explained in Section 13.4.2.4 of EIAR Chapter 13 – Climate, the carbon sink potential of these lands is not the same as areas of undisturbed active raised bog. Drained peat no longer acts as a carbon sink and instead can act as a carbon source. In addition, cutover bog will be reinstated as part of the mitigation measures for the Proposed Project, in line with EIAR Appendix A5.3 - Methods of Working in Peat.
2151. There would be small areas (totalling approximately 1ha) of degraded raised bog (as stated above, this is not degraded raised bogs still capable of natural regeneration) that would be impacted by the Proposed Project. This is considered as permanent loss as it is assumed, as a worst case, that degraded raised bog cannot be reinstated like-for-like. The carbon emissions from this loss have been included in the construction GHG calculations for the Proposed Project. Carbon emissions from land use change, which includes peatland loss as well as other vegetation loss such as trees, is 148 tonnes CO₂eq, as stated in Table 13.31 in EIAR Chapter 13 - Climate. This equates to 0.02% of the total Construction Phase emissions for the Proposed Project.

16.4.2 Carbon Emissions Assessment

2152. The prescribed body submission from Tipperary County Council raised a specific issue relating to climate emissions:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

2153. This prescribed body submission stated that an assessment of the carbon emissions associated with treating and pumping water that may be lost through leakages and how that impacts on Ireland's statutory obligations to reduce emissions is required. The submission continued that the application is substantial and any life cycle embodied carbon assessment report may have been missed, that contains this information, but it could not be located.
2154. The submission also stated that the documentation does not quantify lifecycle greenhouse gas emissions associated with the production of water that is never beneficially used, and under the Climate Action and Low Carbon Development Acts (2015-2021) and EU climate objectives, such omissions are material.

16.4.2.1 Applicant's Response

2155. As discussed in Section 16.2.3 of this report, a detailed lifecycle assessment of the relevant elements of the Proposed Project has been undertaken. The operational phase GHG assessment included GHG emissions associated with operational electricity use for the abstraction, treatment and transport of treated water, chemical use in water treatment and traffic movements associated with chemical deliveries, as well as ongoing maintenance requirements. The carbon emissions from water leakages is captured in the assessment of operational GHG emissions from the Proposed Project. This is because the volume of water abstracted by the Proposed Project, and therefore the operational power required for this abstraction, is based on water demand projections which account for current leakage

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levels as well as future reductions in leakage levels through the actions the Applicant is taking outside the scope of the Proposed Project.

2156. The GHG emissions from operational energy use was considered in the climate assessment and formed part of the assessment of likely significant effects on climate. As per the conclusions in EIAR Chapter 13 – Climate, there would be no likely significant effect on climate from the Proposed Project.
2157. The Proposed Project includes embedded design measures for detecting leaks. This is addressed in the response in Section 23.3.1 and 23.4.1 of Chapter 23 – Risk of Major Accidents and/or Disasters of this report.
2158. The option of leakage reduction as an alternative to the Proposed Project has been raised in multiple submissions and is addressed further in Chapter 5 – Consideration of Reasonable Alternatives of this report.

17. Population

17.1 Overview

2159. Thirty-eight of the 114 submissions raised the issue of population in relation to the Proposed Project.

2160. An assessment of population was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 14 - Population. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.

2161. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding population. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:

- Chapter 3 Planning;
- Chapter 6 Proposed Project Description;
- Chapter 7 Construction and Commissioning;
- Chapter 9 Traffic & Transport;
- Chapter 10 Biodiversity;
- Chapter 11 Water (Hydrological Modelling and Water Levels); and
- Chapter 19 Landscape & Visual.

2162. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.

2163. The majority of submissions were in relation to potential impacts to tourism and recreation, local communities and amenity as a result of the Proposed Project, which have been assessed in the EIAR and appropriate mitigation measures proposed.

2164. This Chapter is structured around the following sections:

- General matters raised in all general observer and Prescribed Body submissions regarding population;
- Specific matters raised in general observer submissions regarding population; and
- Specific matters raised by Prescribed Bodies regarding population.

2165. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.

17.2 Response to General Issues Raised

17.2.1 Potential Impact on Local Communities

2166. The following submissions raised concerns about the potential impact of the Proposed Project on local communities (broadly in respect of the general disruption / impacts and perceived lack of benefits of the Proposed Project on people and communities within the Shannon region):

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_16	Joanne Skehan
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_24	Pamela Quirke O'Meara
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Councillor Fiona Bonfield, Alan Kelly TD and Councillor Louise Morgan-Walsh
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_57	Lucy Murphy
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_65	Samuel Norris
WSP_SUB_72	Carol Killeen
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh

17.2.1.1 Applicant's Response

2167. The likely significant effects of the Proposed Project on people and communities have been assessed in EIAR Chapter 14 - Population.

2168. The assessment concluded that there would be no negative likely significant effects on people and communities during the Construction Phase or Operational Phase of the Proposed Project, following the application of appropriate and applicable mitigation measures. However, the assessment did conclude that there was likely to be positive significant short-term effects (i.e. benefits) during the Construction Phase of the Proposed Project in relation to employment and the economy; and a positive significant long-term effect in regard to the economy during the Operational Phase.

2169. The population assessment considered the likelihood of significant effects of the Proposed Project on relevant receptors within various study area(s) as presented within Table 14.3 of EIAR Chapter 14 - Population. Each of the specified study area(s) are associated with the assessment of effects in regard to the following issues which are considered to represent the multitude of ways in which the Proposed Project could potentially impact people and communities:

- Employment – Assessment of the potential impacts of the Proposed Project on existing levels of employment within the counties through which the Proposed Project would be located; as well as within a national context;
- Economy – Assessment of the potential impacts of the Proposed Project on the economy;
- Community Amenity – Assessment of the potential impacts of the Proposed Project on 'community amenity' (i.e. the term used to describe the pleasantness and 'feel' of a community and the ability for people to enjoy the general character or quality of their surroundings). This

assessment was informed by the findings of the following assessments which comprise part of the EIAR:

- Chapter 6 (Noise & Vibration);
- Chapter 7 (Traffic & Transport);
- Chapter 12 (Air Quality); and
- Chapter 16 (Landscape & Visual).
- Community Severance and Accessibility – Assessment of the potential impacts of the Proposed Project in relation to the ability of users to access commercial and community facilities, recreational resources and residential properties. Linear infrastructure projects, as is the nature of the majority of the Proposed Project, present the potential for community severance and other access issues by way of road closures / diversions or land-take requirements during their construction and / or operation;
- Tourism – Potential impacts on tourism during the Construction and Operational Phases of the Proposed Project were assessed by considering the following impacts on tourism receptors:
 - Amenity effects arising from the combination of environmental impacts such as air quality, noise, visual, and traffic and transport;
 - Accessibility / severance effects resulting from a disruption of access to tourism facilities and accommodation; and
 - Visitor perception effects and the potential for a reduction in visitor numbers to the region due to the perceived scale of construction associated with the Proposed Project.
- Land Use and Land-take – Assessment of the potential impacts of the Proposed Project associated with the temporary and permanent land acquisition requirements to construct and operate the Proposed Project.

2170. The detailed assessment presented within EIAR Chapter 14 - Population (and in other chapters of the EIAR), as summarised above, is considered to have adequately covered the issues raised within the individual submissions.

17.2.2 Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon

2171. The following submissions raised concerns about the potential impact of the Proposed Project on local tourism and amenity on Lough Derg and the Lower River Shannon (broadly in respect to the general disruption / impacts and perceived lack of benefits that the Proposed Project is thought to have on recreational / tourism activities and the tourism industry in general within the Shannon region):

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_08	Caroline and Mark Eldridge
WSP_SUB_13	Éadaoin Kiely and Darren Kirwan
WSP_SUB_14	Eva Killeen
WSP_SUB_18	John and Georgina Ringrose
WSP_SUB_21	Mattie McGrath TD
WSP_SUB_22	Michael Reidy
WSP_SUB_23	Michelle Keary
WSP_SUB_24	Pamela Quirke O'Meara

Unique ID	Name of Individual or Organisation
WSP_SUB_27	St. Flannan's Fishing Club
WSP_SUB_28	Stefan and Olivia Hahne
WSP_SUB_29	Suzanne Noble
WSP_SUB_30	Terry Forristal
WSP_SUB_31	Tony O'Brien
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_34	Castleconnell Boat Club
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_39	Derg Open Water Swim School and the swim group "Lively Wimmin Swimmin
WSP_SUB_40	Diarmuid O'Crowley
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_58	McKeogh's Hardware Ltd.
WSP_SUB_61	Michelle McNamara
WSP_SUB_64	Portumna and District Angling and Boating Association
WSP_SUB_65	Samuel Norris
WSP_SUB_67	Senator Dee Ryan
WSP_SUB_72	Carol Killeen
WSP_SUB_79	Fáilte Ireland
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

17.2.2.1 Applicant's Response

2172. An overview of the assessment of likely significant effects of the Proposed Project on people and communities is provided in Section 17.2.1 of this report; the scope of which included the consideration and assessment of multiple issues of relevance to people and communities, among them 'tourism'.

2173. Potential impacts on tourism during the Construction and Operational Phases of the Proposed Project were assessed by considering the following impacts on tourism receptors located within 500m of the Planning Application Boundary:

- Amenity effects arising from the combination of environmental impacts such as air quality, noise, visual, and traffic and transport;
- Accessibility / severance effects resulting from a disruption of access to tourism facilities and accommodation; and
- Visitor perception effects and the potential for a reduction in visitor numbers to the region due to the perceived scale of construction associated with the Proposed Project.

2174. The assessment concluded that there would be no negative likely significant effects on people and communities, including tourism, during the Construction Phase or Operational Phase of the Proposed Project, following the application of appropriate and applicable mitigation measures.

2175. A key concern outlined within many of the submissions is the potential impacts on recreational and tourism activities due to lower water levels at Parteen Basin, Lough Derg, and the Lower River Shannon. Paragraph 31 in EIAR Chapter 14 - Population states the following in relation to this key issue (underlining added for emphasis):

'It should also be noted, and as outlined in Chapter 4 (Proposed Project Description) and Appendix A9.1 Annex A (Hydrological Modelling Report), the proposed abstraction of water, in respect to the Proposed Project, is in essence an abstraction from water normally used in the (Ardnacrusha) hydro-power plant, using the same existing water level control. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. As such, navigation and beneficial uses focused on tourism and recreation would experience the same operating water level range as normal (if these facilities can currently be used throughout the range of water levels within the Normal Operating Band, this would remain the case with the Proposed Project in operation). Therefore, there would be no material change to the use of the River Shannon (including Lough Derg and Parteen Basin) for recreational activities as the operation of the Proposed Project would result in no change compared to current conditions. As such, the assessment of likely significant effects on the recreational use of the River Shannon (including Lough Derg and Parteen Basin) is not included in the scope of assessment on 'community amenity'.

2176. Responses in relation to the hydrological modelling and water levels are provided in Chapter 11 - Water (Hydrological Modelling and Water Levels) of this report.
2177. A number of the submissions raised the potential impacts on recreational and tourism activities due to a reduction in water quality at Parteen Basin, Lough Derg, and the Lower River Shannon. Water quality modelling was undertaken to assess the impact on water quality from the Proposed Project abstraction. The results of this modelling, which were presented in EIAR Appendix A9.1 – Abstraction Assessment, demonstrated that there would be an imperceptible effect on water quality. There would therefore be no effect on amenity, recreation or tourism from a change in water quality as a result of the Proposed Project.
2178. A number of the submissions raised the potential impacts on recreational and tourism activities due to ecological deterioration of Parteen Basin, Lough Derg, and the Lower River Shannon. Responses in relation to biodiversity and the NIS are provided in Chapter 10 – Biodiversity and Chapter 25 – Natura Impact Statement of this report. As per the responses in those chapters, there would be no likely significant effects on biodiversity in the Shannon catchment, or an adverse effect on the integrity of the Lower River Shannon SAC or any European designated sites linked to it. There would therefore be no likely significant effect on amenity, recreation or tourism from ecological impacts as a result of the Proposed Project.
2179. The submissions from Yvonne Moloney and John and Georgina Ringrose suggest a number of tourism related mitigation measures:
- A number of the recommendations are related to the community benefit scheme and are addressed in Section 3.3.7 of Chapter 3 – Planning of this report;
 - The suggestion that there should be a construction exclusion zones within 200m of the shoreline during July and August peak tourist season is addressed in Section 7.3.6 in Chapter 7 – Construction and Commissioning of this report; and
 - The suggestion that there should be restricted haulage hours to avoid tourist peak periods is addressed in Section 9.2.1 in Chapter 9 – Traffic and Transport of this report.

17.3 Response to Specific Issues Raised in General Observer Submissions

17.3.1 Potential Economic Impact on Mountshannon

2180. The general observer submission from Mountshannon Community Council raised concerns about the potential economic impacts of the Proposed Project on Mountshannon:

Unique ID	Name of Individual or Organisation
WSP_SUB_62	Mountshannon Community Council

2181. This general observer submission stated that environmental degradation resulting from the Proposed Project would undermine public investment and directly affect the economic sustainability of Mountshannon.

17.3.1.1 Applicant's Response

2182. The Applicant does not agree that environmental degradation will affect the economic sustainability of Mountshannon. As explained in the response in Section 17.2.2 of this report, there would be no likely significant effect on recreation, tourism and amenity as there would be no change in the operating water level range or change in water quality in Lough Derg. No effect on the economy of Mountshannon has been identified in EIAR Chapter 14 – Population. EIAR Chapter 14 does conclude, however, that there would be a significant effect on the national economy as the Proposed Project essentially facilitates anticipated demand requirements and resilience in water supply for the Eastern and Midlands Region into the future.

17.3.2 Potential Recreation and Tourism Impacts of Reduction in Fish Stock

2183. The following submissions raised concerns about the potential for the Proposed Project to cause a reduction in fish stock and the associated recreation and tourism impacts:

Unique ID	Name of Individual or Organisation
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_112	Limerick County Council

2184. This general observer submission from Futureproof Clare Environmental CLG stated that there is potential for the Proposed Project to cause a reduction in fish stock in the vicinity of the abstraction, directly affecting the recreational and touristic experience and rights of people to enjoy and interact with nature as part of quality of life.

2185. This prescribed body submission from Limerick County Council stated that the council had received concerns from the fisheries community about the likely impact on existing fish stocks. The submission also stated that a reduction in waterflow will have an impact on the fishing industry.

17.3.2.1 Applicant's Response

2186. Section 10.3.5 in Chapter 10 – Biodiversity of this report addresses the impact the Proposed Project would have on fish passage during operation, and Section 10.4.6 of this report addresses the impact on fisheries during construction of the Proposed Project. In summary, mitigation measures are proposed to avoid or reduce effects on fish during construction, and embedded design measures are included to avoid entrapment of fish by the abstraction during operation. There would be no likely significant effects on fish from the construction and operation of the Proposed Project. There would

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therefore be no likely significant effect on recreational and touristic experience of the Shannon catchment, or the fishing industry.

17.3.3 Potential Impact of the Proposed Project on Limerick Rowing

2187. The general observer submission from Castleconnell Boat Club raised concerns about the potential impact of the Proposed Project on Limerick Rowing:

Unique ID	Name of Individual or Organisation
WSP_SUB_34	Castleconnell Boat Club

2188. This general observer submission stated that the proposed abstraction poses a major risk to Limerick Rowing and has the potential to finish rowing in Limerick entirely. The submission stated the proposed water abstraction poses a serious risk to this stretch of river by further reducing already stressed flows, where statutory minimum levels have previously been breached. They raised concerns that inadequate hydrological modelling and unrealistic drought assumptions could lead to lower water levels, increased silting, reed overgrowth, and the eventual loss of usable rowing waters. This would threaten the survival of rowing in Limerick and jeopardise major national rowing events that attract thousands of participants annually.

17.3.3.1 Applicant's Response

2189. The Applicant does not agree that the Proposed Project poses a high risk to rowing in Limerick. The impact of the Proposed Project downstream of the abstraction point is covered in Chapter 11 - Water (Hydrological Modelling and Water Levels) of this report. In summary, the hydrological modelling undertaken for the Proposed Project demonstrates that the required Old River Shannon compensation and fish pass flows downstream can always be met, including during rare, extreme drought conditions. ESB will continue to manage water flows and levels at the Parteen Basin within its normal operating regime which balances numerous rights and obligations of ESB (including the requirements of dam safety, hydropower generation and the Minimum Required Compensation Flow). ESB will carry out whatever works or operations as it considers necessary so as to preserve the Minimum Required Compensation Flow.

17.3.4 Potential Impact of Algal Blooms on Recreation and Amenity

2190. The following general observer submissions raised concerns about the potential impact of algal blooms in Lough Derg on recreation and amenity value for lake users:

Unique ID	Name of Individual or Organisation
WSP_SUB_14	Eva Killeen
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_39	Derg Open Water Swim School and the swim group "Lively Wimmin Swimmin"
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_57	Lucy Murphy
WSP_SUB_72	Carol Killeen

2191. The general observer submissions from Eva Killeen, William Lawrences Hodges and Carol Killeen stated that there are already algae blooms in Lough Derg and that toxic algae in lakes can impact amenity value.

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2192. The general observer submissions from Derg Open Water Swim School and the swim group “Lively Wimmin Swimmin” stated that they are aware of the detrimental impacts, including serious loss of recreational and business amenity can result from toxic algae blooms on the lake.
2193. The general observer submission from Futureproof Clare Environmental CLG stated that, recently, and for a number of years, Lough Derg was impacted by blue green algae due to a lowering of the water level, most likely as a result of Ardnacrusha combined with a lack of summer rainfall and increased water temperature.

17.3.4.1 Applicant’s Response

2194. A response in relation to the potential for reduced water levels to result in pollution concentration and algae growth is provided in Section 12.2.3 of Chapter 12 – Water (General) of this report. The Proposed Project would not cause occurrence or worsen the occurrence of harmful algal blooms. There would therefore be no impact on the amenity of Lough Derg or Parteen Basin from algal blooms as a result of the Proposed Project.

17.3.5 Potential Impact of the Proposed Project on the Economic Development of Limerick

2195. The general observer submission from Senator Dee Ryan raised concerns about the potential impact of the Proposed Project on the economic development of Limerick City and region.

Unique ID	Name of Individual or Organisation
WSP_SUB_67	Senator Dee Ryan

2196. This general observer submission stated that the proposed abstraction has the potential to result in limitations to the future economic development of Limerick city and region by any reduction in water supply for industry in the region.

17.3.5.1 Applicant’s Response

2197. The Proposed Project would have no impact on the downstream availability of water for the Clareville Water Treatment Plant, which supplies drinking water for Limerick City and its hinterland, and which abstracts from both the Ardnacrusha Headrace at Clonlara and from the Old River Shannon. As set out in Section 4.15.1 of EIAR Chapter 4 - Proposed Project Description, there would be no change to the statutory compensation flow of 10m³/s to the Old River Shannon, and it would remain ESB’s responsibility to ensure the delivery of the compensation flow. The modelling carried out for the Proposed Project, as reported in EIAR Appendix A9.1 Annex A - Hydrological Modelling Report, demonstrates that this is achievable. ESB will continue to operate the Headrace within its normal water levels.
2198. It is not the place for the Proposed Project EIAR or SID Planning Application to consider future economic development in the Limerick region. This is a strategic issue which has been considered in the National Water Resource Plan and Regional Water Resource Plan: Eastern and Midlands Region. Any potential future projects that deliver the preferred approach from the Regional Water Resource Plan for the Limerick region is not within the scope of the Proposed Project.

17.3.6 Employment and Economic Benefits

2199. The following general observer submissions requested mitigation in relation to employment and economic benefits.

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_18	John and Georgina Ringrose

2200. Both of the general observer submissions from Yvonne Moloney and John and Georgina Ringrose request that the Proposed Project establish local employment quotas, ensuring a minimum percentage of construction person-weeks are filled by new entrants or long-term unemployed from the Clare/Tipperary region. Provide funded training schemes for local residents in skills such as welding, plant operation, and metalwork to qualify for site work. Require that at least 5% of the project team (contractors and consultants) are SMEs from the local region. Host “Meet the Buyer” events in Killaloe/Nenagh to ensure local contractors have access to subcontracting opportunities.

17.3.6.1 Applicant’s Response

2201. The Applicant notes these recommendations but wishes to highlight that these are not mitigation for the purposes of EIA, as the recommended measures are not required to avoid or reduce likely significant effects.

2202. As set out in Section 14.4.2.1 of EIAR Chapter 14 – Population, of the 1,065 construction workers required to construct the Proposed Project at the peak of the Construction Phase, it is estimated that approximately 266 of these would be jobs locally filled by individuals who already reside in the study area (i.e. the counties that the Proposed Project would pass through) and who had no previous employment immediately prior to taking up the position in the construction workforce for the Proposed Project.

2203. In terms of the number of indirect and induced jobs that are created locally (i.e. within the study area) as a result of the construction of the Proposed Project, using the construction industry multiplier cited by the Construction Industry Federation (of Ireland), it is estimated that approximately 215 indirect/induced jobs would be created. In total, approximately 454 employment opportunities are anticipated to be created locally as a result of the Construction Phase of the Proposed Project. Based on the assessment criteria used in EIAR Chapter 14 – Population, this would be a likely significant beneficial effect on local employment.

2204. Notwithstanding the above, the Applicant commissioned specialist research and advice to inform the development of a bespoke community benefit scheme for the Proposed Project. This is the first such scheme proposed for a major public water supply project in Ireland to understand how best to support hosting communities. The research examined available socio-economic and demographic information for communities in proximity to the proposed infrastructure and, in combination with stakeholder engagement, highlighted community development priorities and frameworks that the Applicant can align with to ensure that the benefits of the Proposed Project are maximised for local communities. Aligned to the Applicant’s mission of protecting the environment and enabling Ireland’s social and economic development, the Proposed Project is committed to providing opportunities for supporting local communities including in the following areas:

- Economy - The Proposed Project will stimulate local economic development, support businesses, and create job opportunities. By integrating economic policies in the community benefit scheme, the Applicant aims to contribute to the prosperity of the hosting communities by seeking to maximise local employment and enterprise opportunities which contribute to the economic vibrancy of the region. This will include providing local employment opportunities for jobseekers (including support for long-term unemployed persons returning to work, youth unemployed, or persons entering the workforce for the first time) through the use of social procurement / social inclusion initiatives. The Proposed Project will also provide opportunities

for SMEs and social enterprises to benefit from the delivery of the Proposed Project via the supply chain including via ‘Meet the Buyer’ events held locally; and

- Education - A skilled workforce stands to benefit from local employment opportunities which will accrue from the delivery of the Proposed Project. Recognising the vital role of education in community empowerment and social mobility, the Proposed Project will support and deliver local initiatives that support progression in education at all levels or which seek to encourage career pathways via STEAM subjects. Support for initiatives which seek to reduce early school leaving in disadvantaged areas will be a focus. Particular emphasis is placed on ensuring a just transition for communities which are moving to more sustainable industries including the green economy.

2205. Support for local employment and education and training initiatives will be delivered via the Proposed Project Community Benefit Scheme and also via a Social Value Strategy which seeks to embed social value as a key pillar of sustainable project delivery. While still an emerging area in Ireland, the Applicant has reviewed international social value models and has developed a proposed approach to embedding social value within the construction contracts and supply chain.

2206. Contractors will be required to produce a social value delivery plan and report progress as a performance condition of the contracts. In this way, the Applicant and its appointed Contractors will maximise the economic, educational and environmental benefits which will accrue for local communities from the delivery of the Water Supply Project, ultimately fostering sustainable growth.

17.4 Response to Specific Issues Raised by Prescribed Bodies

17.4.1 Navigation Assessment for Lough Derg

2207. The prescribed body submission from Waterways Ireland raised a specific issue relating to a navigation assessment for Lough Derg:

Unique ID	Name of Individual or Organisation
WSP_SUB_78	Waterways Ireland

2208. This prescribed body submission requested that an impact assessment of the potential impacts of the Proposed Project on navigation in Lough Derg be undertaken. The submission further stated that this assessment should specifically evaluate the physical viability of accessing the lake via all existing jetties, marinas, and other fixed recreational facilities during drought scenarios that fall below a level of 30.60 metres above Ordnance Datum (mOD).

17.4.1.1 Applicant's Response

2209. The Applicant does not agree that this is necessary for the assessment of the environmental effects of the Proposed Project. The assessment of the water effects as reported in EIAR Chapter 9 - Water and specifically in Annex A - Hydrological Modelling Report to Appendix A9.1 - Abstraction Assessment identified that the change in water levels resulting from the Proposed Project would only be during drought conditions. The hydrological modelling has identified that the change in water level on Parteen Basin would be a maximum of 168mm as set out in Chapter 11 (Water – Hydrological modelling and Water Levels). This level of change would only occur during rare, extreme drought conditions and allowing for worst case climate change, and even then, would remain within the normal upper and lower levels within which ESB currently manage water levels.

2210. Taking these factors into account it is not considered likely that there would be a significant environmental effect as a result of the loss of access to moorings as a result of the change in water level caused by the Proposed Project (i.e. the difference between the number of moorings unavailable

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in a drought in the future accounting for climate change and the number of moorings unavailable in a drought in the future taking account of climate change and with the implementation of the Proposed Project). This is based on:

- The likely duration of any effect which would be temporary and short term
- The frequency of the effect which would be during rare events.

2211. The Applicant is concerned that potentially the Proposed Project is being conflated with an existing issue that may be affected by future climate change without the implementation of the Proposed Project and consequently, maintains that ESB currently manages water within an upper and lower level on Parteen Basin and the Normal Operating Band on Lough Derg and if existing facilities (like slips, shutters, or moorings) are usable throughout the normal water level range, they will remain usable once the Proposed Project is in place.

2212. The effect of the Proposed Project on water levels is further discussed in Chapter 11 - Water (Hydrological Modelling and Water Levels) of this report.

17.4.2 Considerations for Tourism Assessment

2213. The prescribed body submission from Fáilte Ireland raised a specific issue relating to considerations for the tourism-related impact assessment in the EIAR:

Unique ID	Name of Individual or Organisation
WSP_SUB_79	Fáilte Ireland

2214. This prescribed body submission stated that, while not specifically noted in the Population Chapter, Fáilte Ireland believe the consideration of 'community amenity' and 'community accessibility and severance' are also equally relevant to consideration of effects on tourism.

17.4.2.1 Applicant's Response

2215. The tourism assessment within EIAR Chapter 14 - Population includes for the consideration of 'community amenity' and 'community accessibility and severance':

'Effects on tourism during the Construction and Operational Phases of the Proposed Project were assessed by considering the following effects on tourism receptors:

- *Amenity effects arising from the combination of environmental impacts such as air quality, noise, visual, and traffic and transport;*
- *Accessibility/severance effects resulting from a disruption of access to tourism facilities and accommodation; and*
- *Visitor perception effects and the potential for a reduction in visitor numbers to the region due to the perceived scale of construction associated with the Proposed Project.'*

17.4.3 Absence of Tourism-Related Strategies and Policies

2216. The prescribed body submission from Fáilte Ireland raised a specific issue relating to the absence of specific tourism-related strategies and policies:

Unique ID	Name of Individual or Organisation
WSP_SUB_79	Fáilte Ireland

2217. This prescribed body submission stated that it is regrettable that some other relevant national, regional and local tourism development strategies are not referenced or considered in the Population Chapter in the EIAR. The submission continues that there is no consideration or listing of tourism-related policies in the Development Plans listed in Table 14.4 of the EIAR.

17.4.3.1 Applicant's Response

2218. The omission of the following policies/strategies from EIAR Chapter 14 – Population does not result in a change in the findings of the assessment carried out. Consideration of these policies does not change the conclusions of EIAR Chapter 14, either in terms of the likely significant effects, or mitigation measures required:

- The Tourism Policy Framework 2025 – 2030 - A New Era for Irish Tourism: National Tourism Policy Statement;
- Ireland's Ancient East Regional Development Strategy 2023-2027; and
- Ireland's Hidden Heartlands Regional Development Strategy 2023-2027.

2219. In relation to the listing of key policies within relevant County Development Plans, as listed within Table 14.4 of EIAR Chapter 14 - Population, it was considered most prudent to include policies of direct relevance to the Proposed Project. The omission of specific tourism-related policies from within these development plans in the Chapter is acknowledged, however upon review of such policies, the majority of these are in respect of the promotion and development of the tourism industry within the relevant counties, an aim which the Proposed Project does not directly influence.

17.4.4 Potential Tourism Impacts at Lough Derg / Parteen Basin

2220. The prescribed body submission from Tipperary County Council specifically referred to the potential for tourism-related impacts at Lough Derg / Parteen Basin as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_114	Tipperary County Council

2221. The prescribed body submission noted that there are issues regarding tourism and visual impact, particularly for the Raw Water Intake and Pumping Station at the Parteen Basin, which requires more detailed assessment. The submission continued that Tipperary County Council is concerned with the impact of the RWI&PS on tourism (leisure users and anglers) given its location and visual impact on the eastern side of the Parteen Basin.

17.4.4.1 Applicant's Response

2222. The landscape and visual effect from the RWI&PS is addressed in Chapter 19 – Landscape and visual of this report, including a specific response to Tipperary County Council in Section 19.4.4 of that chapter. In summary, there would be no likely significant landscape or visual effect from the RWI&PS during the operational phase. The landscape and visual effect was considered, along with other impacts such as noise and traffic, when assessing the amenity effect in EIAR Chapter 14 – Population. As per Section 14.4.3 in EIAR Chapter 14, there would be no likely significant effect on amenity from the RWI&PS, including amenity in relation to tourism.

2223. The submission also raised concern in relation to the effect on tourism arising from perceived negative impacts on water level and quality in Lough Derg / River Shannon. This is addressed in Section 17.2.2 of this report.

18. Human Health

18.1 Overview

2224. Twenty-two of the 114 submissions raised the issue of human health in relation to the Proposed Project.

2225. An assessment of human health was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 15 – Human Health. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.

2226. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding human health. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:

- Chapter 6 Proposed Project Description;
- Chapter 7 Construction and Commissioning;
- Chapter 8 Noise and Vibration;
- Chapter 9 Traffic and Transport;
- Chapter 15 Air Quality; and
- Chapter 19 Landscape and Visual.

2227. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.

2228. The submissions were in relation to potential health impacts as a result of the construction of the Proposed Project from matters such as dust and noise, which have been assessed in the EIAR and appropriate mitigation measures proposed; and health issues from drinking water, which have been considered as part of the Proposed Project design.

2229. This Chapter is structured around the following sections:

- General matters raised in all general observer and Prescribed Body submissions regarding human health;
- Specific matters raised in general observer submissions regarding human health; and
- Specific matters raised by Prescribed Bodies regarding human health.

2230. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.

18.2 Response to General Issues Raised

18.2.1 Potential General Health Impacts

2231. The following submissions raised concerns about the potential general health impacts associated with the Proposed Project, including the proposed BPT and WTP:

Unique ID	Name of Individual or Organisation
WSP_SUB_28	Stefan and Olivia Hahne

Unique ID	Name of Individual or Organisation
WSP_SUB_30	Terry Forristal
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh

18.2.1.1 Applicant's Response

2232. These submissions relate to potential health impacts as a result of the Proposed Project. A human health assessment was carried out and reported in EIAR Chapter 15 – Human Health. This assessed the construction and operation effects from both the pipeline and infrastructure sites (including the BPT and WTP). Factors considered included air quality, noise, water, soil, open space, leisure and play, community safety and employment and income. The assessment concluded that during construction, there would be no significant effects on human health as a result of the Proposed Project. During operation, there would be significant positive effects on human health as the Proposed Project would deliver an adequate supply of clean potable water and would allow for various wider societal benefits such as economic and social development and climate change resilience which cannot occur without an adequate supply of water.

2233. Mitigation measures for human health are outlined in Section 15.5 of EIAR Chapter 15. Mitigation measures are based on topic specific mitigation, as listed in EIAR Chapter 6 - Noise & Vibration; Chapter 7 - Traffic & Transport; Chapter 9 - Water; Chapter 10 - Soils, Geology & Hydrogeology; Chapter 11 - Agriculture; and Chapter 12 - Air Quality. These measures would reduce impacts on biophysical and social determinants of health to a not-significant level.

18.2.2 Potential Health Impacts Associated with Transport of Drinking Water

2234. The following submissions raised concerns about the potential health impacts associated with transporting drinking water over a 170km pipeline:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Cllr. Séamie Morris

18.2.2.1 Applicant's Response

2235. The Proposed Project has been designed to meet the requirements of the Drinking Water Directive (EU 2020/2184), with multiple safeguards in place:

- Water quality: the pipeline will carry fully treated, potable water that has undergone UV disinfection and chlorine dosing at the WTP. This ensures microbial safety and prevents stagnation-related deterioration during transit;
- Materials: the pipeline will be constructed from steel, eliminating the risk of chemical leaching; and
- Monitoring: routine chemical and microbiological testing will be conducted at the TPR in Dublin before the water enters the distribution network, ensuring continued compliance with drinking water standards.

2236. These measures are based on scientific assessments and are aligned with best practices for long distance water transfer and storage.

2237. As set out in the Operational Strategy (EIAR Appendix A4.1), chlorine dosing will also be provided at the BPT and TPR in order to maintain the required level of chlorine in the treated water. To ensure that the levels of chlorine residual are accurately controlled, water quality sampling will be automatically undertaken on the inlet and the outlet to the BPT and TPR and will determine the level of dose required at the BPT and TPR inlet pipework.

18.3 Response to Specific Issues Raised in General Observer Submissions

18.3.1 Mis-Classification of Sensitive Health Receptors

2238. The general observer submission from Peamount Healthcare raised a specific issue relating to the mis-classification of sensitive health receptors in the EIAR:

Unique ID	Name of Individual or Organisation
WSP_SUB_104	Peamount Healthcare

2239. The general observer submission from Peamount Healthcare stated that the Human Health assessment in the EIAR inadequately characterises the sensitivity of Peamount Hospital and its patients.

18.3.1.1 Applicant's Response

2240. As set out in Section 15.2.4 of EIAR Chapter 15 – Human Health, the human health assessment draws on established guidelines for assessing human health as part of an environmental assessment. The criteria for the determination of health sensitivity applied for the human health assessment is set out in Table 15.4 of EIAR Chapter 15 – Human Health. The EIA guidelines which informed the sensitivity criteria are set out under the table. In accordance with the guidelines used, the highest category of health sensitivity is 'high'. There are four categories of sensitivity ranging from 'high' to 'negligible'. The baseline description of Peamount Hospital in Section 15.3.3 of EIAR Chapter 15 identifies that it provides services for people with neurological and other conditions and clearly reports that the Peamount Hospital Complex is a site of high sensitivity *'due to its vulnerable and dependent population with low capacity to adapt.'* The human health assessment considers effects on Peamount Hospital as a distinct population group as described in paragraphs 125 (relating to construction dust), and 131 to 133 (relating to construction noise) and as summarised in Table 15.11 in EIAR Chapter 15. The high sensitivity of the population forms part of the determination of significance applied in the assessment.

18.3.2 Potential Health Impacts on Patients at Peamount Hospital

2241. The following submissions raised a specific issue relating to the potential impacts on the health of patients at Peamount Hospital:

Unique ID	Name of Individual or Organisation
WSP_SUB_94	Health Service Executive (HSE) - National Office for Environmental Health Services (NEHS)
WSP_SUB_104	Peamount Healthcare

2242. The general observer submission from Peamount Healthcare stated that there will be a negative impact on patients (and staff) resulting from the construction of the Proposed Project in terms of infections, noise and vibration, lighting, construction access and air quality.

2243. The prescribed body submission from the HSE made specific observation in relation to impacts on Peamount Hospital, including from air quality, noise and lighting.

18.3.2.1 Applicant's Response

2244. Effects on Peamount Hospital and mitigation measures in relation to noise and vibration, lighting, construction access and air quality (including infections from Aspergillus) are covered in responses in the following sections of this report:

- Noise and vibration – Section 8.3.2 and 8.4.1 in Chapter 8 – Noise and Vibration;
- Lighting – Section 19.3.1 in Chapter 19 – Landscape and Visual;
- Construction access – Section 9.3.1 in Chapter 9 – Traffic and Transport; and
- Air quality – Section 15.3.2 and 15.4.1 in Chapter 15 – Air Quality.

2245. The assessment reported in EIAR Chapter 15 – Human Health draws on findings from other assessments of the EIAR, including noise and vibration and air quality since those assessments apply specialist techniques and standards to model and assess environmental impacts.

2246. As the submission from Peamount Healthcare identifies, paragraph 133 in EIAR Chapter 15 identifies a potential negative, significant and short-term effect on the high sensitivity Peamount Hospital population from construction noise in the absence of mitigation measures. The general observer comments that the human health assessment *'refers to the scientific literature on construction noise impacts being "limited", but there is no evidence that the authors have characterised the actual conditions treated at Peamount Hospital, nor that they conducted a literature review in relation to the impacts of changes in the noise environment on that population.'* It is not proportionate for an EIA process to undertake a literature review in relation to the range of specific health conditions in a population. As stated in paragraph 14 of EIAR Chapter 15 – Human Health:

'The assessment addresses effects on 'population health', which is defined as the health outcomes of a group of individuals, including the distribution of such outcomes within the population... This is different from an assessment on individual (clinical) health status. The results of the assessment in this chapter cannot be used to infer how the Proposed Project may affect a specific individual's health status, since that is a personal matter requiring clinical expertise to interpret an individual's private medical history, genetics and personal circumstances, and may vary substantially from the average health of a defined population.'

2247. While it may have been possible to draw out a more detailed understanding from research into the actual conditions treated at Peamount Hospital, it is not considered that it would affect the conclusions of the population health-based assessment based on the assessment criteria applied and guidance used. Table 15.6 of EIAR Chapter 15 – Human Health sets out what is meant by the application of the term 'significant'. Among the indicative criteria, it includes that *'change, due to the Proposed Project, could result in a regulatory threshold or statutory standard being approached (if applicable)'* and that there is *'likely to be a small change in the health baseline of the population, including as evidenced by effect size and scientific literature showing there is good evidence of a relationship between changes that would result from the Proposed Project and changes to health outcomes.'*

2248. The human health assessment draws on information about mitigation for noise from Section 6.5 of EIAR Chapter 6 – Noise & Vibration which concludes that the mitigation would reduce noise impacts to Moderate significance or below. The human health assessment states that this would partially mitigate the noise related health effects on the Peamount Hospital complex, resulting in a residual effects conclusion of negative, Slight to Moderate, short term (not significant). The moderate significance criteria in relation to human health includes that *'Change, due to the Proposed Project, would be well within a regulatory threshold or statutory standard (if applicable); but could result in a guideline being crossed (if applicable)'* and that *'There is likely to be a slight change in the health baseline of the population, including as evidenced by the effect size and/or scientific literature showing there is some*

evidence of a relationship between changes that would result from the Proposed Project and changes to health outcomes.’ (Table 15.6 in EIAR Chapter 15 – Human Health).

2249. It is considered that this assessment conclusion on noise effects is valid. Specific noise mitigation is proposed, as identified in EIAR Chapter 6 – Noise & Vibration, and monitoring will be undertaken as per paragraph 356 of EIAR Chapter 6, to address the noise effects on the nearest sensitive locations at Peamount Hospital which includes St. Brid’s Neurological Disability Unit. Section 8.3.2 and 8.4.1 in Chapter 8 – Noise and Vibration of this report provide information on the NVMP (Annex D of EIAR Appendix A5.1 – Construction Environmental Management Plan) and the commitment to careful planning of noise and vibration mitigation and monitoring measures at hospital-adjacent locations with ongoing liaison with Peamount Healthcare.
2250. In relation to the risk of Aspergillus infection, paragraph 126 of EIAR Chapter 15 – Human Health concludes that the risk of invasive aspergillosis is negative, Not Significant, temporary on the basis that the National Guidelines for the prevention of Nosocomial Aspergillosis During Construction/Renovation Activities would be followed. The submission advises that there are no air handling, ventilation or HEPA filtration units at Peamount Hospital. However, as identified in paragraph 126 EIAR Chapter 15 – Human Health, the National Guidelines allow for hospital Infection Prevention and Control Teams to identify alternative measures for settings where such filtration facilities are not available. Since Aspergillus is naturally occurring in the environment, there is an inherent baseline risk of releasing spores during everyday activities such as gardening and grounds maintenance, for example sweeping autumn leaves, and internal building maintenance which the hospital would routinely encounter.
2251. There are established techniques for dust suppression on construction sites to reduce dust generated during construction and on this basis it is not expected that the risk presented by the Proposed Project would be significantly different than baseline conditions. The Applicant’s response on potential construction dust impacts on Peamount Hospital in Section 15.3.2 and 15.4.1 in Chapter 15 – Air Quality of this report provides further details on the specific measures to be applied by the Proposed Project, including the development and implementation of an Aspergillus Prevention Plan by a suitably qualified specialist, in consultation with Peamount Hospital. The site-specific Aspergillus Prevention Plan will be developed by a suitably qualified specialist prior to commencement of works on the site to prevent Aspergillus spores spreading. This will detail measures supplementary to the dust mitigation measures proposed for the Proposed Project and will be discussed in consultation with Peamount Hospital (this will include, for example, the sealing of windows where feasible).
2252. The Applicant welcomes the HSE’s agreement and support for the guidance, scope and approach applied in EIAR Chapter 15 - Human Health. The above response to concerns raised by Peamount Healthcare on the assessment of health impacts relating to construction noise and Aspergillus also relate to the specific points made by the HSE relating to Peamount Hospital. The Applicant notes the HSE recommendations and is committed to the development and implementation of the Dust Management Plan, Aspergillus Prevention Plan and NVMP in consultation with Peamount Healthcare, in line with the mitigation measures in the EIAR and CEMP. Specific mitigation and monitoring measures to control the risk of construction dust and Aspergillus are set out in Section 15.3.2 in Chapter 15 – Air Quality of this report. Section 8.3.2 and 8.4.1 in Chapter 8 – Noise & Vibration of this report references to the NVMP and the mitigation and monitoring measures at hospital-adjacent locations with ongoing liaison with Peamount Healthcare.
2253. The Applicant notes that Peamount Healthcare outlined a concern to HSE in relation to any additional lighting during construction and operation of the Proposed Project could affect the residents in the Neuro Disability Unit due to close proximity. Section 5.6 of EIAR Appendix A5.1 - Construction Environmental Management Plan requires the contractor to adopt a proactive approach to reduce light pollution and trespass. Details of construction lighting will therefore be developed as part of the

Construction and Environmental Management Plan in consultation with Peamount Healthcare in line with the following principles:

- Construction lighting will be installed in accordance with best practice standards and guidance, including: GN01:2020, BS EN 12464-2:2014 (Outdoor Workplaces). It will be required to meet G45 performance, which have the lowest lux levels, and adopt the requirements of Guidance Note 08/23 (Bat Conservation Trust 2023);
- Lighting will be positioned and directed to mitigate the impact on neighbouring adjacent properties and habitats;
- The use of construction lighting will be limited to the authorised working hours; and
- Security lighting will only be activated when a motion sensor is triggered by an intruder so that live CCTV record any such activity.

2254. Section 4.12.7 of EIAR Chapter 4 – Proposed Project Description provides an outline of the external lighting proposals for the TPR, confirming it is not proposed to put external lighting on the access road to the TPR and that the design of lighting at the TPR site will be carried out with reference to the lighting standards and specifications set out in Section 4.4.7 of EIAR Chapter 4. This includes guidance on limiting the effects of obtrusive lighting and that lighting used will be highly directional. Therefore, the risk of nuisance light affecting patients at Peamount Hospital will be controlled as part of the design of the proposed TPR.

18.3.3 Potential Health Impacts Associated with Flood Events in the Shannon Basin

2255. The general observer submission from Shane Mathews raised a specific issue relating to the potential health impacts associated with flooding events in the Shannon Basin:

Unique ID	Name of Individual or Organisation
WSP_SUB_77	Shane Mathews

2256. This general observer submission stated that the Shannon Basin, including Athlone Town and surrounding areas, is prone to flooding during very wet seasons. The submission continued that during such events, floodwaters can mix with human sewage and be exposed to including *Escherichia coli* (*E.coli*) and other bacteria, which is extremely hazardous to human health.

18.3.3.1 Applicant's Response

2257. The Proposed Project would not increase the risk of flooding, therefore there would be no likely significant effect on health from flooding as a result of the Proposed Project. As set out in the Flood Risk Assessment (EIAR Appendix A9.4), there would be no significant effect from the works at the infrastructure sites on fluvial flood risk as the works would be located outside of the 0.1% AEP flood extent and so would not give rise to a change in channel or floodplain conveyance and storage. The construction of the RWI&PS access road and the WTP access road crossing the Roran watercourse floodplain have the potential to increase the risk of fluvial flooding, which was assessed in Section 7 of the Flood Risk Assessment. It has been concluded that there would not be an increase in the flood risk over the adjacent areas due to the Proposed Project.

2258. As stated in Section 4.15.1 of EIAR Chapter 4 (Proposed Project Description), ESB will continue to maintain water levels as it does today, within its Normal Operating Band and therefore, ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the

Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³ /s down the Old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference. There would therefore be no impact on flooding in the wider Shannon Basin as a result of the Proposed Project abstraction.

18.3.4 Algal Blooms and Health Impacts

2259. The following general observer submissions raised concerns about algal blooms and human health impacts:

Unique ID	Name of Individual or Organisation
WSP_SUB_14	Eva Killeen
WSP_SUB_15	Fergal Hayes
WSP_SUB_20	Kieran O'Connor
WSP_SUB_29	Suzanne Noble
WSP_SUB_32	William Lawrence Hodges
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_39	Derg Open Water Swim School and the swim group "Lively Wimmin Swimmin"
WSP_SUB_57	Lucy Murphy
WSP_SUB_72	Carol Killeen

2260. The general observer submission from Eva Killeen, William Lawrence Hodges and Carol Killeen raised concern that there are already seasonal flare ups of toxic algae in the lake, which can be harmful to humans, and the Proposed Project could exacerbate this.

2261. The general observer submission from Fergal Hayes raised concern that the lowering of the water level as part of the abstraction process may encourage the algal blooms that currently blight the lake.

2262. The general observer submission from Kieran O'Connor stated that the continuous presence of algae bloom in the local water courses poses the question of human health as the water is intended to be for human consumption after being treated.

2263. The general observer submission from Suzanne Noble stated that there appears to be little provision, if any, within this substantial submission to address the risk of a catastrophic concentration of toxic algae in the lake as a result of reduced water volume in the face of existing levels of agricultural run-off.

2264. The general observer submission from Carol-Anne Murphy stated that Lough Derg has already demonstrated recurrent instances of toxic algal bloom, which have increased recently and would be at

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risk of far greater water temperature increases, toxicity and other impacts when the Proposed Project is operational.

2265. The general observer submission from Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh stated that algae bloom is a serious issue on Lough Derg annually and the Proposed Project will only add to this concern.
2266. The general observer submission from Councillor Dr. Phyll Bugler stated that drought periods and higher temperatures would result in less oxygen being absorbed by the water resulting in increased algae bloom.
2267. The general observer submission from Derg Open Water Swim School and the swim group “Lively Wimmin Swimmin” stated that as lake users they are acutely conscious of the fragile sensitivity of the lake water to even the slightest changes to conditions which can trigger cyanobacteria. The submission continued that from regular repeat first-hand experience they are equally aware of the detrimental impacts, including human health problems and pet poisonings and further note that episodes of toxic algae and their impact on Lough Derg are a matter of public record, but have been overlooked in the planning application.

18.3.4.1 Applicant’s Response

2268. A response in relation to the potential for reduced water levels to result in pollution concentration and algae growth is provided in Section 12.2.3 in Chapter 12 – Water (General) of this report. The Proposed Project would not cause occurrence or worsen the occurrence of harmful algal blooms. In the event that there is an algal bloom in Parteen Basin, the microfiltration plant at the RWI&PS would remove any algal biomass prior to treatment at the WTP. There would therefore be no likely significant effect on health in relation to algal blooms from the Proposed Project.

18.3.5 Potential for Trihalomethane in Drinking Water

2269. Two submissions raised a specific issue relating to the potential for trihalomethane (THM) in the treated drinking water:

Unique ID	Name of Individual or Organisation
WSP_SUB_10	Christopher Campion
WSP_SUB_114	Tipperary County Council

2270. The general observer submission from Christopher Campion stated that the water for the Proposed Project is proposed to come from Parteen Basin. The submission continues that Clareville WTP currently takes water from the same place, treats it, and supplies Limerick, and that this treated water has levels of THM that far exceed maximum permitted levels. The submission further states that the water to be treated at Birdhill, to be then sent up the pipeline, would have the same or higher already-unlawful levels of the THM carcinogen.
2271. The prescribed body submission from Tipperary County Council stated that, during prolonged dry-weather conditions such as those experienced in August 2025, water within the proposed pipeline could remain stagnant for 17 days or more, and extended residence time significantly increases the risk of THM formation, as disinfectant by-products accumulate the longer chlorinated water remains in the system. The submission also warned that blue-green algae (cyanobacteria) in Lough Derg would require additional chlorine treatment to ensure safety, which in turn would elevate THM levels even further. This creates potential public-health concerns for consumers in Dublin, where the water would ultimately be delivered.

18.3.5.1 Applicant's Response

2272. The WTP has been designed to the Applicant's engineering standards, ensuring compliance with EU drinking water regulations. The Proposed Project abstraction is from Parteen Basin, which is upstream of the Clareville WTP that abstracts from the Ardnacrusha Headrace and Old River Shannon. The Proposed Project WTP will produce water that meets the requirements of the Drinking Water Regulations at the point of use. The control of THMs is a central consideration, and the primary disinfection process has been chosen as UV treatment for this reason, because using chlorine as the primary disinfectant would have the potential to result in excessive THM formation. The treatment process will include Granular Activated Carbon filters, which help remove organic compounds, improve taste and odour, and enhance water quality. This reflects a modern, resilient treatment approach. Chlorine will also be dosed at the Water Treatment Plant, but only at a level that is designed to prevent a biofilm from developing on the Treated Water Pipeline.

18.3.6 Potential Health Impacts on Limerick Citizens

2273. The general observer submission from Terry Forristal raised a specific issue relating to potential health impacts to Limerick citizens as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_30	Terry Forristal

2274. This general observer submission stated that Limerick City will suffer greatly if this pipeline goes ahead and will result in adverse effects on the health of Limerick Citizens and their access to clean, healthy water.

18.3.6.1 Applicant's Response

2275. The Proposed Project would have no impact on the downstream availability of water for the Clareville Water Treatment Plant, which supplies drinking water for Limerick City and its hinterland, and which abstracts from both the Ardnacrusha Headrace at Clonlara and from the Old River Shannon. As set out in Section 4.15.1 of EIAR Chapter 4 - Proposed Project Description, there would be no change to the statutory compensation flow of 10m³/s to the Old River Shannon, and it would remain ESB's responsibility to ensure the delivery of the compensation flow. The modelling carried out for the Proposed Project, as reported in EIAR Appendix A9.1 Annex A - Hydrological Modelling Report, demonstrates that this is achievable. ESB will continue to operate the Headrace within its normal water levels.

18.4 Response to Specific Issues Raised by Prescribed Bodies

18.4.1 Food Premises

2276. The prescribed body submission from the HSE made a specific observation in relation to food premises:

Unique ID	Name of Prescribed Body
WSP_SUB_94	Health Service Executive (HSE) - National Office for Environmental Health Services (NEHS)

2277. The prescribed body submission stated if construction involves excavation of existing drainage or disturbing rodent habitats near sensitive receptors, then a pest control plan should be implemented by the Proposed Project. This is irrespective of the conclusion in the EIAR Section 15.4.6.2.1 that the risk of increased rodent activity at food premises is minimal. HSE noted the identification of food preparation premises set out in paragraph 105 of EIAR Chapter 15 – Human Health. It provided a recommendation

that where food premises are at risk from increased rodent activity the pest control plan incorporates notification to the local Environmental Health Office.

18.4.1.1 Applicant's Response

2278. As set out in EIAR Chapter 15 – Human Health, the Applicant considers food-related health risks related to the disturbance of vermin extremely unlikely. There is no reason why there would be any change in the underlying vermin population as a result of the Proposed Project and, as such, there would be an imperceptible effect.

19. Landscape and Visual

19.1 Overview

2279. Twelve of the 114 submissions raised the issue of landscape and visual in relation to the Proposed Project.

2280. An assessment of landscape and visual effects was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 16 – Landscape and Visual. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.

2281. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding landscape and visual. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:

- Chapter 6 – Proposed Project Description; and
- Chapter 7 – Construction and Commissioning.

2282. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.

2283. The majority of submissions were in relation to potential landscape and visual impacts as a result of the Proposed Project, including the infrastructure sites, lighting and visual impacts to Lough Derg, which have been assessed in the EIAR and appropriate mitigation measures proposed.

2284. This Chapter is structured around the following sections:

- General matters raised in all general observer and Prescribed Body submissions regarding landscape and visual;
- Specific matters raised in general observer submissions regarding landscape and visual; and
- Specific matters raised by Prescribed Bodies regarding landscape and visual.

19.2 Response to General Issues Raised

19.2.1 Potential Impact of the Scale and Nature of the Proposed Project on the Landscape

2285. The following submissions raised concern about the potential landscape and visual impacts due to the scale and nature of the Proposed Project, particularly the above-ground elements of the WTP and BPT being inappropriate to its setting and could also impact rural character:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh

19.2.1.1 Applicant's Response

2286. Landscape and visual effects have been assessed and reported in EIAR Chapter 16 – Landscape and Visual, and appropriate mitigation measures proposed. Two of the submissions raised concerns on the landscape effects of the WTP and BPT.
2287. As described in Section 16.5 of EIAR Chapter 16 - Landscape and Visual, architectural input has been provided in respect of the WTP structures, as this would be a substantial scale feature of the Proposed Project contained in a sensitive landscape setting. The Project Architects considered the arrangement, scale, form and colour scheme of the buildings. A diverse approach to scale, massing and finishes is proposed. That is, the various cladding treatments are designed to break up the massing of the structures and to help them to recede against surrounding vegetation patterns through all seasons and remain subordinate in architectural language to the main buildings. The BPT, specifically the Control Building, has a more utilitarian appearance and would be finished in a recessive colour scheme of muted grey/green tones.
2288. As explained in Section 16.4.4.3 of EIAR Chapter 16 - Landscape and Visual, the WTP would represent a major industrial facility that would be contained within an immediate landscape context that is currently characterised by very low levels of built development and the low intensity rural land uses of pastoral farming and forestry. The change to the physical landscape fabric in its immediate environs would be a substantial one and there would be a noticeable increase in the intensity and scale of built development within the area. However, the perceived impact on landscape character would be less marked than its physical effect on the prevailing landscape pattern because the site is strongly contained and buffered by a substantial and well-established forest plantation to the south and by a dense network of hedgerows within the buffering area of farmland in all other directions. It would generally be read as a distant industrial facility wrapped in a matrix of predominantly rural land uses or, put another way, a rural landscape that contains an industrial facility rather than an industrialised landscape. As such, the assessment concludes that there would be no likely significant effect on the landscape from the WTP.
2289. As explained in Section 16.4.4.4 of EIAR Chapter 16 - Landscape and Visual, the BPT would present as a modest scale feature on top of Knockanacree Hill but would not be dissimilar to a large barn or rural shed, within this rural context of farmland and forestry. Owing to the location of the site on top of Knockanacree Hill, the brow of the hill itself would preclude visibility of the main Control Building, which is the main above-ground element of the BPT, from most surrounding locations. The access road would be one of the more visible aspects within the immediate vicinity of the site. Such access roads and indeed the barn-like structure of the Control Building are familiar elements in most rural landscapes, and it is not considered that the BPT would contribute to marked change in the prevailing rural landscape character especially beyond the immediate context. As such, the assessment concludes that there would be no likely significant effect on the landscape from the BPT.
2290. For both the WTP and BPT, landscape planting would help integrate the sites into the surrounding landscape and to compensate for the removal of vegetation during construction of the Proposed Project.

19.2.2 Adequacy of Proposed Screening and Buffer Zones for the Proposed Project

2291. The following submissions raised concern about the adequacy of the proposed screening and buffer zones for the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_76	Melissa Anne Kenny
WSP_SUB_93	Michael McKeogh

19.2.2.1 Applicant's Response

2292. These submissions are in relation to the WTP and BPT. Visual screening has been provided at these two sites in the form of landscape planting, as described in EIAR Chapter 4 - Proposed Project Description, Chapter 16 - Landscape and Visual and shown on the Landscape Plans that support Chapter 4.
2293. The landscape mitigation plan for the WTP, shown on EIAR Figure 4.91 and Figure 4.92, employs a combination of visual screening and integration. Visual screening is for the benefit of receptors within the immediate surrounds of the site and which are located at similar or slightly higher ground levels and would consist of perimeter hedgerow planting around the site. The purpose of internal 'integration' planting is to soften the visible façades of buildings, break up the perceived extent of the site and assimilate it with surrounding vegetation patterns. This would be in the form of individual specimen trees, formal hedgerows, several small native woodland plots and one large broadleaved woodland. This is mainly for the benefit of the elevated longer distance view of the Proposed Project from Tountinna Mountain, which has a more vertically oblique view across the site. Further, wet grassland would be planted in an area to the north of the site. The access road would include a combination of woodland, native species rich meadow, and hedgerow planting.
2294. The BPT building is substantially screened from all directions by terrain except from the top of Knockanacree Wood to the south. The view of the BPT from Knockanacree Wood would be substantially mitigated by perimeter screen planting along the southern and eastern embankments that would blend with the surrounding woodland context. Land to the east of the BPT has been incorporated into the Proposed Project to allow for woodland habitat creation, and this woodland would connect to Knockanacree Wood to the south of the site. Mixed mosaic habitat of trees and scrub is proposed in the north-eastern and north-western parts of the site. Additional woodland is proposed along the western boundary and to the north of the site. The access road will include native species rich meadow planting in the verge, hedgerow planting along the boundary, and woodland planting at the site entrance. Landscape planting for the BPT is shown on EIAR Figure 4.93 and Figure 4.94.

19.2.3 Design of Permanent Infrastructure at the RWI&PS

2295. The following submissions stated that permanent infrastructure at the RWI&PS should be designed to minimise visual impact:

Unique ID	Name of Individual or Organisation
WSP_SUB_05	Yvonne Moloney
WSP_SUB_18	John and Georgina Ringrose

19.2.3.1 Applicant's Response

2296. These submissions raise concerns on the landscape and visual effects of the RWI&PS. They specifically request that mitigation measures are included for the permanent infrastructure at Parteen Basin to minimise visual impact, including landscaping with native species.
2297. As described in Section 16.5 of EIAR Chapter 16 - Landscape and Visual, architectural input has been provided in respect of the RWI&PS, as this would be a substantial scale feature of the Proposed Project contained in a sensitive landscape setting. The architectural design for the RWI&PS focused on the Raw Water Pumping Station Building that fronts the Parteen Basin as this would be the most visible and potentially impactful feature of the facility. The design incorporates high-quality finishes of natural stone, glass and sinusoidal cladding, and a distinctive tripartite roof with two recesses to break up the massing of the structure as viewed from the west. For the other built structures within the RWI&PS site,

a sinusoidal cladding of a ‘signal grey’ colour would be utilised. While the design intent of the main Raw Water Pumping Station Building combines a bold yet sympathetic design with a visually recessive colour scheme, the design and tone of other structures is more wholly focused on them visually receding against a backdrop of vegetation across seasons.

2298. Landscape planting would help integrate the site into the surrounding landscape and to compensate for the removal of vegetation during construction of the Proposed Project. Woodland planting is proposed within the south-eastern area of the site and a mixed mosaic habitat proposed in the north-eastern part of the site. The landscape mitigation design for the RWI&PS (EIAR Figure 4.89 and Figure 4.90) seeks to reinstate riparian woodland vegetation insofar as possible within and around the perimeter of the site as a near backdrop for the proposed buildings that reduce the visual prominence of the buildings and also provide a sense of nesting them within the surrounding vegetation context rather than disrupting it.
2299. As set out in EIAR Chapter 16 – Landscape and Visual, the structures at the RWI&PS would remain substantially screened by surrounding mature vegetation. While the lakeside Raw Water Pumping Station Building would not be screened by mitigation planting for functional reasons and would remain visible from receptors within and around the opposing shores and slopes of Parteen Basin, the proposed mitigation planting would provide a sense of establishment and integration with the surrounding landscape. As such, there would be no likely significant effect on views from the RWI&PS.

19.2.4 Potential Visual Impact to Lough Derg

2300. The following submission raised concern about the potential visual impact that further lowering the water level during periods of drought could have on this very scenic lake:

Unique ID	Name of Individual or Organisation
WSP_SUB_15	Fergal Hayes

19.2.4.1 Applicant's Response

2301. As explained in Section 4.15.1 of EIAR Chapter 4 - Proposed Project Description, ESB will continue to maintain water levels as it does today, within its Normal Operating Band and therefore, ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the Old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference. There would therefore be no likely significant visual effect from lowering lake levels compared to the existing situation.

19.3 Response to Specific Issues Raised in General Observer Submissions

19.3.1 Potential Visual Impacts on Specific Landowner Lands

2302. Three submissions raised a specific issue relating to the potential visual impact of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_74	John Hensey
WSP_SUB_94	Health Service Executive (HSE) - National Office for Environmental Health Services
WSP_SUB_104	Peamount Healthcare

2303. The general observer submission from John Hensey raised concerns about the visual impact of the proposed construction depot in the vicinity of his lands.

2304. The prescribed body submission from HSE stated that floodlighting of compounds and the use of artificial light in areas of construction activity should be done according to methodology that reduces the likelihood of creating a nuisance to sensitive receptors whilst ensuring correct and safe illumination for different activities. In the absence of definitive published Irish Guidance in this area, reference should be made to UK Guidance: Society for Light and Lighting's Code for Lighting (published by the Chartered Institution of Building Services Engineers-UK) and the Health and Safety Executive's Lighting at Work (UK) (HSG38).

2305. The general observer submission from Peamount Healthcare raised concerns about the visual impact from lighting at the TPR on Peamount Hospital.

19.3.1.1 Applicant's Response

2306. As stated in Section 16.4.7.8 of EIAR Chapter 16 - Landscape and Visual, the Construction Compounds and Pipe Storage Depots would be a constant focus of activity and vehicle movements for a short-term duration. Nonetheless, the duration and readily reversible nature of these effects mean that they would not result in significant visual effects. There will be some night-time visual effects arising from construction lighting at the Construction Compounds and Pipe Storage Depots. In terms of intensity, this will emanate from mobile lighting structures that are close to the ground and direct light onto the immediate construction site. The lights will be cowled to reduce light spill into surrounding areas and will avail from ground level screening from hoardings around the construction works (see Section 5.6 of the Construction Environmental Management Plan in EIAR Appendix A5.1). Lighting will not be in operation outside of winter evening hours other than at 24/7 trenchless crossings where directional drilling may be required for several weeks at a particular location – a temporary effect. However, there would be no trenchless crossing or directional drilling associated with the TPR; and while there would be a trenchless crossing near the land of John Hensey, this would be over 1000m from the residential property on this land. The duration of lighting effects at Construction Compounds and Pipe Storage Depots may last for several years – a short-term effect, but not outside of winter evening hours. For these reasons, visual effects from Construction Phase lighting relating to the Construction Compounds and Pipe Storage Depots would not be significant.

2307. Once operational, at the TPR site, LED external lighting would be provided on the buildings and on traffic circulation areas around the site, in the parking area and at the entrance to the TPR site. Task lighting would be provided to facilitate operational maintenance. It is not proposed to put external lighting along the access road to the TPR. The design of external lighting at the TPR site would be carried out with reference to the following Standards:

- Lighting Guide LG06: The Exterior Environment (Chartered Institution of Building Services Engineers 2016)
- 2017 Guide on the Limitation of Effects of Obtrusive Lighting from Outdoor Lighting Installations 2nd Edition (Commission Internationale de l'Eclairage 2017)
- Bats and Artificial Lighting at Night. Guidance Note 08/23 (Bat Conservation Trust 2023)

2308. The measures for reducing operational light spill are set out in Section 4.4.7 of EIAR Chapter 4 - Proposed Project Description, and include, for example:

- External lighting would be designed to avoid night sky pollution/upward spill, and overspill into adjacent properties. This could include downward directional lighting and use of accessories such as hoods, cowls, louvres and shields to direct the light
- Exterior lighting would be automatically controlled and would be turned off unless operational staff are present on-site
- LED luminaires will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability
- Column heights will be carefully considered to minimise light spill. The shortest column height allowed will be used where possible
- Any external security lighting will be set on motion-sensors and short (one minute) timers

2309. As reported in Section 16.4.8.7 of EIAR Chapter 16 - Landscape and Visual, visual effects from night-time lighting at the TPR would be imperceptible.

19.4 Response to Specific Issues Raised by Prescribed Bodies

19.4.1 Protection of the Irish Landscape

2310. The following prescribed body submission stated it is essential that the quality, character and distinctiveness of this valuable resource is protected during the development of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_79	Fáilte Ireland

19.4.1.1 Applicant's Response

2311. Landscape and visual effects have been a key consideration in the design of the Proposed Project. This has included choosing a route for the pipeline that avoids environmentally sensitive areas, including sensitive landscapes, as far as reasonably practicable, and selecting infrastructure site locations that, as far as reasonably practicable, minimise environmental impacts.

2312. As set out in EIAR Chapter 16 - Landscape and Visual, the Proposed Project would not result in any likely significant effects on landscapes or views. Landscape planting is included at each of the infrastructure sites to screen views and integrate the sites into the surrounding landscape. Structures at the RWI&PS and WTP, which are in areas that have a high landscape sensitivity, have been architecturally designed to be in keeping with the existing setting. The pipeline would be below ground, with above ground infrastructure limited to features such as valves, though there would be landscape and visual effects during construction of the pipeline, as is typical for any large-scale infrastructure project. However, these effects would be short term, transient, and land would be reinstated to existing conditions following completion of each completed section of the pipeline corridor.

2313. Landscape and visual effects have been considered when assessing the impact of the Proposed Project on tourism, including impacts on amenity. As described in EIAR Chapter 14 - Population, there would be no likely significant effect on tourism, including amenity, from the Proposed Project.

19.4.2 Screening Planting

2314. The prescribed body submission from The Heritage Council recommended a condition be attached to any grant of planning in relation to screening planting:

Unique ID	Name of Prescribed Body
WSP_SUB_98	The Heritage Council

2315. This prescribed body submission recommended that a condition on screening planting for the large above ground infrastructure (i.e. key buildings) should be attached to any grant of planning.

19.4.2.1 Applicant's Response

2316. The Applicant acknowledges the recommended condition and requirements within the submission from The Heritage Council. The Applicant is committed to ongoing consultation with The Heritage Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

2317. Landscape planting for all the permanent Infrastructure Sites is included as a mitigation measure in the EIAR. The planting is shown on Figure 4.89 to Figure 4.99 of the EIAR, described in EIAR Chapter 4 - Proposed Project Description and Chapter 16 - Landscape and Visual, and included in the REAC (Annex G of EIAR Appendix A5.1), as measure LV1, which states – 'For all infrastructure sites, the Contractor(s) will adhere to the appropriate landscape mitigation plan (Figures 4.89 to 4.99 Landscape Plans)'.

2318. The Applicant considers that this mitigation fully addresses the issue raised.

19.4.3 Site-Specific Design

2319. The prescribed body submission from the Heritage Council raised a recommended a condition be attached to any grant of planning relating to site-specific design:

Unique ID	Name of Prescribed Body
WSP_SUB_98	The Heritage Council

2320. The prescribed body submission recommended that a condition be attached to any grant of planning, requiring the employment of ongoing site-specific design within the construction corridor to further reduce the number of trees and hedgerows to be removed, as far as possible.

19.4.3.1 Applicant's Response

2321. The Applicant acknowledges the recommended condition and requirements within the submission from The Heritage Council. The Applicant is committed to ongoing consultation with The Heritage Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

2322. As stated in Section 5.9.3 of EIAR Chapter 5 - Construction and Commissioning, in accordance with the mitigation hierarchy, the Proposed Project has been designed to avoid or reduce environmental effects where reasonably practicable. The mitigation hierarchy will continue to be applied during

subsequent stages of the project. Opportunities to avoid or reduce the potential environmental effects of the Proposed Project will be identified at each of the subsequent phases of the development of the Proposed Project, including detailed design and construction. This will include, but will not be limited to, seeking opportunities to avoid removing all habitat within the Construction Working Width (i.e. retaining more habitat within the Planning Application Boundary).

2323. Any habitats, including trees, scrub or hedgerows adjacent to, or within, the Proposed Project which are intended to be retained will be afforded adequate protection, by complying with National Roads Authority Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes, prior to construction works commencing. The mitigation measures related to this are set out in the REAC, which is Annex G of the Construction Environmental Management Plan (EIAR Appendix A5.1).
2324. The Applicant considers that commitment to continue applying the mitigation hierarchy during subsequent stages of the project fully addresses the issue raised.

19.4.4 Potential Visual Impacts from the RWI&PS

2325. The prescribed body submission from Tipperary County Council raised concern about the visual impacts at the RWI&PS:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

2326. This prescribed body submission stated that Tipperary County Council is concerned about the visual impact on the eastern side of the Parteen Basin, and advised that further visual assessment is required for the RWI&PS, in addition to requesting that more detailed photomontages should be prepared to better illustrate the impact of this infrastructure. The submission continued that the EIAR would benefit from a photomontage of the Raw Water Intake element as it would appear from users of the river channel within the Parteen Basin as this is a visually sensitive setting, and the imagery provided fails to properly present this site as it would appear to river users. The submission also raised concerns relating to the BPT, stating that its elevated landscape position at Knockanacree will result in this infrastructure being particularly visible until such a time as the proposed landscaping and screen planting matures. The submission stated that, should permission be granted all landscaping commitments contained in the EIAR to be implemented in full and landscaping / boundary screening should implemented in the first planting season following commencement of the Proposed Project.

19.4.4.1 Applicant's Response

2327. Embedded design mitigation and planting mitigation in relation to the RWI&PS is described in the response in Section 19.2.3 of this report. As set out in EIAR Chapter 16 – Landscape and Visual, the structures at the RWI&PS would remain substantially screened by surrounding mature vegetation. While the lakeside Raw Water Pumping Station Building would not be screened by mitigation planting for functional reasons and would remain visible from receptors within and around the opposing shores and slopes of Parteen Basin, the proposed mitigation planting would provide a sense of establishment and integration with the surrounding landscape. As such, there would be no likely significant effect on views from the RWI&PS.
2328. The viewpoints that were selected are sufficient and appropriate for identifying and assessing the visual effects from the RWI&PS. Seven viewpoints were selected, which are representative views of the RWI&PS, each with associated photomontages in EIAR Appendix A16.2 - Photomontages - Raw Water Intake & Pumping Station. This includes two viewpoints (VP 5 and VP6) that represent views across Parteen Basin towards the RWI&PS. Regarding the request for a viewpoint from the Parteen Basin

itself, it should be noted that preparation of accurate photomontages from water-based receptors can be difficult due to inevitable movement during capture of panoramic photography and the precise geo-position of that photography. Furthermore, there are alternative ways of understanding the scale and nature of visibility from the Parteen Basin and the appearance of the RWI&PS from the Parteen Basin is well represented in the architectural drawing set and in particular the western elevations (see the Architectural Statement in Appendix A of the SID Engineering Report). It is acknowledged within EIAR Chapter 16 – Landscape and Visual that the water edge structures of the RWI&PS would be openly visible for water-based users of the Parteen Basin. In Section 16.4.8.2 of EIAR Chapter 16 it states “the RWI&PS would be openly visible from the waters of the Parteen Basin for waterborne recreationalists, but even from here it would not be a bulky or visually dominant feature due to its modest scale in the context of broad views”. The summary paragraph of this section (para 262) states “Overall, it is considered that the proposed RWI&PS would not give rise to significant visual effects because, although it is located in an undeveloped, wooded section of the Parteen Basin shoreline, it confidently fronts the waterbody with a legibility that illustrates that it has a functional requirement to be there. The form and colour scheme of the buildings, particularly the main intake structure, would also blend well with the surrounding vegetation context with a softened roof profile that favourably presents, rather than attempting to hide, the structure”.

2329. The landscape and visual effect from the BPT is described in Section 19.2.1 of this report, and planting mitigation described in Section 19.2.2. In summary, there would be no likely significant effect on views from the BPT. The mitigation would be very effective, as it would almost entirely screen views of the BPT features. The proposed planting would also blend with the existing mature woodland and would therefore not appear out of place or contribute to noticeably greater sense of visual containment. The Applicant acknowledges there would be a visual impact from certain views until landscape planting establishes. However, as set out in Section 16.4.8.4 of EIAR Chapter 16 – Landscape and Visual, the main Control Building, which is the main above-ground element of the BPT, would not be visible from most surrounding locations due to topography and existing vegetation. The Control Building would be visible from the edge of Knockanacree Wood, which would alter the nature of this farmland/forest scene and would therefore increase the intensity of built development in view. However, the proposed planting would mitigate this view, and even before the planting establishes, it would not foreshorten or obstruct any distant aspects of the view.
2330. Mitigation planting will be implemented at the BPT in line with EIAR Figure 4.93 and Figure 4.94, as per measure LV1 in the REAC (Annex G of EIAR Appendix A5.1 – Construction Environmental Management Plan), which states – ‘For all infrastructure sites, the Contractor(s) will adhere to the appropriate landscape mitigation plan (Figures 4.89 to 4.99 Landscape Plans)’. As set out in Section 5.19 of EIAR Chapter 5 – Construction and Commissioning, landscape planting would take place following construction of all the BPT elements, however, during construction screening embankments / berms would be constructed by the appointed Contractor using surplus excavated material from the tank excavation in the hillside to reduce visual effects.

20. Cultural Heritage

20.1 Overview

2331. Ten of the 114 submissions raised the issue of cultural heritage in relation to the Proposed Project.
2332. An assessment of cultural heritage was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 17 – Cultural Heritage. The assessment complied with the relevant legislation, standards and guidance as set out in that Chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
2333. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding cultural heritage. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 6 – Proposed Project Description; and
 - Chapter 7 – Construction & Commissioning.
2334. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
2335. The majority of submissions were in relation to impacts on archaeology, which has been assessed in the EIAR and appropriate mitigation measures proposed.
2336. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding cultural heritage;
 - Specific matters raised in general observer submissions regarding cultural heritage; and
 - Specific matters raised by Prescribed Bodies regarding cultural heritage.
2337. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.

20.2 Response to General Issues Raised

20.2.1 Potential Impact on Archaeological and Architectural Heritage within Ireland's Ancient East

2338. The following submission raised concerns about the potential impact of the Proposed Project on archaeology and architectural heritage, within Ireland's Ancient East:

Unique ID	Name of Individual or Organisation
WSP_SUB_42	Eileen McNamara

20.2.1.1 Applicant's Response

2339. The submission relates to potential impacts to archaeology and architectural heritage as a result of the construction of the Proposed Project. A cultural heritage assessment (covering sites of archaeological, architectural and cultural heritage significance) was carried out and reported in EIAR Chapter 17 - Cultural Heritage. This concluded that in the absence of mitigation measures, there would be 16

potential significant effects on archaeological elements/receptors but that there would be no likely significant effects on architectural heritage. The pre-mitigation significant effects would be on various Areas of Archaeological Potential (including, but not limited to, watercourses, possible fulachtaí fia, drumlin, wetlands, field systems and enclosures, and sites of past settlement) and two features listed in the Record of Monuments and Places due to the excavations required during the construction of the Proposed Project. There would also be potential project-wide significant effects to previously unrecorded archaeological remains within bogland, greenfield areas and previously unrecorded archaeological sites during construction.

2340. However, after the implementation of mitigation, there would be no residual significant effects. Mitigation measures for cultural heritage, which have been proposed with regard to best practice standards and guidance from the National Monuments Service of the Department of Housing, Local Government and Heritage, are outlined in Section 17.5 of EIAR Chapter 17 – Cultural Heritage. Examples of mitigation measures include but are not limited to:

- Preservation *in situ* of recorded monument sites and areas of archaeological potential by fencing them off from construction activities;
- Archaeological assessments and archaeological testing to be carried out prior to construction;
- Written and photographic recording to be carried out at certain sites prior to construction;
- Detailed bogland inspections prior to construction; and
- A Project Archaeologist will be appointed for the Proposed Project to ensure that all mitigation measures are carried out to the full and to ensure effectiveness of the measures.

2341. As outlined in Section 17.5 of EIAR Chapter 17 – Cultural Heritage, archaeological monitoring will be carried out during the construction of the Proposed Project at the locations specified within Section 17.5.2 and at all greenfield areas across the Proposed Project (that are not first assessed by archaeological testing). Monitoring may lead to further mitigation, such as archaeological excavation (preservation by record). Any further mitigation will require the agreement of the National Monuments Service of the Department of Housing, Local Government and Heritage (DoHLGH).

20.2.2 Potential Impact on the Cultural Significance of the Shannon

2342. The following submissions raised concerns about the potential impact of the Proposed Project on the cultural significance of the Shannon:

Unique ID	Name of Individual or Organisation
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_50	James Crowley

20.2.2.1 Applicant's Response

2343. The Proposed Project will not affect any intangible aspects of the perceived cultural heritage significance of the River Shannon. The proposed abstraction point is located on the edge of the modern Parteen Basin, which involved the excavation of a large section of the River Shannon to create the basin as a reservoir in the 1920s. This fed the Ardnacrusha generating station as part of the Shannon Hydro-Electric Scheme, which also saw the construction of a significant head and tail race. The abstraction point is 140m southeast of the original river channel. The process of abstraction of the water from the Parteen Basin will not stop water flowing along the remaining intact river channel (c. 3.1km to the south-southwest) nor affect any perception of the River Shannon as a sacred space. It should be noted that whilst large watercourses may have possessed a ritual role in the landscape during the prehistoric and historic periods, the River Shannon is not recorded as an archaeological site in its own

right, albeit the archaeological potential of watercourses that have not been affected by modern works, is acknowledged in EIAR Chapter 17 – Cultural Heritage.

20.3 Response to Specific Issues Raised in General Observer Submissions

20.3.1 Archaeological Surveys on Specific Landowner Lands

2344. The general observer submission from John Quinn and Sandra Frayne raised a specific issue relating to the absence of proper archaeological surveys on their land:

Unique ID	Name of Individual or Organisation
WSP_SUB_103	John Quinn and Sandra Frayne

2345. This general observer submission raised concern about the absence of any proper archaeological surveys on their lands and on nearby lands.

20.3.1.1 Applicant's Response

2346. The submission raises the potential for archaeological features on their land and specifically highlights two barrow features identified in Graiguesallagh close to the pipeline route marked as KD010-051 and KD010-056 on maps produced for the Sites and Monuments Records. The cultural heritage baseline relevant to the Proposed Project is set out in Section 17.3 of EIAR Chapter 17 - Cultural Heritage; this includes the two monuments raised in the submission. As set out in Section 17.4 of EIAR Chapter 17, construction effects result from excavation works associated with the Proposed Project. As such, the potential for effects within the entire Planning Application Boundary of the Proposed Project have been considered. As these two monuments are outside of the Planning Application Boundary, there would be no potential for a likely significant effect, and they are not considered further in the assessment.

2347. The submission also mentions the 'Lady's Chapel' and 'Lady's Well' (KD010-013001). These are not included in the cultural heritage assessment as they are outside the study area, with no potential for an effect from the Proposed Project.

2348. The Proposed Project would cross a stream at this location (Lyreen Farm), which is assessed as an Area of Archaeological Potential in EIAR Chapter 17 (AAP-154). This is because watercourses possess archaeological potential due to the fact they have attracted human activity throughout the prehistoric and historic periods. As stated in Section 17.5 of EIAR Chapter 17, an archaeological underwater/wade assessment will be undertaken at this location prior to construction. The results of this assessment may lead to additional mitigation, such as archaeological excavation (preservation by record) and/or monitoring. Any further mitigation will require the agreement of the National Monuments Service of the DoHLGH. All mitigation measures will be overseen by a Project Archaeologist, who will be appointed to manage the archaeological aspects of the development.

2349. Section 17.5 of EIAR Chapter 17 – Cultural Heritage explains that archaeological monitoring will be carried out during the construction of the Proposed Project across all greenfield areas of the Proposed Project (that are not first assessed by archaeological testing). Monitoring may lead to additional mitigation, such as archaeological excavation (preservation by record). Any further mitigation will require the agreement of the National Monuments Service.

20.4 Response to Specific Issues Raised by Prescribed Bodies

20.4.1 Potential Impact to National Monuments at Ashley Park and Ardcroney

2350. The prescribed body submission from the OPW raised a specific issue relating to the potential impact of Proposed Project on national monuments in Ashley Park and Ardcroney:

Unique ID	Name of Individual or Organisation
WSP_SUB_96	Office of Public Works (OPW)

2351. This prescribed body submission stated that upon review of the planning drawings for Proposed Project, the OPW notes that the construction of the treated water pipeline has the potential to impact the attendant grounds of two state-owned national monuments (Ashley Park: TN015-009-573 and Ardcroney: TN015-013-604). The submission continued that the OPW would welcome the opportunity to engage with the Applicant on these state-owned national monuments.

20.4.1.1 Applicant's Response

2352. The Applicant welcomes future consultation with the OPW on this matter. Both of these national monuments - TN015-009573 and TN015-013604 - are included in the cultural heritage assessment baseline (Table 17.34 in EIAR Chapter 17 – Cultural Heritage). As the monuments are outside of the Planning Application Boundary, there would be no likely significant effects on these monuments.

20.4.2 Geophysical Surveying and LiDAR Data

2353. The prescribed body submission from The Heritage Council raised a specific issue relating to Light Detection and Ranging (LiDAR) data and the extent of archaeological surveys for the Proposed Project:

Unique ID	Name of Prescribed Body
WSP_SUB_98	The Heritage Council

2354. This prescribed body submission queried the absence of LiDAR in the EIAR as its use is now an established practice as there are now considerable holdings of LiDAR which are publicly available online. The submission also stated that the geophysical surveying has been limited in extent, and that its use in combination with the existing LiDAR resource could have resulted in a more informed identification of the Zones of Archaeological Potential. The submission continued that An Coimisiún Pleanála would be justified in seeking further information for this if they believe it necessary, or it would be equally possible for this to be conditioned in advance of construction during liaisons with the National Monuments Service.

20.4.2.1 Applicant's Response

2355. LiDAR data is available to the public within the Open Topographic Data Viewer, which is hosted by the Geological Survey of Ireland, Department of Housing, Local Government and Heritage, Discovery Programme and Transport Infrastructure Ireland. The accessible site was published in 2018 with a limited amount of datasets and since that date the site has continually evolved as more surveys are carried out by all of the above bodies and added to the national map. Due to the rural nature of the Proposed Project, very little of the Proposed Project is covered by the available LiDAR dataset, which currently focuses on national routeways, some urban centres and areas of known geological and archaeological significance. As part of this response, the dataset was reviewed and parts of the Greater Dublin Area are now available on the Open Topographic Viewer. The path of the Proposed Project was reviewed in April 2026 (from the R407 to Peamount), but no further features of archaeological potential

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were identified, in addition to those already identified throughout the baseline of EIAR Chapter 17 – Cultural Heritage.

2356. Given the scale of the Proposed Project, geophysical surveying was confined to areas of specific archaeological potential or large greenfield areas, which were deemed suitable for survey. This included the site of the proposed reservoir at Peamount and two locations along the path of the pipeline as laid out in EIAR Appendix A17.1 of the EIAR. This approach was confirmed with the National Monuments Service in August 2024 (as laid out in Table 17.2 of EIAR Chapter 17 – Cultural Heritage). No further investigations were requested by the National Monuments Service at that time.
2357. As stated in Section 17.5 of EIAR Chapter 17 – Cultural Heritage, all archaeological underwater/wade assessments, geophysical survey and archaeological testing programmes that form a detailed programme of mitigation, will be carried out in advance of construction and under licence to the DoHLGH. These measures are included in the Register of Environmental Actions and Commitments, which is Annex G of the Construction Environmental Management Plan (Appendix A5.1 of the EIAR). The results of the assessments may lead to additional mitigation, such as archaeological excavation (preservation by record) and/or monitoring. Any further mitigation will require the agreement of the National Monuments Service of the DoHLGH. The Applicant is consulting with the National Monuments Service on the scope of pre-construction archaeological surveys and testing programme and these works will be managed by a Project Archaeologist appointed to the Project.

20.4.3 Recommended Conditions

2358. The prescribed body submission from The Heritage Council recommended a number of conditions relating to cultural heritage to be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_98	The Heritage Council

2359. This prescribed body submission highlighted mitigation measures to be conditioned, as follows:
- Employ a project archaeologist to manage all aspects of the archaeological project including management of any archaeological contracting companies involved in fieldwork;
 - Seek specialist wetland / peatland archaeological expertise in the areas where the corridor will traverse peatland deposits, and this needs to be required by a strict condition;
 - Prioritise a formal code of practice between the Applicant and the National Monuments Service;
 - Programme of advance geophysical survey and field investigation testing take place prior to the main contractor starting construction, in liaison with the National Monuments Service;
 - Site Investigation and archaeological testing will be essential for key areas of interest (e.g. Modreeny Church, graveyard, deserted medieval settlement). Areas such as this which have been identified as experiencing a potential Profound Moderate to Profound Negative (in the absence of mitigation), should also be accompanied by some level of geophysical work to compliment site testing. It is important to ensure that the mitigation measures, which involve further archaeological testing to some degree, are fully robust, as in the absence of such measures, the effects would be significant in EIAR terms; and
 - Proposed Project should set out to present itself as an exemplar of good practice in managing the archaeological resource (including underwater archaeology) in large infrastructure schemes, up to and including the publication of the results.

20.4.3.1 Applicant's Response

2360. The Applicant acknowledges the recommended conditions and requirements within the submission from the Heritage Council. The Applicant is committed to ongoing consultation with the Heritage Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.
2361. The submission suggests inclusion of conditions related to the appointment of a project archaeologist, specialist with wetland/peatland archaeological expertise, and site investigation and archaeological testing for key areas of interest which would experience potential significant effect. These mitigation measures are proposed in Section 17.5 of EIAR Chapter 17 – Cultural Heritage and are included in the Register of Environmental Actions and Commitments (Annex G of EIAR Appendix A5.1 – Construction Environmental Management Plan):
- The Applicant has employed a Project Archaeologist for the Proposed Project. The Contractor(s) will also be required to appoint their own Archaeological Consultant(s) to ensure that the mitigation and monitoring measures are implemented in full;
 - The Applicant will require the appointed Contractor(s) to provide specialist wetland / peatland archaeological expertise in the areas where the corridor will traverse peatland deposits;
 - The Applicant's formal Code of Practice is under finalisation with the DoHLGH;
 - A Programme of advance geophysical survey and field investigation testing will take place during the initial phase of the main contracts prior to construction works commencing; and
 - Geophysical survey, archaeological testing, archaeological monitoring and, if required, archaeological excavation, will be undertaken in consultation with the National Monuments Service.

20.4.4 Adequacy of Archaeological Surveys / Proposed Conditions

2362. The prescribed body submission from the DAU (National Monuments Service of the DoHLGH) raised a specific concerns about the adequacy of archaeological surveys:

Unique ID	Name of Prescribed Body
WSP_SUB_83	Development Applications Unit (DAU) - National Monuments Service of the DoHLGH

2363. This prescribed body submission stated that the assessment of the large majority of the Proposed Development Site (PDS) has relied on a series of walkover surveys only. The submission continued that the assessment of effects on Underwater Cultural Heritage (UCH) relies on a series of walkover surveys and no Underwater Archaeological Impact Assessments (UAIAs) have been undertaken on any of the proposed watercourse crossings.
2364. The submission further stated that the Department considers that, given the scale of the project and, in particular, the extent of ground disturbance that will be required within the pipeline corridor as a whole, a much more extensive programme of Advance Geophysical Survey, Advance Archaeological Test Excavation and Advance Peatland Surveys should be carried out prior to construction to ensure identification of archaeological remains, and allow adequate time to mitigate impacts. The submission also stated that a Project Archaeologist shall be appointed to oversee and advise on all aspects of the Proposed Project from design, through inception to completion and the CEMP shall include the location of any and all archaeological or cultural heritage constraints relevant to the proposed development as

set out in EIAR Chapter 17 – Cultural Heritage. The submission also requested that the planning authority and the National Monuments Service shall be furnished with a final archaeological report describing the results of all archaeological monitoring and any archaeological investigative work / excavation required, following the completion of all archaeological work on site and any necessary post-excavation specialist analysis.

20.4.4.1 Applicant's Response

2365. The Applicant acknowledges the recommended conditions and requirements within the submission from the DAU (National Monuments Service of the DoHLGH). The Applicant is committed to ongoing consultation with the National Monuments Service throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.
2366. The Applicant notes that the recommended conditions are similar to those recommended by the Heritage Council and has responded to these in Section 20.4.3 of this report.
2367. It should be noted that during the course of the EIAR compilation, a number of consultations were held with the National Monuments Service, the most recent being August 2024 (as laid out in Table 17.2 of Chapter 17 – Cultural Heritage). At that time, the National Monuments Service were in agreement with the mitigation measures laid out in Chapter 17 and expressed satisfaction with regards to the methodology for the compilation of the EIAR chapter.

20.4.5 Planning Conditions Specific to the Kildare Country Council Area

2368. The prescribed body submission from Kildare County Council recommended a number of cultural heritage-related conditions for proposed works within Kildare County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

2369. This prescribed body submission requested the following cultural heritage-related conditions be attached to any grant of planning for the Proposed Project:
- Targeted non-intrusive advance geophysical survey;
 - Targeted advance archaeological test excavation;
 - Targeted underwater archaeology surveys or wade surveys;
 - Targeted built heritage surveys; and
 - All intrusive advanced investigations carried out should be subject to a programme of archaeological monitoring.

20.4.5.1 Applicant's Response

2370. The Applicant acknowledges the recommended conditions and requirements within the submission from Kildare County Council. The Applicant is committed to ongoing consultation with Kildare County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached

to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

2371. The Applicant notes that the recommended conditions are similar to those recommended by the Heritage Council and has responded to these in Section 20.4.3 of this report.

20.4.6 Planning Conditions Specific to the Offaly County Council Area

2372. The prescribed body submission from Offaly County Council recommended a number of cultural heritage-related conditions for proposed works within Offaly County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

2373. This prescribed body submission recommended that conditions be attached to any grant of planning to ensure that all archaeological requirements are fulfilled where required by the Department:

- Preparation of a full Archaeological Impact Assessment (AIA) for the Offaly section, with a dedicated and detailed focus on the Killyon Abbey / Killyon Manor area;
- Completion of a pre-construction peatland archaeological survey for all bogland sections;
- Comply with specific National Monuments Service requirements including:
 - No construction or site preparation work may be carried out on the site until all archaeological requirements of the National Monuments Service are complied with; and
 - Implementation of archaeological monitoring protocols for all intrusive groundworks, with preservation in situ undertaken wherever feasible. Implementation of archaeological monitoring protocols for all intrusive groundworks, with preservation in situ undertaken, wherever feasible.
- Retain a suitably qualified licensed archaeologist to supervise all sub-surface works on site. The archaeologist shall agree a programme of works with the Applicant and prepare a Method Statement on the finds retrieval strategy for agreement with the National Monuments Service;
- In the event of archaeological features being located in the course of the archaeological monitoring, the Applicant shall facilitate the archaeologist in fully recording such features, including if necessary the archaeological excavation of such features. In the event of significant archaeological features on site, the archaeologist retained by the developer shall immediately contact the National Monuments Service. The National Monuments Service shall determine the further archaeological resolution of the site, including if necessary archaeological excavation or the preservation in situ of archaeological remains.
- A written report containing the results of the archaeological monitoring shall be forwarded on completion to the National Monuments Service; and
- The careful management of vibration, traffic, and compound siting to avoid indirect impacts on Protected Structures near Cangort Park and in Killeigh village along with the former Brewery outbuildings, and the wider industrial landscape of Offaly Mill is raised by Offaly County Council's conservation architect.

20.4.6.1 Applicant's Response

2374. The Applicant acknowledges the recommended conditions and requirements within the submission from Offaly County Council. The Applicant is committed to ongoing consultation with Offaly County

Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.

2375. The Applicant notes that the recommended conditions are similar to those recommended by the Heritage Council and has responded to these in Section 20.4.3 of this report.
2376. The Applicant confirms that an archaeological impact Assessment (AIA) for the Offaly section has already been carried out as part of EIAR Chapter 17 – Cultural Heritage. No effects are predicted on the Killyon Abbey / Killyon Manor area (RMP OF035-018/001), which are located 13m south of the Proposed Project, where a power connection will run along an existing road. The site, which possesses no upstanding remains, will not be directly or indirectly affected by the Proposed Project.
2377. Regarding Killeigh Village, the historic buildings at the centre of the village are located c. 360m to the west-northwest of the proposed project and will not be subject to direct or indirect effects. Similarly, the protected structures at Cangort Park are located over 480m to the east of the Proposed Project and will not be subject to any direct or indirect effects.

20.4.7 Planning Conditions Specific to the Tipperary Country Council Area

2378. The prescribed body submission from Tipperary County Council recommended a number of cultural heritage-related conditions for proposed works within Tipperary County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

2379. This prescribed body submission recommended that all groundworks be subject to archaeological supervision and subject to an archaeological mitigation strategy.

20.4.7.1 Applicant's Response

2380. The Applicant acknowledges the recommended conditions and requirements within the submission from Tipperary County Council. The Applicant is committed to ongoing consultation with Tipperary County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation. The Applicant has provided a general response to conditions, including how the Applicant proposes to manage pre-commencement conditions, in Chapter 2 – Overarching Matters of this report.
2381. The Applicant notes that the recommended conditions are similar to those recommended by the Heritage Council and has responded to these in Section 20.4.3 of this report.

21. Material Assets

21.1 Overview

2382. Eight of the 114 submissions raised the issue of material assets in relation to the Proposed Project.
2383. An assessment of materials assets was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 18 – Material Assets. The assessment complied with the relevant legislation, standards and guidance as set out in that chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
2384. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding materials assets. The responses in this Chapter are related to those in the following Chapters of this report which should be read alongside this Chapter:
- Chapter 6 – Proposed Project Description;
 - Chapter 7 – Construction and Commissioning;
 - Chapter 9 – Traffic and Transport; and
 - Chapter 16 – Climate.
2385. Many submissions, including from the Local Authorities included proposed conditions related to roads / highways in the event that ACP were minded to grant the SID Planning Application. There is overlap in this regard between this Chapter on Materials Assets and Chapter 9 – Traffic and Transport. To address this, proposed conditions related to roads / highways are generally combined and considered in Chapter 9 – Traffic and Transport of this report to avoid duplication or omissions.
2386. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
2387. There were only a small number of responses specific to the Material Assets and these were generally from the organisations responsible for assets that the Proposed Project will intersect with.
2388. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding material assets;
 - Specific matters raised in general observer submissions regarding material assets; and
 - Specific matters raised by Prescribed Bodies regarding material assets.

21.2 Response to General Issues Raised

2389. There were no general matters raised in relation to Material Assets

21.3 Response to Specific Issues Raised in General Observer Submissions

21.3.1 Recommended Conditions for Planning

2390. The general observer submission from the National Transport Authority (NTA) raised a number of conditions that it would recommend to be attached to any grant of planning by ACP:

Unique ID	Name of Individual or Organisation
WSP_SUB_95	National Transport Authority (NTA)

2391. This general observer submission stated that, in the event of a grant of permission, the NTA would recommend that a condition is attached which requires the Applicant to engage with the NTA and Irish Rail, at detailed design and pre-construction stages, in relation to:

- The operation of existing rail services at the Proposed Project's interface with the rail network;
- The DART+ South West project; and
- The longer-term objective to extend DART services to Naas / Sallins, to minimise potential disruption during the Construction Phase, to ensure that the Proposed Project is compatible with the requirements of the DART+ South West project and that it takes into consideration the future extension of DART services to Naas / Sallins.

2392. The submission also stated that, in relation to any other interface points between the Proposed Project and the rail network, it is recommended that a similar condition be applied.

21.3.1.1 Applicant's Response

2393. The Applicant acknowledges the recommended conditions and requirements within the submission from NTA. The Applicant is committed to ongoing consultation with the NTA throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements.

2394. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.

21.3.2 Potential Impact on Cushaling Wind Farm

2395. The following submission raised concern about the Cushaling Wind Farm's location within the wayleave of the Proposed Project.

Unique ID	Name of Individual or Organisation
WSP_SUB_81	Brian Farrell

21.3.2.1 Applicant's Response

2396. Cushaling Wind Farm was identified as a wind farm in the vicinity of the Proposed Project in Table 18.19 of Chapter 18 (Material Assets) of the EIAR. The wind farm was assessed in Section 18.4.2.9 and the assessment concluded that there would be no significant effect on the wind farm as a result of the Proposed Project.

2397. This submission is also addressed in Section 24.3.3 of this Report.

21.4 Response to Specific Issues Raised by Prescribed Bodies

21.4.1 Impact on the Strategic Road Network

2398. The prescribed body submission from TII highlighted the settlement effect of the trenchless crossings of Strategic Roads:

Unique ID	Name of Prescribed Body
WSP_SUB_99	Transport Infrastructure Ireland (TII)

2399. Specifically, TII identified:

“With concern TII must advise the Commission that settlement levels in ranges reported by the applicant far exceed the thresholds set out on TII Publication (Standard) CC-PAV-04007). Further, no evidence has been provided to demonstrate the deviation from TII established requirements would be acceptable. In addition, TII also consider that the mitigation measures proposed do not address the established TII requirements for a motorway crossing”.

2400. The submission recommended that prior to a decision being made, the applicant shall submit appropriate plans and details which shall demonstrate that the proposed crossings of the M7 (crossing refs. RDX0007 and RDX0015) are in strict compliance with TII Publications:

- No works for and or in proximity of these crossings will commence until consent has been received from TII in accordance with Section 53 of the Roads Act 1993, as amended.

2401. In addition, TII set out that prior to commencement of development, an updated CEMP shall be prepared which is to include the following commitments in relation to trenchless underground crossings of the national roads network (M7, N52, N62 and N80) as appropriate:

- A pre-construction survey along the length of the crossing over the extents of the motorway/dual carriageway boundary.
- Commitment to and methodology for, the preparation and submission of, a post-construction survey along the length of the crossing over the extents of the motorway/dual carriageway boundary.
- Record of consultation with the Motorway Maintenance and Renewals Contract (MMaRC) Network B Contractors, via TII and the relevant road authority.
- Record of works specific indemnities, Section 53 consent and arrangements for third party access as arise following consultation with thirdpartyworks@HI.ie; and
- Details demonstrating compliance of works on, or in the vicinity of the national road with TII Publications, including TII Publication (Standard) CC-PAV-04007 - Requirements for the Reinstatement of Openings in National Roads.

21.4.1.1 Applicant's Response

2402. The Applicant engaged with TII prior to submission of the SID Planning Application including providing details on the extent of settlement. The Applicant has considered the risk of settlement and implemented measures within the design, such as the selection of the vertical alignment to try and reduce the risk.

2403. Applicant is satisfied that the assessment reported in Chapter 18 (Material Assets) has identified any likely significant effects which could arise as a result of the Proposed Project, however it acknowledges the request for information made by TII

2404. The Applicant can confirm that the potential for ground settlement associated with the constructing the proposed trenchless crossings using a tunnel boring machine has been assessed by deriving greenfield settlement contours, which represent the predicted magnitude and extent of ground movement in the absence of buildings or existing infrastructure, arising from tunnelling and shaft construction works. The settlement assessment has been informed by ground parameters derived from published literature and available ground investigation data.

2405. In accordance with industry best practice, settlement from tunnelling has been assessed using the Volume Loss method, which estimates ground movement based on the amount of material lost during tunnel construction. The induced settlement profile perpendicular to the tunnel alignment has been derived using the semi-empirical approach originally proposed by Peck (1969) and subsequently refined by O'Reilly and New (1982), which assumes a Gaussian (bell-shaped) settlement trough, with the trough volume equal to the total volume of ground loss during tunnelling. Selection of settlement trough width parameters (K values) has been informed by published guidance, case history data, and experience from comparable international and Irish projects in similar ground conditions. Accordingly, K values of 0.5 for boulder clay and transition layers, 0.35 for granular materials, and 0.55 for bedrock have been adopted.
2406. At this Preliminary Design stage, conservative upper-bound Volume Loss parameters of 3% for superficial deposits and 2% for rock strata have been adopted to provide worst-credible estimates of potential ground settlement. These parameters have been applied to ensure that potential effects are robustly identified and assessed at EIAR stage, in advance of the Contractor undertaking detailed design, finalising the construction methodology, and completing any supplementary ground investigations. The adopted parameters will be reviewed and refined at later design stages by the Contractor, informed by additional ground investigation data and the finalised construction approach.
2407. The predicted settlement values reported in Table 18.21 of Chapter 18 (Material Assets) of the EIAR for trenchless crossings RDX007 (11 mm) and RDX015 (13 mm) represent conservative, upper-bound estimates prepared at this stage of design. These values do not represent design targets but rather worst-credible estimates, developed to ensure that potential effects are appropriately identified and assessed at EIAR stage, in advance of the Contractor undertaking detailed design, finalising construction methodology, and completing any supplementary ground investigations.
2408. The assessment has adopted conservative assumptions in respect of both volume loss and settlement trough characteristics. As the project progresses, the Contractor will refine the ground model using additional ground investigation data, finalise the construction methodology, and agree suitable settlement control measures with TII. This process is expected to result in lower predicted settlement values than those currently reported, consistent with best-practice industry guidance for early-stage environmental assessment, where embedded mitigation and construction control are defined through detailed design development.
2409. With reference to TII Publication CC-PAV-04007, the Applicant notes that the settlement thresholds cited therein principally relate to:
- Localised surface defects, such as edge depressions, surface crowning, and reinstatement failure; and
 - Cumulative settlement within reinstated pavement layers arising from inadequate backfilling or compaction.
2410. These criteria are not directly applicable to the typically smoother settlement profiles typically associated with trenchless TBM construction, which occur over a wider extent and arise from a fundamentally different settlement mechanism. The predicted settlements therefore represent gradual, distributed ground movements, rather than localised pavement defects, and as such do not constitute exceedances of the intervention thresholds defined in CC-PAV-04007.
2411. Notwithstanding this distinction, the Applicant fully recognises the importance of ensuring that the structural integrity and long-term serviceability of the M7 are maintained. Accordingly, the Proposed Project includes the following embedded mitigation measures:

- A refined settlement assessment will be undertaken by the Contractor for each trenchless crossing, informed by additional ground investigation data and the finalised construction methodology.
- The Contractor will adopt best industry practice to minimise settlement during TBM trenchless crossings, including appropriate TBM selection, controlled face pressure and excavation volumes, immediate annular gap grouting, robust lining installation, and comprehensive real-time monitoring in accordance with Section 3.7.1 of CC-PAV-04007, incorporating defined trigger levels and response actions.

2412. Any exceedance of agreed trigger levels will be addressed through pre-agreed mitigation or remediation measures, developed in consultation with TII.
2413. In response to this submission the Applicant is planning further engagement with TII and can prepare further information as necessary if ACP considers it appropriate.
2414. In addition, the Applicant acknowledges the recommended conditions and requirements within the submission from TII. The Applicant is committed to ongoing consultation with the throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The CEMP is not be the appropriate document to record an updated settlement assessment but the Applicant has committed in the EIAR to undertaking one and is committed to providing this to TII in appropriate documentation / reports / method statements.
2415. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.
2416. The Applicant notes that there were overlaps in requests from TII for further information related to design matters, construction matters and Road Safety Audits which due to the structure of this report are considered in Chapter 6 – Proposed Project Description, Chapter 7 – Construction and Commissioning, and Chapter 9 – Traffic and Transport. These responses should be considered in conjunction with one another.

21.4.2 Interactions and Recommended Conditions for Planning

2417. The following prescribed body submissions highlighted the interactions of the Proposed Project with their assets and included recommended conditions to be attached to any grant of planning by ACP:

Unique ID	Name of Prescribed Body
WSP_SUB_73	EirGrid
WSP_SUB_78	Waterways Ireland

2418. The prescribed body submission from EirGrid stated that EirGrid note that the proposed route interfaces with several existing, permitted, and proposed transmission circuits. The submission recommended that, should planning be granted by ACP, a planning condition be included to the effect that any interface between the Proposed Project and EirGrid and Electricity Supply Board Network (ESBN) assets and proposed projects are resolved by agreement prior to finalising design.
2419. The prescribed body submission from Waterways Ireland noted that the Proposed Project will cross the Grand Canal in two locations and stated that early engagement is sought on appropriate crossing design and methodology which protects the structural integrity of canal bank infrastructure, and incorporates the Grand Canal Greenway into proposals, and the location of proposed lay-by at Kilpatrick / Ticknevin.

21.4.2.1 Applicant's Response

2420. The Applicant acknowledges the recommended conditions and requirements within the submission from EirGrid and Waterways Ireland, which are in line with consultation between the Applicant and these organisations to-date. The Applicant is committed to ongoing consultation with them throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements.
2421. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.

21.4.3 Potential Impact on the Structural Integrity of County Offaly's Road Network

2422. The prescribed body submission from Offaly County Council raised concerns about the potential negative impact of the Proposed Project on County Offaly's road network:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

2423. This prescribed body submission stated that road stability on peat soils continues to be a significant engineering challenge for Offaly County Council. The submission continued that, given the large extent of peat soils onto which road crossings associated with the pipeline development are sought, significant concerns are raised that the 53 (no) proposed road crossings will have an increasingly negative impact on the structural integrity of the County's road network, both at construction and at operational stage.

21.4.3.1 Applicant's Response

2424. The Applicant welcomes the comments from Offaly County Council and agrees that the construction method will need to account for peat conditions. The methods of working in peat contained in Chapter 5 – Construction and Commissioning set out how the applicant will manage this during the construction of the pipeline. Specifically with regard to the matters raised by the Council consideration will be given to the material used and method of backfilling of material over the pipeline to manage the risk of effects on the reinstated roads. This was summarised under the topic of settlement in assessment reported in Chapter 18 – Material Assets which included a commitment to use appropriate back fill of open excavation to avoid settlement of ground under existing assets.
2425. The impact of additional traffic on the road network, specifically during construction is considered in chapter 8 – Traffic and Transport.

21.4.4 Potential Impact to the Shannon Estuary and Port

2426. The prescribed body submission from Limerick County Council raised a specific issue relating to the potential impact of the Proposed Project on the Shannon Estuary and Port:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council

2427. This prescribed body submission stated that the potential impact on the Shannon Estuary and Port area need to be robustly environmentally analysed.

21.4.4.1 Applicant's Response

2428. The Applicant does not agree that there is a potential impact on Shannon Port from the Proposed Project. There are no direct works proposed at the port (as part of the Proposed Project) and therefore, the only matter that the Applicant considers that the submission may be referring to is a change in water levels. This is addressed in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report. In summary, there would not be an identifiable effect on water levels within the tidal port that would have a potential effect on the operation of Shannon Port.

21.4.5 Planning Conditions Specific to the Offaly County Council Area

2429. The prescribed body submission from Offaly County Council recommended a number of infrastructure interface-related conditions for the proposed works within Offaly County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

2430. This prescribed body submission requested the following road network-related conditions be attached to any grant of planning for the Proposed Project:

- The requirement for a Special Development Contribution and a bond so as to ensure that any structural damage resultant from the proposed road crossings and haul routes on the regional and local road network and long-term maintenance requirements can be addressed, without additional undue costs being burdened on the Local Authority due to the Proposed Project (both at construction and operational stage (peat stability); and
- It is recommended that a bond be attached (to the value of €1,092,000.00) in order to secure the reinstatement of public roads which may be damaged as a result of the Proposed Project works which incorporates 53 (number) road crossings within the public road network and also by the transport of materials required to accommodate development works along identified haul routes within County Offaly.

21.4.5.1 Applicant's Response

2431. Section 48 of the Planning and Development Act 2000 (as amended) (the "Planning Act") enables a planning authority, when granting an ordinary planning permission under section 34, to include conditions requiring the payment of a development contribution. This contribution goes towards funding infrastructure or facilities which will be provided for, or, on behalf of the local authority and that will benefit the local area. Section 48 also provides that each local authority shall prepare a development contribution scheme and that this scheme will state the basis for determining the contributions and shall have regard to the actual costs of providing the public infrastructure.

2432. This does not ordinarily apply to applications made under a section 37E as these are projects that are by their nature deemed to be of strategic or economic importance to the State or region. This is definitively so in the case of the Proposed Project, which has the capacity to address water supply needs for up to 50% of the State's population. However, ACP, in its discretion, may apply a condition requiring the payment of a contribution under section 48 if certain conditions are satisfied.

2433. The Applicant is working to transform our water infrastructure and services for communities all over Ireland. The Proposed Project is vital for social and economic growth. The delivery of this vital water supply is a key benefit in itself. Notwithstanding this, it is recognised that communities in proximity to the proposed infrastructure can be impacted during construction. As part of its application, the Applicant submitted a detailed plan on Community Benefits Scheme (CBS). This CBS was prepared following much research and stakeholder engagement. The Applicant held multiple WSP briefings with all

relevant local authorities to provide an overview of the proposed approach to the CBS and to seek feedback on the research findings within the study area. The research and stakeholder engagement undertaken identified opportunities to support socio-economic, environmental and educational progress in host communities. The proposed scheme aims to offset some of the social impacts of this major infrastructure development in a targeted, fair and proportionate way.

2434. Offaly County Council seeks the payment of a contribution of €100,000 per km for the pipeline associated with the Proposed Project in its local authority area. The 2013 Development Contribution Guidelines states that development contributions: *“should not have a major divergence in the level of contributions adopted by other local authorities in the area; - impede job creation or facilitate unsustainable development patterns”*.
2435. The Offaly contribution request fails to comply with the guidelines. A levy of €100,000 per kilometre would represent a disproportionate amount. Offaly County Council has not set out the basis for the contribution levied in its SCS as required by Section 48(2)(a) of the Planning Acts. Section 48 (2)(b) provides *“a scheme may make provision for payment of different contributions in respect of different classes or descriptions of development”*. This has not been done, and instead Offaly CC is targeting a single project to be carried out by an identified and specified developer, i.e. the Applicant. It is difficult to see what the local authority proposes doing or has done by way of providing public infrastructure and facilities in the county as defined in section 48(17) which justifies this charge. The 2013 Guidelines states that in making development contribution schemes it *“is equally important that clear linkages are demonstrated between the contributions collected [and] infrastructure provided”*. This is not the case here.
2436. In relation to the request from Offaly County Council in respect of bonds, the Applicant would note that ACP do not have the power to require bonds for road reinstatement. A local authority has power under section 34(4)(g) of the Planning and Development Act 2000-2026 to impose (g) conditions for requiring *“the giving and maintaining of adequate security for satisfactory completion of the proposed development.”* ACP has no power to do this when granting planning permission in respect of SID development under section 37A to J of the Planning and Development Acts. Presumably this is because SID development is development essential to fulfilling public policy objectives and is often works for the public benefit. If damage is caused to roads, by any person, local authorities may recover the costs of repair under various sections of the Roads Act 1993 and the Water Services Act 2014. See Guidelines for Managing Openings in Public Roads 2017 at [guidelines-for-managing-openings-in-public-roads.pdf](#). The Applicant submits that it is not appropriate to impose an additional obligation indirectly by way of planning condition which does not align with the legislation. See *Ashbourne Holdings v An Bord Pleanála* [2003] IESC 18.

21.4.6 Planning Conditions Specific to the Tipperary County Council Area

2437. The prescribed body submission from Tipperary County Council recommended a number of infrastructure interface-related conditions for the proposed works within Tipperary County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

2438. This prescribed body submission requested the following road network-related conditions be attached to any grant of planning for the Proposed Project:

- A bond to the sum of €1,620,000 required to repair major road defects resulting from the Proposed Project; and

- The Applicant should be required to contribute towards the costs which Local Authorities along the route will incur in monitoring the works as well as responding to queries from the public during the Construction Phase. A sum of €65,000 per year per Local Authority is recommended to cover these costs.

21.4.6.1 Applicant's Response

2439. In respect of Tipperary's request for a bond, please see response to a similar request from Offaly County Council above in section 21.4.5.

2440. In the case of Tipperary, they have requested that Class 17 and Class 18 (levy on abstraction) be applied to the Proposed Project. The Applicant does not believe there is justification or rationale to apply this contribution. The rationale is set out in section 21.4.5 above in response to Offaly County Council request for development contribution applies here and we also set out some specific additional reasons below.

2441. Section 5.1 of the Tipperary Development Contribution Scheme ("TDCS") states that the planning authority must be satisfied that the basis for determining the contribution levels can be adequately justified and supported and it is not clear to the Applicant how a contribution for the provision of a public service by way of the laying of pipes or for water abstraction, at no cost to the local authority has been justified. In the preparation of their Development Contribution Schemes, planning authorities are required to have regard to the Development Contribution Guidelines for Planning Authorities. These were issued by the Department of the Environment, Community and Local Government, in January 2013 under Circular Letter PL1/2013. They must also take account of the non - statutory guidance previously issued in Departmental Circulars PD 4/2003 and PD 5/2007. The 2013 Guidelines states that in making development contribution schemes it *"is equally important that clear linkages are demonstrated between the contributions collected [and] infrastructure provided"*.

2442. The TDCS says its rationale for development contributions is:

"Para 3.0 Rationale for Development Contributions When new development occurs it impacts on the capacity of existing infrastructure networks. Such development places a greater demand on the services provided by Tipperary County Council. It is considered equitable that developers contribute to the financial burden associated with the provision of enhanced infrastructure networks facilitating new development. However, the DCS ensures that the cost of infrastructural improvements does not fall disproportionately on new development and takes account of benefit to existing development. "

2443. The TDCS being applied to the Proposed Project does not accord with the rationale. There is no financial burden on TCC associated with the Proposed Project. On the contrary, the Applicant has had extensive interactions with Tipperary County Council's Directors of Services to understand existing local community infrastructure, policy and development plans, and as a result the CBS proposes that a significant percentage will be allocated to Tipperary County Council. The Applicant remains of the view that the funding allocation and duration should reflect the Proposed Project's impact on communities during the five-year Construction Phase rather than a fund based on an abstraction or development levy over the Proposed Project's full operational life, which is more aligned with private developer led, or profit driven, projects. Therefore, the Applicant's Community Benefit Scheme will propose a more equitable and proportionate utilisation of limited public taxpayers' money.

2444. Class 18 of the TDCS relates to *"the laying of pipes for the movement of water through the County and the ongoing abstraction of water from any point within the County"* and the level of contribution is charged at €15 per linear metre and 1 cent per m³ abstraction.

2445. Planning permission is not required for the abstraction of water and section 48 contributions cannot be levied for an activity for which planning permission is not required. The charge for the abstraction is in fact a permanent and perpetual toll or tax on an abstraction and on water going through the pipes in Tipperary not a “contribution” towards the cost of any past or proposed development which TCC or any local authority has carried out or proposes to carry out under its DCS. There is no statutory authority in planning law for charging abstractors for abstracting water. Moreover, there are no works listed in the DSC that could justify this levy even if it were legally imposed. A permanent levy of 1 cent per m³ would mean that the Applicant is paying a completely disproportionate share of TCC’s capital budget simply for transporting water through the county.
2446. Abstraction charge is a tax or toll, not a contribution. A contribution is a payment towards something. ACP can only levy the contribution towards something where Tipperary can point to “public infrastructure and facilities which it or another local authority has provided or will provide and which benefit development in its area”. If TCC has not provided infrastructure or facilities (and will not be providing them), they cannot be charged for. There is no statutory power to require a contribution for abstractions and no power to tax or toll abstractions.
2447. It is submitted that there is no justification for a condition requiring a contribution to Tipperary County Council in respect of the pipeline for the reasons above or in respect of the abstraction because there is no statutory power in planning law for levying contributions, taxes or charges on abstractions.

22. Resource and Waste Management

22.1 Overview

2448. Five of the 114 submissions raised the issue of resource and waste management in relation to the Proposed Project.
2449. An assessment of resource and waste management was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 19 - Resource and Waste Management. The assessment complied with the relevant legislation, standards and guidance as set out in that chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
2450. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding resource and waste management. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 6 – Proposed Project Description;
 - Chapter 7 – Construction and Commissioning; and
 - Chapter 12 – Water (General).
2451. Cross references to these other relevant Chapters have been included, where relevant. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
2452. There were only a small number of submissions specific to the resource and waste management. These related to the risk created by waste management at the WTP, which has been assessed in the EIAR and appropriate mitigation measures proposed; and the request for conditions to be imposed on the planning permission if ACP were minded to grant consent.
2453. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding resource and waste management; and
 - Specific matters raised by Prescribed Bodies on resource and waste management.

22.2 Response to General Issues Raised

22.2.1 Management of Waste at the Proposed Water Treatment Plant

2454. The following submissions raised concerns about the management of waste at the proposed WTP:

Unique ID	Name of Individual or Organisation
WSP_SUB_71	Ballymore Eustace Trout and Salmon Anglers Association
WSP_SUB_88	Inland Fisheries Ireland (IFI)

22.2.1.1 Applicant's Response

2455. The submissions received raised concerns that there would be a risk of pollution from the storage and management of waste. The Applicant recognises this concern, in particular the sensitivity of the Kilmastulla River, and as a result has taken account of this in the design of the Proposed Project. This included incorporating embedded design measures into the proposals, as set out in Chapter 9 – Water, and Chapter 19 – Resources and Waste Management of the EIAR. In particular, avoiding discharges

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from the treatment process at the WTP (and the RWI&PS) to receiving water bodies including the Kilmastulla River.

2456. The residual water sludge would be stored, dried and then transported from site. There would be no discharge of sludge to the environment. As set out in Section 4.6.5 of EIAR Chapter 4 – Proposed Project Description, the sludge storage buildings would be covered to prevent contaminated rainwater runoff from the stored sludge being generated. Supernatant from the sludge thickeners and expressate from the sludge dewatering process would be pumped, via the washwater treatment side stream, to the head of the treatment process.
2457. It is intended that, where practicable, circular economy outlets for residual water sludge will be identified so that this could be put to a beneficial reuse via sustainable outlets ahead of disposal – an approach that aligns with the requirements of the waste management priority hierarchy. Examples of potential sustainable outlets and beneficial uses are outlined in Section 19.2.3.7 of EIAR Chapter 19 - Resource and Waste Management.
2458. There will be no discharge of wastewater from the WTP to the environment. A response in relation to process water and drainage water from the WTP, and associated risk of pollution to the Kilmastulla River, is included in Section 12.4.3 in Chapter 12 – Water (General) of this Report.
2459. The assessments reported in Chapter 19 – Resource and Waste Management and in Chapter 9 – Water of the EIAR concluded that with the proposed mitigation in place (embedded and additional mitigation as defined in the EIAR) there would be no likely significant effect as a result of the waste arising at the WTP.

22.3 Response to Specific Issues Raised by Prescribed Bodies

22.3.1 Planning Conditions Specific to the Kildare County Council Area

2460. The prescribed body submission from Kildare County Council recommended waste-related conditions for the proposed works within Kildare County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_111	Kildare County Council

2461. This prescribed body submission requested that the following waste-related conditions be attached to any grant of planning for the Proposed Project:
- Prior to the commencement of the Proposed Project, the Applicant shall prepare a Construction Resource and Waste Management Plan in accordance with the EPA Best Practice Guidelines for the Preparation of Resource and Waste Management Plan for Construction and Demolition Projects. The Plan shall include specific proposals as to how the Plan will be measured and monitored for effectiveness. These details shall be placed on file and retained for public record and the Plan must be submitted to the Planning Authority for written agreement; and
 - The Applicant is to note that the importation of soils and stone for the purposes of land raising or landscaping may require prior authorisation under Section 39 of the Waste Management Act, 1996 (as amended). Prior to commencement, the Applicant shall outline in detail in their proposals in this regard, and no development shall commence until such time as when their waste importation plan has been approved in writing by the Planning Authority.

22.3.1.1 Applicant's Response

2462. The Applicant acknowledges the recommended conditions and requirements within the submission from Kildare County Council. The Applicant is committed to ongoing consultation with Kildare County

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Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.

2463. A Construction Waste and Byproduct Management Plan (CWBMP) has been prepared for the Proposed Project and forms part of the CEMP (Annex C of EIAR Appendix A5.1). The plan has been written in accordance with the best practice guidance from the EPA. The purpose of the CWBMP is to provide the information necessary to ensure that construction waste is managed in accordance with current legal and best practice requirements, and this will include any requirements in relation to the importation of soils and stone.

2464. The Applicant confirms that no waste will be imported for use in land raising or landscaping. If material importation is required, the Applicant confirms that all such activities will comply with the relevant legislation requirements.

22.3.2 Planning Conditions Specific to the Offaly County Council Area

2465. The prescribed body submission from Offaly County Council recommended waste-related conditions for the proposed works within Offaly County Council that should be attached to any grant of planning:

Unique ID	Name of Prescribed Body
WSP_SUB_113	Offaly County Council

2466. This prescribed body submission requested the following waste-related conditions be attached to any grant of planning for the Proposed Project:

- All wastes arising from/at the proposed development shall be managed in accordance with the Waste Management Acts 1996 as amended. While awaiting removal, all waste materials shall be stored in designated areas protected against spillage or leachate run-off;
- The applicant is required to obtain an Integrated Pollution Control licence from the EPA prior to any extraction/excavation of peat and any associated Works such as drainage;
- All uncontaminated soil and stone imported onto the site shall comprise non-waste byproduct, in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011, S.I. No. 126 of 2011;
- No development shall commence prior to registration with the Environmental Protection Agency of the material to be imported onto the lands, in accordance with Article 27 of the European Communities (Waste Directive) Regulations 2011, S.I. No. 126 of 2011;
- Prior to commencement of development, details regarding the origin / source of proposed soil and stone to be imported onto the site shall be submitted for the written agreement of the Planning authority;
- Prior to construction commencing on site, the developer is requested to provide details of how effluent will be collected and treated during the Construction Phase; and
- In the event that foul waste is to be removed regularly from site by a contractor during the Construction Phase, the Applicant shall submit a signed maintenance contract with an Authorised Waste Collector and all foul waste must be transported to an Authorised Waste Facility.

22.3.2.1 Applicant's Response

2467. The Applicant acknowledges the recommended conditions and requirements within the submission from Offaly County Council. The Applicant is committed to ongoing consultation with Offaly County

Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.

2468. All waste and materials will be stored and handled in accordance with relevant legislation and best practice. Section 4.2.3 of the CWBPMP (Annex C of EIAR Appendix A5.1) contains the measures relevant to storage of waste and byproducts, and Section 4.2.4 details the management of waste and by-product streams.
2469. If the importation of material is required, the Applicant confirms that any such activity will be undertaken strictly in accordance with the relevant legislation. In such circumstances, the Applicant will submit an Article 27 by-product notification to the EPA (where required), where the relevant the local authorities will be consulted on the proposals as part of that statutory process.
2470. Foul water arising from welfare facilities provided during the Construction Phase will be collected and discharged to a storage tank which will be regularly emptied by a suction tanker to the nearest wastewater treatment plant. There will be no outlet from any of these storage tanks.
2471. In relation to peat, an Integrated Pollution Control (IPC) Licence will not be required as these licenses are required for the commercial extraction of peat only. All works in peat will be undertaken in line with the construction methods set out in Appendix A5.3 of the EIAR (Methods of Working in Peat).

22.3.3 Planning Conditions Specific to the Tipperary County Council Area

2472. The prescribed body submission from Tipperary County Council recommended waste-related conditions to be attached to any grant of planning:

Unique ID	Name of Individual or Organisation
WSP_SUB_114	Tipperary County Council

2473. This prescribed body submission stated that the Proposed Project will generate significant volumes of soils and construction-related materials, and as such, requested the following waste-related conditions be attached to any grant of planning for the Proposed Project:
- Implementation of robust environmental safeguards to ensure full compliance with national waste and environmental protection legislation;
 - All activities related to the collection, transport, recovery, and disposal of materials will be required to comply with the Waste Management Act 1996 (as amended), including the mandatory use of authorised waste collectors and authorised waste facilities, thereby ensuring that all soil and material movements are fully traceable and environmentally responsible;
 - Reference to the utilisation of, and adherence to, the Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects, as published by the EPA) in 2021 is included in any decision to grant permission. The appointed contractor(s) must be guided by the EPA Guidance document thereby ensuring that all waste / by product handling follows recognised best practice;
 - The effective management of all Construction Phase arisings, whether intended for reuse, recovery, transport or disposal, is essential; and
 - Assessment and implementation of the Proposed Project must consider the National Waste Management Plan for a Circular Economy 2024-2030 to avoid adverse impacts on regional waste infrastructure and capacity.

22.3.3.1 Applicant's Response

2474. The Applicant acknowledges the recommended conditions and requirements within the submission from Tipperary County Council. The Applicant is committed to ongoing consultation with Tipperary County Council throughout the development of the Proposed Project, and accepts the principle, spirit, and intent of the suggested conditions and requirements. The Applicant will comply with the conditions attached to any grant of planning approval, in addition to those already included as mitigation or monitoring measures in the EIAR and the CEMP which are all included in the planning application documentation.

2475. All waste and materials will be stored and handled in accordance with relevant legislation and best practice. Section 4.2.3 of the CWBPMP (Annex C of EIAR Appendix A5.1) contains the measures relevant to storage of waste and byproducts, and Section 4.2.4 details the management of waste and by-product streams. The plan has been written in accordance with the best practice guidance from the EPA. Mitigation measures for the Proposed Project have been proposed with consideration of the National Waste Management Plan for a Circular Economy 2024-2030. These measures are set out in Section 19.5 of EIAR Chapter 19 and include, for example:

- Reuse of materials where feasible on site;
- Use of recycled materials where feasible;
- Ordering of materials to be managed in line with construction requirements and schedules; and
- Applying circular economy and waste hierarchy principles to divert waste from landfills.

2476. The proposed targets for the construction wastes and by-products for the Proposed Project are included in Section 3 of the CWBPMP.

23. Risk of Major Accidents and Disasters

23.1 Overview

2477. Seven of the 114 submissions raised the issue of the risk of major accidents and/or disasters in relation to the Proposed Project.
2478. An assessment of the risk of major accidents and/or disasters was carried out and reported in the EIAR submitted as part of the SID planning application in Chapter 20 - Risk of Major Accidents and/or Disasters. The assessment complied with the relevant legislation, standards and guidance as set out in that chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
2479. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding the risk of major accidents and/or disasters. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 2 – Overarching Issues;
 - Chapter 6 – Proposed Project Description;
 - Chapter 7 – Construction and Commissioning;
 - Chapter 11 – Water (Hydrological Modelling and Water levels);
 - Chapter 12 – Water (General); and
 - Chapter 14 – Agriculture.
2480. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
2481. There were only a small number of responses specific to the risk of major accidents and/or disasters. These related to the risk of the spreading of disease, which has been assessed in the EIAR and appropriate mitigation measures proposed; and the risk of a leak from the pipeline, which was been considered within the selection of the pipeline material and was assessed and reported in the EIAR, as set out in this Chapter.
2482. This Chapter is structured around the following sections:
- General matters raised regarding the risk of major accidents and/or disasters;
 - Specific matters raised in general observer submissions regarding the risk of major accidents and/or disasters; and
 - Specific matters raised by Prescribed Bodies regarding the risk of major accidents and/or disasters.
2483. Within these sections there is some overlap and inter-relationship between the matters raised and where relevant cross references have been included to link any General and Specific Matters raised by the Prescribed Bodies.

23.2 Response to General Issues Raised

23.2.1 Risk of Spread of Disease Along the Proposed Pipeline Route

2484. The following submissions raised concerns about the need to examine the risk of the spread of disease as a result of the Proposed Project and the effect that disease such as tuberculosis or anthrax would have on human health and agriculture:

Unique ID	Name of Individual or Organisation
WSP_SUB_65	Samuel Norris
WSP_SUB_77	Shane Mathews
WSP_SUB_113	Offaly County Council
WSP_SUB_114	Tipperary County Council

23.2.1.1 Applicant's Response

2485. Observations related to the spread of disease, even where identified as a comment in respect of the assessment of the risk of major accidents and/or disasters, has been responded to in Chapter 14 – Agriculture of this Report.

2486. This is also the case for the conditions requested by Offaly County Council regarding biosecurity measures which are also considered in Chapter 14 – Agriculture of this Report.

2487. The assessment reported in EIAR Chapter 20 - Risk of Major Accidents and/or Disasters drew on the conclusion from EIAR Chapter 11 - Agriculture. As this risk is assessed as part of the agriculture assessment, and appropriate mitigation and management measures identified, the risk is considered to be as low as reasonably practicable. There would therefore not be a risk of a major accident and/or disaster from a spread of livestock disease as a result of the Proposed Project.

23.2.2 Risk of Pipeline Failure

2488. The general observer submission from Eileen McNamara raised general issues relating to the potential for pipeline failure and the level of intervention that would be required in the event of failure and the challenge in managing water pressures:

Unique ID	Name of Prescribed Body
WSP_SUB_42	Eileen McNamara

23.2.2.1 Applicant's Response

2489. The Applicant does not agree with the statement that the failure of the pipeline is very likely. Coated steel has been selected as the pipeline material as catastrophic failures on steel pipelines are extremely rare. In line with the Operational Strategy (EIAR Appendix A4.1), in the unlikely event that a leakage incident should occur along the pipeline, remotely operated automated Line Valves will be closed in order to limit the amount of water that can discharge from the affected section of pipe. If required, the section of pipe can then be drained down, water will be de-chlorinated and there will be a controlled discharge to nearby watercourses, at flow rates appropriate to their capacity. Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur. Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners is minimised. Pre-emptive monitoring and inspections will be carried out routinely to allow the Applicant to identify and address any potential

issues before they arise. Further information on the risk of infrastructure failure is provided in the response in Section 23.4.1 of this Report.

2490. The Applicant notes this submission overlaps with some of the matters addressed under Sections 23.3.1 23.4.1 of this report.

23.3 Response to Specific Issues Raised in General Observer Submissions

23.3.1 Risk of Infrastructure Failure

2491. The general observer submission from Melissa Anne Kenny raised specific issues relating to the potential for pipeline/infrastructure failure at the BPT and the level of intervention that would be required in the event of failure and the challenge in managing water pressures:

Unique ID	Name of Prescribed Body
WSP_SUB_76	Melissa Anne Kenny

2492. The submission stated that the proposed development poses a significant risk to the surrounding natural environment including water courses, habitats and protected species. The site is within a sensitive catchment and any malfunction or leakage from the BPT could lead to a contamination of water sources resulting in long term ecological damage.

23.3.1.1 Applicant's Response

2493. The Applicant notes the objection regarding risks to the surrounding natural environment, including watercourses, habitats and protected species, and that any malfunction or leakage could potentially cause contamination with long-term ecological damage.
2494. The Applicant submits that measures have been incorporated into the permanent design of the infrastructure which reduce the risk of leakage / malfunction. For the BPT this includes designing the tanks themselves to have spare capacity in the event that additional water needs to be stored during a shut-down procedure. In addition, the valves and tanks will be designed to withstand water pressures and will meet all required technical standards.
2495. Regarding the pipeline itself, coated steel has been selected as the pipeline material as catastrophic failures on steel pipelines are extremely rare. In line with the Operational Strategy (EIAR Appendix A4.1), in the unlikely event that a leakage incident should occur along the pipeline, remotely operated automated Line Valves will be closed in order to limit the amount of water that can discharge from the affected section of pipe. If required, the section of pipe can then be drained down, water will be de-chlorinated and there will be a controlled discharge to nearby watercourses, at flow rates appropriate to their capacity. Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur. Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners is minimised.
2496. For the whole of the Proposed Project pre-emptive monitoring and inspections will be carried out routinely to allow the Applicant to identify and address any potential issues before they arise.
2497. Any potential risk of the environmental effects during the construction of the Proposed Project will be managed through the Construction Environmental Management Plan (CEMP) in Appendix A5.1 of Chapter 5 – Construction and Commissioning of the EIAR, which sets out a framework for construction management including minimum requirements for mitigation, monitoring and reinstatement and provides the basis for contractor method statements and package-specific CEMPs consistent with the

measures submitted with the application. This includes a Surface Water Management Plan in Annex A of Appendix A5.1 which includes a range of management measure to prevent a pollution incident.

23.4 Response to Specific Issues Raised by Prescribed Bodies

23.4.1 Risk of Infrastructure Failures

2498. The following prescribed body submissions raised concerns relating to potential infrastructure failure:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce
WSP_SUB_114	Tipperary County Council

2499. The prescribed body submission from An Taisce stated that specific consideration should be given to proposed management and rapid response protocols for the BPT which will be handling large amounts of pressure.

2500. The prescribed body submission from Tipperary County Council raised the need for clear protocols in the event of infrastructure failures, including leak detection and emergency response in ecologically sensitive areas.

23.4.1.1 Applicant's Response

2501. There appears to be a misunderstanding regarding the Break Pressure Tank. It is not “handling large amounts of pressure” and is in fact open to the atmosphere by means of vents in the roof so it not under any pressure at all. In addition – the BPT is a relatively small reservoir which is largely buried so, in the highly unlikely event of a failure, very little water would be able to escape other than into the ground.

2502. The risk of a release of water and chemicals to the environment as a result of a range of factors, including sabotage and pipeline deterioration, were assessed and reported in Chapter 20 - Risk of Major Accidents and/or Disasters in the EIAR. The Applicant recognises that the submissions from Tipperary County Council and An Taisce were not directed towards the EIA assessment but rather about how the risk of infrastructure failure would be managed. Relevant embedded design measures were set out in EIAR Chapter 20. The submission also addressed the implementation and enforcement of the CEMP, which is addressed in the response in Chapter 2– Overarching Matters of this Report.

2503. Coated steel has been selected as the pipeline material as catastrophic failures on steel pipelines are extremely rare. In line with the Operational Strategy (EIAR Appendix A4.1), in the unlikely event that a leakage incident should occur along the pipeline, remotely operated automated Line Valves will be closed in order to limit the amount of water that can discharge from the affected section of pipe. If required, the section of pipe can then be drained down, water will be de-chlorinated and there will be a controlled discharge to nearby watercourses, at flow rates appropriate to their capacity. Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur. Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners is minimised. Pre-emptive monitoring and inspections will be carried out routinely to allow the Applicant to identify and address any potential issues before they arise.

2504. Information on the location of sensors along the pipeline, and the timeline for addressing leaks once detected, was included in the Operational Strategy (contained in Appendix A4.1 of the EIAR). In summary, flow meters are required at the following locations:

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- The outlet(s) from the High Lift Pumping Station (for delivery of treated water into supply) at the WTP
- Inlet and outlet to BPT
- The BPS
- The FCV
- Inlet to the TPR
- All future connections points from the supply main when they are ultimately brought into service

2505. With the above metering, it is possible to continually monitor for leakages or bursts on the pipeline. In the instance of an imbalance of 'flow in' versus 'flow out', an alarm is raised to alert the operators (located at the WTP and repeated to the National Operations Management Centre) who can take appropriate action to shut down the pumps and isolate the main as necessary using the remotely controlled valves along the pipeline.

2506. Pressure monitoring would be provided at the following:

- Pump suctions and delivery
- Up and downstream of all control valves at the FCV site and potential future connection point valves
- Either side of each Line Valve

2507. In regard to the risk of a burst main, sudden drops in pressures would alert operators in the WTP control room and repeated to National Operations Management Centre via the System Control and Data Acquisition system, who would then take action to shut down the pumps and pipeline and dispatch a call out for investigation.

2508. The steel pipeline would be protected against corrosion by means of a remotely monitored impressed current Cathodic Protection system. This would alert the operators via the System Control and Data Acquisition system of changes in system current that indicates possible damage to the pipeline coatings. This system would alert the operator to such a defect long before it became a cause for a leak.

2509. The WTP would be permanently staffed and would control the operation of the whole of the Proposed Project. Line Valves can be remotely operated from the WTP control room. Therefore, sections of pipeline can be isolated as soon as any alarm is triggered indicating a burst or leaking pipe. In addition, in the event of a major pressure change or flow/levels being exceeded then a shut-down would automatically be initiated.

2510. The assessment reported in the EIAR, Chapter 20 - Risk of Major Accidents and/or Disasters took account of the proposed design and monitoring of the pipeline and infrastructure sites during operation and concluded that the risk is considered to be as low as reasonably practicable. There would therefore be no significant risk of a major accident and/or disaster from a failure of the Proposed Project infrastructure.

24. Cumulative Effects and Interactions

24.1 Overview

2511. Twelve of the 114 submissions raised the issue of cumulative effects and interactions in relation to the Proposed Project.
2512. An assessment of cumulative effects with other projects was carried out and reported in the EIAR submitted as part of the SID Planning Application in Chapter 21 – Cumulative Effects and Interactions. The assessment complied with the relevant legislation, standards and guidance as set out in that chapter and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
2513. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding cumulative effects and interactions. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 2 – Overarching Matters;
 - Chapter 6 – Proposed Project Description;
 - Chapter 7 – Construction and Commissioning;
 - Chapter 10 – Biodiversity;
 - Chapter 11 – Water (Hydrological Modelling and Water Levels);
 - Chapter 12 – Water (General); and
 - Chapter 25 – Natura Impact Statement.
2514. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
2515. There were only a small number of responses specific to the assessment of cumulative effects. These related to the adequacy of the assessment, the omission of other projects from the assessment, including the Shannon Fish Passage Study, and the interaction between the Proposed Project and ESB's operations in Parteen Basin. As set out in the responses below, the assessment has been undertaken in line with best practice guidance and has been clear on the process for including other projects in the assessment.
2516. Cumulative issues have also been raised in relation to the hydrological modelling and in-combination assessment in the NIS. These submissions have been addressed in Chapter 10 – Biodiversity, Chapter 11 – Water (Hydrological Modelling and Water Levels), Chapter 12 – Water (General), and Chapter 25 – Natura Impact Statement of this Report.
2517. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding cumulative effects and interactions;
 - Specific matters raised in general observer submissions regarding cumulative effects and interactions; and
 - Specific matters raised by Prescribed Bodies regarding cumulative effects and interactions.

24.2 Response to General Issues Raised

24.2.1 Adequacy of the Cumulative Impact Assessment

2518. The following submissions raised concern about the cumulative impact assessment as not all other projects have been assessed:

Unique ID	Name of Individual or Organisation
WSP_SUB_16	Joanne Skehan
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_62	Mountshannon Community Council

24.2.1.1 Applicant's Response

2519. The Applicant does not agree that the cumulative assessment is inadequate. The assessment methodology is set out in Section 21.2 of EIAR Chapter 21 (Cumulative Effects and Interactions). The cumulative impact assessment considers and assesses the potential for cumulative effects arising from the Proposed Project in association with 'other projects' during the Construction & Operational Phases of the Proposed Project. The methodology is based on a staged approach to identify other development that could interact with the Proposed Project, in line with best practice guidance. The categories of other projects included in the cumulative impact assessment have been taken to include:

- Any approved and still implementable planning applications backdated approximately 10 years from the time the planning search was undertaken (as it was assumed applications dated further in the past than this would have either been completed or are no longer likely to proceed) with the potential for cumulative impacts with the Proposed Project;
- Any projects which, at the time of assessment, were yet to be approved, but for which a decision and potentially approval is reasonably foreseeable over the likely consenting and construction period anticipated for the Proposed Project; and
- Any other major developments that are currently subject to the pre-planning application and preliminary design phases for which publicly available plans and particulars exist, with the potential for cumulative impact with the Proposed Project.

2520. The assessment has been undertaken with regard to best practice guidance, including Advice Note Seventeen: Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment, from the UK Planning Inspectorate. In line with this guidance, the assessment focused on major projects in order to provide a 'proportionate' assessment that is 'not longer than is necessary', and included application of a threshold including only development proposals which are classified as EIA development. Other factors that have been considered include:

- The Zone of Influence and study areas of individual topic assessments;
- Whether there is a likelihood of temporal overlap (including overlap for construction and operational phases) between the Proposed Project and the other projects; and
- Whether the scale and nature of the other project is likely to result in cumulative impacts with the Proposed Project, taking account of the aspects of the environment for which the Zone of Influence /study area is relevant.

2521. The EIA Regulations include the consideration of other existing or approved developments, or both, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources. This has been addressed within the environmental topic chapters (EIAR Chapters 6 to 20), where existing projects contribute to the baseline environment. Each chapter considers the incremental impact of the Proposed Project within the context

of the carrying capacity of the environment and projects that have gone before. On this basis, existing development is not considered in the cumulative impact assessment, as they form the environmental baseline against which the Proposed Project is assessed.

24.3 Response to Specific Issues Raised in General Observer Submissions

24.3.1 Potential Cumulative Impact with the Shannon Fish Passage Study

2522. The following general observer submissions raised specific issues relating to the potential cumulative impact of the Proposed Project and the Shannon Fish Passage Study:

Unique ID	Name of Individual or Organisation
WSP_SUB_11	Councillor Seán Hartigan
WSP_SUB_35	Castleconnell River Association
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_50	James Crowley
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

2523. The general observer submission from Councillor Seán Hartigan stated that the recommended increases in flows for fish passage are significant so the projects must be considered in combination.

2524. The general observer submission from Castleconnell River Association stated that it is necessary that this plan be designed, accepted, and constructed before the Proposed Project may apply for planning permission, as the two projects are interlinked, and occupy the same physical space and resource, and continues that, at present, no account is taken of this necessity.

2525. The general observer submission from Garrett Reil and Cliona Geary stated that the abstraction directly competes with any future increase in flows needed for fish passage restoration, and despite this, the Applicant and the ESB are presenting the Fish Passage Project and the Proposed Project as separate, unrelated initiatives.

2526. The general observer submission from James Crowley stated that a significant gap in the application relates to the Shannon Fish Passage Project and conflicting demand for water between the two projects.

2527. The prescribed body submission from Limerick County Council raised concerns that there is no analysis of cumulative or project-on-project impacts, including the risk that the Proposed Project could delay or obstruct the fish passage works. The submission further stated that there was a serious omission that the Proposed Project does not consider the Lower Shannon Fish Passage Project, as they draw from the same source and therefore must be assessed together.

2528. The prescribed body submission from Tipperary County Council stated that, the current application does not appear to have taken the fish passage measure, under River Basin Management Planning process, into account, and as the Environmental Flow Study Programme recommendations have yet to be advanced, these cannot at this point be provisioned for.

24.3.1.1 Applicant's Response

2529. The response in Section 24.2.1 of this report explains the type of development that is considered as 'other projects' in the cumulative impact assessment. The Shannon Fish Passage Study relates to a roadmap of actions to improve fish migration in the Lower River Shannon and the Hydroelectric scheme located around Parteen Basin and Ardnacrusha. It includes the following components:

- New fish pass at Parteen Weir;
- Environmental (Eflow) study programme;
- Tailrace barrier feasibility study;
- Downstream fish pass feasibility study;
- New fish pass at Ardnacrusha Power Station feasibility study; and
- Lower River Shannon Management Plan.

2530. None of the above elements have been adopted, have planning consent or are in the planning system awaiting approval. These future projects and plans can be considered as reasonably foreseeable, however they are still at the study/concept/feasibility stage and as such there are no publicly available plans, design information or environmental assessment information. On this basis, the Shannon Fish Passage Study does not meet the criteria for inclusion in the cumulative impact assessment. It is not feasible to carry out a cumulative assessment of these potential future developments without information first being determined and made available. At the point the above studies become defined projects, it is assumed that any development associated with these projects will require planning permission. Depending on the timing, the environmental assessment of these future projects will need to consider the Proposed Project as part of the baseline, or as another development to be assessed in their cumulative impact assessments.

2531. Although not considered in the cumulative impact assessment, future changes that could be implemented as part of the Shannon Fish Passage Study, regarding the eflow regime have been considered based on the publicly available study by CDM Smith¹¹. This has been addressed in the response in Section 11.2.6 of Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

24.3.2 Cumulative Impact Assessment of Other Developments in the Shannon Area

2532. The following submission raised concern about the lack of a thorough assessment of cumulative impacts of other developments in the Shannon area:

Unique ID	Name of Individual or Organisation
WSP_SUB_46	Futureproof Clare Environmental CLG

24.3.2.1 Applicant's Response

2533. The statement that there is a lack of thorough assessment of cumulative impacts of other developments in the Shannon area is not accurate. The submission highlights that the River Shannon, particularly the Lower River Shannon, is already heavily industrialised and points to a number of existing and proposed developments in the Shannon area. With regard to existing industries, as explained in the response in Section 24.2.1 of this report, these form part of the environmental baseline against which the Proposed

¹¹ CDM Smith (2025). Roadmap for the Lower River Shannon Report 2021. Provision of Expert Advisory Services Regarding Fish Migration in the Lower River Shannon Catchment. Prepared by CDM Smith for the Department of Housing, Local Government and Heritage.

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Project is assessed, and are therefore not considered in the cumulative impact assessment in line with best practice guidance. With regard to the proposed liquefied natural gas terminals development in the Shannon Estuary, these are outside of the zone of influence of the Proposed Project and therefore outside of the scope of the cumulative impacts assessment, as there is no possibility for cumulative effects. As explained in EIAR Appendix A9.1 (Abstraction Assessment), the ‘downstream limit’ of the study area is the confluence of the Shannon (Lower)_060 (Limerick Dock) and the Ardnacrusha Tailrace (North Ballycannon_010) at Limerick Dock. The diurnal tidal influence on water levels and flows at this point mean that any change in the Tailrace flow would be imperceptible in Limerick Dock at the confluence.

2534. Submissions relating to the extent of hydraulic influence of the Proposed Project on the River Shannon are considered in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

24.3.3 Potential Cumulative Impact with Cushaling Wind Farm

2535. The following submission raised concern about the Cushaling Wind Farm’s location within the wayleave of the Proposed Project.

Unique ID	Name of Individual or Organisation
WSP_SUB_81	Brian Farrell

24.3.3.1 Applicant’s Response

2536. A planning application (Ref – 22494) at the site of Cushaling Wind Farm was included in the short list of the cumulative assessment for the Proposed Project (EIAR Appendix A21.2 - Stage 4 Assessments) in Tables 21.2.4, 21.2.8 and 21.2.12. As part of the cumulative impact assessment, it was concluded that there would be no significant cumulative effect as a result of the Proposed Project and the ‘other project’ at Cushaling Wind Farm.

2537. This submission is also addressed in Section 21.3.2 of this Report.

24.4 Response to Specific Issues Raised by Prescribed Bodies

24.4.1 Status of Other Projects

2538. The prescribed body submission from Offaly County Council raised specific issues relating to the status of other projects listed in the EIAR:

Unique ID	Name of Individual or Organisation
WSP_SUB_113	Offaly County Council

2539. This prescribed body submission stated that the Planning Authority has updated the planning status of more recent planning applications listed within the submitted application and which have been decided since the application details were undertaken by the applicant, as shown above. The submission continued that the provision of a map which clearly denotes all referenced planning applications within the vicinity of the study area would provide for greater clarity.

24.4.1.1 Applicant’s Response

2540. To prevent the process of deciding which other projects should be considered in the cumulative impact assessment from lasting indefinitely, a final cut-off date needs to be established. This date represents the point in time where the gathering of data for assessment stops and the EIAR is pulled together and written prior to submission. The exercise to identify relevant other projects within the cumulative impact

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assessment study area for the Proposed Project was completed in August 2025, with the SID application lodged in December 2025. This cut-off date is clearly stated in Section 21.2.2.1.1 of EIAR Chapter 21 – Cumulative Effects and Interactions, as per the UK Planning Inspectorate Advice Note Seventeen which provides advice on cumulative effects assessment for infrastructure projects.

2541. EIAR Figure 21.1 shows the other projects which were progressed to the assessment stage of the cumulative impact assessment. Applications within Offaly County Council can be seen on sheets 19 to 46 of Figure 21.1. The planning status (at the time of the cut-off date) of the other projects is included in EIAR Appendix A21.1 (Record of Stages 1 and 2 of Cumulative Effects Assessment).

24.4.2 Cumulative Impacts with ESB at Parteen Basin

2542. The Prescribed Body submission from Tipperary County Council raised specific issues relating to cumulative impacts arising from ESB's operations at Parteen Basin:

Unique ID	Name of Individual or Organisation
WSP_SUB_114	Tipperary County Council

2543. The prescribed body submission stated that the relationship between the Proposed Project and the ESB abstraction and impoundment licensing process for the Parteen Basin are not adequately addressed in the EIAR. The submission continued that the interdependency of these consents, including cumulative environmental effects and the scope of "the whole project" for EIA purposes, is not adequately addressed in the EIAR.

24.4.2.1 Applicant's Response

2544. The Applicant can confirm that the assessment for the 'whole' of the Proposed Project for which consent is being sought has been included within the SID Planning Application.
2545. Further information on the Abstraction Licence application is provided in the response in Chapter 2 – Overarching Matters of this report.
2546. The EIAR assessed the likely significant effects of the Proposed Project. The relationship between the Proposed Project and ESB's operations in Parteen Basin is explained in Section 4.15 of EIAR Chapter 4 (Proposed Description). In summary, ESB will continue to maintain water levels as it does today, within its Normal Operating Band and therefore, ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the Old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference.
2547. EIAR chapter 21 (Cumulative Effects and Interactions) and the NIS explain how the existing Ardnacrusha generating station has been considered in the assessment. The station is included in the environmental baseline and therefore has been considered in the assessment of the Proposed Project,

particularly the biodiversity assessment (EIAR Chapter 8), water assessment (EIAR Chapter 9) and NIS. Given the interaction with the Proposed Project, and the environmental importance of the Lower River Shannon SAC, Ardnacrusha Generating Station has also been considered within the cumulative effects assessment and in-combination assessment in the NIS. However, it should be noted that the proposed change in the operational regime of Ardnacrusha will maintain the hydrological status quo, and therefore the cumulative effect with Ardnacrusha Generating Station would not differ to the effects assessed for the Proposed Project reported in in Chapter 9 (Water) and Chapter 8 (Biodiversity), or the assessment of the Proposed Project alone in Section 7 of the NIS.

25. Natura Impact Statement

25.1 Overview

2548. Twenty-nine of the 114 submissions raised issues relating to the NIS produced for the Proposed Project.
2549. A NIS and Appropriate Assessment Screening Report were submitted as part of the SID Planning Application. The NIS and Appropriate Assessment Screening Report complied with the relevant legislation, standards and guidance as set out in those documents and was prepared by a team of competent experts as set out in within the NIS.
2550. This Report and its supporting appendix comprise the response of the Applicant to the issues raised regarding the NIS. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 2 – Overarching Matters;
 - Chapter 6 – Proposed Project Description;
 - Chapter 7 – Construction and Commissioning;
 - Chapter 10 – Biodiversity;
 - Chapter 11 – Water (Hydrological Modelling and Water Levels);
 - Chapter 12 – Water (General); and
 - Chapter 26 – Water Status Impact Assessment Report (Water Framework Directive).
2551. Cross references to these other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
2552. A large number of submissions are in relation to the impact of the Proposed Project on the Lower River Shannon SAC and other European Sites with a hydrological connection to the Proposed Project abstraction, which have been robustly assessed in the NIS. The NIS concluded that the Proposed Project would not, individually or in-combination with other plans or projects, adversely affect the integrity of any European sites in view of their conservation objectives, and there is no reasonable scientific doubt as to that conclusion.
2553. This Chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding the NIS;
 - Specific matters raised in general observer submissions regarding the NIS; and
 - Specific matters raised by Prescribed Bodies regarding the NIS.
2554. Within these sections there is some overlap and inter-relationship between the matters raised, and where relevant, cross references have been included to link any General and Specific Matter responses.
2555. Many of the submissions that raise concerns over the impact on the Lower River Shannon assert that the assessment has not adequately addressed the likelihood that the statutory minimum compensation flow will change in the future. The assessment does not assume that the historic origin of the 10 m³/s statutory minimum compensation flow is determinative for Habitats Directive compliance. Instead, the assessment is based on the current statutory flow regime, which is legally binding and forms part of the

existing hydrological baseline for the affected water bodies. ESB maintains this minimum compensation flow under its statutory obligations, and the Proposed Project will not alter, constrain or influence these requirements.

2556. Under the Habitats Directive, a proposed plan or project shall not be authorised where it would adversely affect, or risk adversely affecting, the integrity of a site, including by undermining the conservation objectives established to secure the attainment or maintenance of the favourable conservation status of the relevant qualifying interest.
2557. The hydrological modelling tests the system under varying scenarios, including normal, flood and drought conditions – the latter two being when ecological sensitivity is most prevalent, potentially.
2558. The NIS assesses, on the basis of the same modelling outputs, whether the proposed abstraction would impede the attainment of the European site's (Lower River Shannon Special Area of Conservation (SAC)) conservation objectives, and demonstrates that the abstraction will not prevent the achievement of those objectives necessary to secure the recovery and maintenance of the favourable conservation status of the relevant qualifying interests.
2559. Any future baseline regime would be decided at a programmatic level, through the River Basin Management Plan (RBMP), national policy or a regulatory process, and is independent of the Proposed Project.
2560. The overall conclusion of all the assessments is that the abstraction does not limit or prejudice the State's ability to revise compensation flows in the future to achieve a more naturalised flow regime, if this were required.

25.2 Response to General Issues Raised

25.2.1 Compliance with the Habitats Directive

2561. The following submissions raised concern about the Proposed Project's compliance with the requirements of the Habitats Directive (Council Directive 92/43/EEC):

Unique ID	Name of Individual or Organisation
WSP_SUB_02	Fight the Shannon Pipeline
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_110	Clare County Council

25.2.1.1 Applicant's Response

2562. The submissions raised concerns about the Proposed Project's compliance with the requirements of the Habitats Directive (Council Directive 92/43/EEC).
2563. In response, it is noted that the Applicant has prepared a Natura Impact Statement (NIS) in accordance with the provisions of Part XAB of the Planning and Development Act, 2000 (as amended), to support the competent authority in undertaking an Appropriate Assessment (AA) of the Proposed Project. The NIS was informed by the best available scientific knowledge and data and included a comprehensive

and robust scientific examination of the potential implications of the Proposed Project for European sites in view of their conservation objectives, in accordance with Article 6(3) of the Habitats Directive.

2564. The assessment considered the potential for ex-situ effects, including impacts arising via hydrologically/hydrogeologically connected pathways, as well as impacts on species and supporting habitats located outside designated European sites, where such habitats are functionally linked to the conservation objectives of European sites. It further assessed the potential for in-combination effects with other plans and projects, having regard to the conservation objectives and ecological requirements of relevant SACs and SPAs.
2565. The NIS applied the precautionary principle throughout and evaluated the Proposed Project in light of clearly defined conservation objectives for each European site. Where potential pathways for impact were identified, mitigation measures were incorporated into the design, construction, and operation of the Proposed Project to avoid or reduce adverse effects on the integrity of European sites. The assessment concluded beyond reasonable scientific doubt that, with the implementation of these measures, no adverse effects on the integrity of any European site will arise.
2566. Accordingly, the competent authority is provided with sufficient information to undertake an AA and to reach a reasoned conclusion, as required under Article 6(3) of the Habitats Directive. The findings of the NIS and EIAR demonstrate that the Proposed Project complies fully with the requirements of the Habitats Directive and the Birds and Natural Habitats Regulations, and that no derogation under Article 6(4) is required.

25.2.2 Compliance with the Birds Directive

2567. The following submissions raised concern about the Proposed Project's compliance with the requirements of the Birds Directive (Directive 2009/147/EC):

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_110	Clare County Council

25.2.2.1 Applicant's Response

2568. An AA has been undertaken for the Proposed Project in accordance with the requirements of Article 6(3) of the Habitats Directive (Directive 92/43/EEC), as transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). While the Birds Directive (Directive 2009/147/EC) specifically addresses the protection of wild birds and their habitats, its provisions are implemented in tandem with the Habitats Directive through the Natura 2000 network, which includes SPAs designated under the Birds Directive.
2569. The AA process has been carried out to assess the potential for the Proposed Project, either individually or in-combination with other plans or projects, to have significant effects on any European site, including SPAs designated for bird species and their habitats. The assessment has followed the established staged approach, including Screening for AA and a NIS.
2570. The findings of the NIS confirm that the Proposed Project will not adversely affect the integrity of any European site, including SPAs, in view of their conservation objectives. This conclusion is based on detailed ecological surveys, evaluation of potential impact pathways (such as disturbance, habitat loss, and hydrological effects), and the incorporation of mitigation measures where necessary.

2571. The NIS carried out for the Proposed Project demonstrates full compliance with these legislative requirements. The assessment explicitly considered potential effects on bird species and habitats protected under the Birds Directive, ensuring that the ecological integrity and conservation objectives of relevant SPAs are maintained.

25.3 Response to Specific Issues Raised in General Observer Submissions

25.3.1 Adequacy of the Findings of the Appropriate Assessment

2572. The following general observer submissions raised a specific issue relating to the findings of the AA:

Unique ID	Name of Individual or Organisation
WSP_SUB_10	Christopher Campion
WSP_SUB_16	Joanne Skehan
WSP_SUB_17	Joe Mayo
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_36	Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_39	Derg Open Water Swim School and the swim group "Lively Wimmin Swimmin"
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_55	Laura Kavanagh
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_63	Port Omna Beo
WSP_SUB_65	Samuel Norris
WSP_SUB_69	The Lough Derg Anglers Association

2573. The general observer submission from Christopher Campion stated that the Proposed Project has not demonstrated beyond any doubt that taking water would not severely affect pre-existing SACs and Natura 2000 sites and the ecology of Lough Derg and Shannon watercourse.

2574. The general observer submission from Joanne Skehan stated that there are particular concerns regarding whether the AA removes all reasonable scientific doubt.

2575. The general observer submission from Joe Mayo stated that under Article 6(3), adverse effects must be excluded beyond reasonable scientific doubt, and that hydrological compliance alone does not automatically satisfy the integrity test. The submission continued that compliance with a physical water-level metric does not, by itself, prove that protected habitats and species dependent on flow and water quality will not be affected. The submission also stated that the documentation does not clearly demonstrate that the mitigation measures remove deterioration risk beyond reasonable scientific doubt.

2576. The general observer submission from the River Shannon Environmental Protection Alliance Company Ltd stated that their independent review of the NIS concludes that the assessment does not exclude adverse effects on site integrity beyond reasonable scientific doubt, particularly during low-flow conditions.

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2577. The general observer submissions from Carol-Anne Murphy and Mountshannon Community Council stated that the Proposed Project will cause long-term and permanent habitat degradation thus constituting adverse effect on integrity. The submission continues that, given climate uncertainty and the scale of abstraction proposed, reasonable scientific doubt remains.
2578. The general observer submission from Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh stated that the Proposed Project has not met the Habitats Directive Integrity test for Natura 2000 sites.
2579. The general observer submission from Councillor Séamie Morris stated that there has been a failure to demonstrate no adverse effect on Natura 2000 site integrity.
2580. The general observer submission from Derg Open Water Swim School and the swim group “Lively Wimmin Swimmin” stated that, given the scale of abstraction proposed and resulting cumulative nutrient pressures, reasonable scientific doubt under Article 6(3) remains.
2581. The general observer submission from Friends of the Irish Environment stated that there are structural deficiencies in the NIS and EIAR, which, taken together, prevent the competent authority from lawfully concluding that the Proposed Project will not adversely affect site integrity.
2582. The general observer submission from Laura Kavanagh stated that the NIS does not provide sufficiently complete, precise and definitive findings to enable a conclusion, beyond reasonable scientific doubt, that the Proposed Project will not adversely affect the integrity of the European sites concerned.
2583. The general observer submission from the Lough Derg Mermaids stated that, under Article 6(3) of the Habitats Directive, any project likely to have a significant effect on a Natura 2000 site must be subject to an AA, and consent may only be granted where it can be concluded beyond reasonable scientific doubt that site integrity will not be adversely affected.
2584. The general observer submission from Port Omna Beo stated that the planning application does not convincingly demonstrate that abstraction will have no adverse effect on the Natura 2000 network and associated species.
2585. The general observer submission from Samuel Norris stated that Article 6(3) of the Habitats Directive requires certainty beyond reasonable scientific doubt that adverse effects upon site integrity will not arise and that because the baseline ecological conditions are already heavily modified, the assessment must consider impacts relative to existing ecological flow conditions rather than theoretical natural flows.
2586. The general observer submission from The Lough Derg Anglers Association stated that Article 6(3) of the Habitats Directive will be breached and continues that the Proposed Project presents a significant risk to spawning beds in the north-west lower lake, notably for bream, tench, roach, and pike, located merely 100 metres opposite the raw water intake pipes.

25.3.1.1 Applicant’s Response

2587. Under Article 6(3), the key obligation is to assess whether a plan or project, either alone or in combination with other plans or projects, would adversely affect the integrity of a European site in view of its conservation objectives. This assessment must be undertaken on the basis of the site’s current condition and the conservation objectives as defined by the competent authority.
2588. For sites designated as SACs, the conservation objectives reflect the ecological requirements of the qualifying habitats and species under the prevailing environmental conditions. Potential future changes in site management or ecological restoration measures do not form part of the assessment baseline

unless they have been formally adopted and are sufficiently defined. Accordingly, the AA is based on the best available scientific knowledge of the site's current ecological status and functioning.

2589. Article 6(4) of the Habitats Directive is only engaged where it cannot be ascertained, following AA, that a plan or project will not adversely affect the integrity of the site. In this case, the Proposed Project does not give rise to adverse effects on the integrity of the European site, either alone or in-combination with other plans or projects. The assessment demonstrates that the proposal does not undermine the conservation objectives of the site, nor does it result in deterioration of the structure or function of qualifying habitats or the conservation status of qualifying species.
2590. Because the proposal does not trigger the legal threshold of an adverse effect on site integrity under Article 6(3), the derogation provisions under Article 6(4) are not required. Article 6(4) is a mechanism of last resort, applicable only where adverse effects cannot be ruled out and must be justified by imperative reasons of overriding public interest, alongside the consideration of alternatives and the provision of compensatory measures. Where no adverse effect on site integrity is identified, the Directive does not require further justification under Article 6(4), and the assessment remains valid when based on the current ecological baseline.
2591. The assessment concludes that the Proposed Project will not give rise to adverse effects on the integrity of any European site. In particular, the Proposed Project does not introduce changes to hydromorphological conditions that would affect the structure or function of qualifying interest habitats, nor does it result in deterioration of the conservation status of qualifying interest species. Furthermore, the assertion of unassessed in-combination or cumulative effects is not supported, noting that such effects have been explicitly considered in the in-combination assessment presented in Section 8 of the NIS.

25.3.2 In-Combination Assessment with the Fish Passage Project

2592. The following general observer submissions raised specific issues relating to the consideration of the Fish Passage Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_11	Councillor Seán Hartigan
WSP_SUB_35	Castleconnell River Association
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_50	James Crowley

2593. The general observer submission from Castleconnell River Association stated that it is necessary that this plan be designed, accepted, and constructed before the Proposed Project may apply for planning permission, as the two projects are interlinked, and occupy the same physical space and resource, and continues that, at present, no account is taken of this necessity.
2594. The general observer submission from Garrett Reil and Cliona Geary stated that the AA does not model the combined demands on the river's flow from Ardnacrusha operations, the proposed pipeline abstraction, and the Fish Passage Project's requirements, and therefore is fundamentally incomplete.
2595. The general observer submission from James Crowley stated that there is a significant gap in the planning application as relates to the Shannon Fish Passage Project and that the Applicant has failed to deal with these competing demands.

25.3.2.1 Applicant's Response

2596. The Habitats Directive does not require an assessment against hypothetical or undefined future ecological conditions. Under Article 6(3), the key obligation is to assess whether a plan or project, either alone or in-combination with other plans or projects, would adversely affect the integrity of a European site in view of its conservation objectives. This assessment must be undertaken on the basis of the site's current condition and the conservation objectives as defined by the competent authority. An in-combination assessment was also undertaken in Section 8 of the NIS and should be considered alongside this assessment.
2597. For sites designated as SACs, the conservation objectives reflect the ecological requirements of the qualifying habitats and species under the prevailing environmental conditions. Potential future changes in site management or ecological restoration measures do not form part of the assessment baseline unless they have been formally adopted and are sufficiently defined. Accordingly, the AA is based on the best available scientific knowledge of the site's current ecological status and functioning.
2598. It is important to note that there is currently no agreed or formally defined set of ecological recovery objectives specific to the Lower River Shannon SAC. The establishment of such objectives is a matter for the relevant competent authorities and falls outside the remit of the Applicant or the Proposed Project. In the absence of a formally adopted framework, the assessment presented in the NIS has applied the best available scientific information and guidance, focusing on whether the Proposed Project would impede existing ecological functions or constrain the implementation of future measures aimed at improving fish passage, enhancing connectivity, or supporting the attainment of favourable conservation status for the qualifying interests within the SAC.
2599. The Shannon Connectivity Project, established under Ireland's River Basin Management Plan 2018–2021, has identified a coordinated programme of measures to address fish passage barriers at Ardnacrusha and Parteen. The CDM Smith Final Report (2021) and subsequent Roadmap of Actions (2022) set out key interventions, including new or improved fish passes, fish guidance systems for upstream and downstream migration, an Eflow study programme, and the preparation of a Lower Shannon Management Plan. A key component of these measures is the potential introduction of a variable Eflow regime at Parteen Weir to support fish migration.
2600. A sensitivity analysis to the proposed Eflow regime at Parteen Weir (CDM Smith 2021), in which the existing 10m³/s compensation and fish pass flow is replaced by a varying compensation flow with the inclusion of freshets (increased flows during a flood event or a release of additional water) to assist migratory fish up the Old River Shannon and into Parteen Basin, was undertaken. This found that similar water level differences were simulated during the droughts when the proposed abstractions were included in the Eflow scenario as were predicted for the case for a constant compensation flow. However, this assumes that freshets would not be released during flood (i.e. when spilling) or drought conditions. The basis of this drought period assumption is that if the Eflow is an attempt to mimic the natural flow regime then artificially releasing standard freshets over this period would be introducing a non-natural characteristic to the flow regime. In summary, the hydrological model found that the released flows to the Old River Shannon during periods of spill are virtually the same with or without the proposed Eflows regime in place. However, outside of flood and drought periods more water is released, together with flow variability, by the Eflows regime compared to the use of a uniform 10m³/s compensation flow. Full details of the hydrological model Eflows sensitivity analysis are provided in the EIAR Appendix A9.1 Annex A (Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report. Reinstatement of more natural water regimes would involve partly storing all flood inflows and partly spilling to the Lower River Shannon in a naturally variable freshet time profile. Having due regard to the River Shannon statutory compensation flow obligations, ESB's current practice is that late spring water level is kept near the top of the Normal Operating Band. At winter flood times, and when autumn recovery has started, greater sharing of inflows between storage and the

Old River Shannon reduces water available for use in hydropower. The Proposed Project would be abstracting up to a maximum of 300Mld or 3.47m³/s and while there may be technicalities for ESB in adjusting gates to provide flow variability, the Proposed Project would not impede a flow-sharing decision between hydropower and statutory compensation flow at appropriate times of the year and is not an impediment to any Parteen Weir gate adjustments to implement it.¹²

2601. The assessment demonstrates that the Proposed Project would not prevent or impede the delivery of an Eflow regime or associated fish passage improvements. While implementation of more naturalised flow regimes may require operational adjustments by others, including balancing hydropower generation and statutory compensation flows, the Proposed Project (with a maximum abstraction of 300Ml/d) would not restrict such operations. In particular, it would not constrain the operation of Parteen Weir gates, nor limit the ability to implement flow-sharing arrangements or future measures arising from the Shannon Connectivity Project.¹³
2602. In terms of the existing baseline, there is currently a 'Borland-McDonald' fish lock at Ardnacrusha station and a 'pool-traverse fish pass' at Parteen regulating weir. These both accommodate the upstream and downstream movement of fish. Fish migration may be hindered or delayed due to the existence of hydro stations and their associated fish passes because the species of fish monitored and structural design of the fishways have strong implications for both attraction and passage performance (e.g. Noonan *et al.* 2011, Brunt *et al.* 2012). The Proposed Project would not alter the existing scenario and there would be no additional barrier effects to fish in the Lower River Shannon SAC as a result of the Proposed Project. The Proposed Project would not change the generator discharge rate at the Ardnacrusha Generating Station; however, the duration of discharges would be reduced by approximately 2% on average. This would result in lower volumes of flow through the Ardnacrusha Generating Station through an unchanged generator flow rate operating for a shorter period of time, with marginally longer periods of no flow through Ardnacrusha. Smolts migrating downstream would likely marginally benefit from this scenario as smolts are attracted to higher flows. During reduced periods of hydropower generation, they would therefore be encouraged to migrate downstream over Parteen Weir, instead of through the turbines at Ardnacrusha. Furthermore, within operating guidelines which seek to increase late spring water levels to the upper limit of the Normal Operating Band, the Proposed Project would not impede the ability to adjust appropriate hydropower flows, with increased flow to the Old River Shannon during periods of smolt migration (April).
2603. Accordingly, it is concluded that the Proposed Project would not create additional barriers to fish migration, nor would it constrain the implementation of planned or potential future measures to improve connectivity, including Eflow releases and fish passage enhancements at Parteen Weir and Ardnacrusha.

25.3.3 Assessment of Hydrologically Connected European Sites

2604. The following general observer submission from Laura Kavanagh raised specific issues relating to the assessment of hydrologically connected European sites:

Unique ID	Name of Individual or Organisation
WSP_SUB_55	Laura Kavanagh

2605. This general observer submission stated that there is an incomplete identification and assessment of all hydrologically connected European sites, including omission of Barroughter Bog SAC. The NIS does not present quantitative hydraulic modelling demonstrating that abstraction during low-flow or drought

¹² This is referred to as a more naturalised flow regime in Chapter 11 Water (Hydrological Modelling and Water Levels).

¹³ This is referred to as a more naturalised flow regime in Chapter 11 Water (Hydrological Modelling and water Levels).

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conditions would not influence upstream river stage or groundwater gradients within the River Shannon Callows SAC.

2606. The submission also stated that the functionally relevant ornithological ZOI for hydrological effects must be defined by ecological dependence on water level and habitat availability, rather than by fixed disturbance buffers alone.

25.3.3.1 Applicant's Response

2607. It is important to clarify that the assessment of potential hydrological and hydrogeological impacts in the NIS is based on the source-pathway-receptor model, supported by the hydrological modelling (EIAR Appendix A9.1 – Annex A: Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

2608. There are no groundwater dependent terrestrial ecosystems (GWDTEs) identified around Parteen Basin, which is designated as a heavily modified water body (HMWB). The water storage and regulated nature of Parteen Basin is established in its designation as a HMWB. There is free fall of water over Meelick Weir at medium and low flows, and so changes to the water levels of Lough Derg have no influence on water levels upstream of Meelick Weir. This therefore sets the upper limit of physical influence for water levels in Lough Derg (i.e. it is not physically possible for water levels in Lough Derg, in low and medium flows, to influence water levels upstream of Meelick Weir). As detailed in EIAR Appendix A9.1 – Annex A (Hydrological Modelling Report), Lough Derg will continue to operate within the established Normal Operating Band. This Normal Operating Band is defined using the following water levels:

- Lough Derg top of Normal Operating Band level = 30.86mAOD (Above Ordnance Datum); and
- Lough Derg bottom of Normal Operating Band level = 30.40mAOD.

2609. The hydrological modelling demonstrate that there would be no significant effects on surface water levels within Parteen Basin and Lough Derg and as a result, no significant effect on flow regimes upstream or downstream of the Proposed Project. This finding is critical in the context of groundwater interactions.

2610. Impacts on GWDTEs are linked to:

- Changes in groundwater levels (quantitative status);
- Changes in flow regimes; and
- Changes in groundwater chemistry / pollutant inputs.

2611. In the context of the Proposed Project:

- The hydrological modelling demonstrates no significant effects on surface water levels or flow regimes;
- ESB will continue to regulate water levels within established Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin; and
- There will be no measurable alteration to the hydraulic boundary conditions that control groundwater levels in adjacent aquifers.

2612. As noted in the Planning Application, ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and

lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference.

2613. Section 4.1 of the NIS provides an overview of the receiving environment, including hydrology and water catchments. It notes that there are 639 watercourse crossings throughout the Proposed Project in the Lower Shannon, Barrow, Boyne, and Liffey catchments, as listed in EIAR Appendix A8.14 (Watercourse Crossing Data). In total, 390 crossings are in the Lower Shannon catchment, 133 are in the Barrow catchment, 33 are in the Boyne catchment, and 83 are in the Liffey catchment.
2614. In Section 6 of the NIS, European sites within the Zone of Influence (Zol) of the Proposed Project are identified (as previously noted, using the source-pathway-receptor approach). There are 78 European sites located within the potential Zol of the Proposed Project (i.e. European sites downstream of the Proposed Project, within the same groundwater body as the Proposed Project, or having another potential pathway for other types of effects) that were assessed in order to determine the actual Zol and whether or not a source-pathway-receptor exists (Table 6.1). Of the 78, 19 are considered to have a source-pathway-receptor to the Proposed Project (see Table 6.1 in the NIS). Examples of relevant pathways include, but are not limited to surface water, groundwater, disturbance (visual, noise, physical presence) and loss of habitat (including supporting habitat). Table 6.1 in the NIS outlines the qualifying interests and special conservation interest species for each European site and identifies where there are potential source-pathway-receptor links via which likely significant effects on the European sites' qualifying interests and special conservation interest species could potentially occur in light of their conservation objectives.
2615. The Barroughter Bog SAC (Site Code: 000231) is designated for active raised bogs [7110], degraded raised bogs still capable of natural regeneration [7120], and depressions on peat substrates of the Rhynchosporion [7150]. This SAC is located adjacent to Lough Derg, upstream and greater than 33km from the proposed abstraction.
2616. In relation to raised bog habitats (identified as GWDTE qualifying interest for a number of European sites along the margins of Lough Derg), it is important to recognise their ombrotrophic nature. These systems are primarily rain-fed and are largely independent of groundwater inputs, with hydrological functioning dominated by precipitation and internal peat storage. Groundwater interactions are typically limited to marginal zones and are weakly expressed. For an impact to occur on such systems, two conditions would need to be met:
- A sustained and measurable change in the local water balance (e.g. prolonged lowering of water levels); and
 - A viable hydrological pathway capable of transmitting that change to the bog system, particularly to the acrotelm, which is critical for ecological function.
2617. The modelling results demonstrate that neither condition arises. With no significant change in the surface water regime, there would be no alteration in hydraulic gradients and therefore no potential for groundwater level fluctuation. Consequently, there is no plausible pathway for impact on raised bog habitats.

2618. The results from the hydrological and hydrodynamic models demonstrate there would be no significant effects on water levels and the flow regime either upstream or downstream of the Proposed Project, therefore, the proposed abstraction is not predicted to have any effect on the qualifying interests of the Barroughter Bog SAC. Thus, this European site was not considered in the AA. This conclusion is also applicable to other European sites upstream and downstream of the proposed abstraction, including the River Shannon Callows SAC, in the context of likely significant effects attributable to the proposed abstraction.

2619. In relation to ‘the functionally relevant ornithological Zol for hydrological effects’ as noted in the submission, a detailed response in relation to this is provided in Section 25.4.21 of this report.

25.3.4 Adequacy of Mitigation Measures

2620. The following general observer submission from Laura Kavanagh raised specific issues relating to the adequacy of the proposed mitigation measures for the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_55	Laura Kavanagh

2621. This general observer submission stated that mitigation measures that do not demonstrably remove reasonable scientific doubt in respect of long-term operational abstraction during drought conditions.

25.3.4.1 Applicant’s Response

2622. The concern raised in the observer submission, that mitigation measures do not demonstrably remove reasonable scientific doubt regarding long-term operational abstraction during drought conditions, is not supported when the full body of assessment and modelling evidence is considered.

2623. Potential impacts associated with the proposed abstraction during the Operational Phase of the Proposed Project are assessed in Chapter 8 (Biodiversity) of the EIAR and in the NIS. The assessments considered a range of likely significant effects, including hydrological changes, the introduction or spread of invasive non-native species (INNS), disturbance or displacement of fauna, pollution risks, and potential mortality risks.

2624. To inform the assessment of potential hydrological and water quality impacts associated with the proposed abstraction, a hydrological model and a water quality model of Lough Derg and Parteen Basin were constructed to simulate the existing relationship between Lake levels, flows, and water quality. Model simulations used data obtained through monitoring work on Lough Derg and Parteen Basin. Full details of the models are provided in EIAR Appendix A9.1 Annex A (Hydrological Modelling Report) and EIAR Appendix A9.1 Annex B (Water Quality Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

2625. The hydrological model was used to assess the impact of the proposed abstraction on the water levels of Lough Derg and Parteen Basin and the forward flows released to the Old River Shannon. Two constant rates of abstraction were investigated: i) 154Mld – taken to be representative of normal operation demand by the year 2050, and ii) 300Mld – projected peak need/demand at year 2050. The model was run using data from the period 1 January 1972 to 31 October 2023, allowing the simulation of daily levels and daily flows across this 52-year period with and without the proposed abstraction in place.

2626. Throughout the 52 years analysed (1972 to 2023), the impacts to the Lough Derg and Parteen Basin Lake levels and forward flows to the Old River Shannon due to the modelled inclusion of the Proposed Project abstraction (as a constant flow of either 154Mld or 300Mld) are barely distinguishable from the

baseline case when viewed on level/flow duration curves (a standard hydrological method for comparing long-term data series). The Lake¹⁴ level regimes are only simulated to be affected by the proposed abstraction during extreme drought periods (1995 and 2018) and in the days immediately after the drought (up to a week) when inflow is needed to replenish any deficit in storage caused by the Proposed Project. For approximately 99% of the 52-year model simulation period, there are no perceptible impacts to simulated Lake levels as a result of the proposed abstraction.

2627. As noted in the Planning Application, ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference.
2628. During flood flows, when ESB can no longer keep the water level below the top of the Normal Operating Band, ESB can operate Ardnacrusha at full capacity as they have done in the past, and the Proposed Project abstraction flow would be provided from Lake storage resulting in a lowering of the water level compared with baseline flood conditions.
2629. In drought conditions, if the water flowing into Lough Derg reduces sufficiently, ESB will cease power generation, and the minimum statutory compensation and fish pass flows are prioritised over the use of water by Ardnacrusha. In these circumstances the abstraction by the Proposed Project would be provided from the Lake storage resulting in a lowering of the water level compared with the baseline drought conditions.
2630. The simulated forward flows¹⁵ to the Old River Shannon remain unchanged by the inclusion of the Proposed Project abstraction. The proportion of days (to the nearest whole percent) when the Old River Shannon is receiving the minimum required compensation and fish pass flows is simulated to be unchanged by the inclusion of the Proposed Project abstraction, as does the timing of the spill flows down Old River Shannon when Ardnacrusha is at full capacity.
2631. From the 52-year model simulation (1972 to 2023), the 2018 drought event shows the most notable impact to simulated Lake levels from the inclusion of the Proposed Project abstraction. These 2018 drought drawdown effects are further increased when accounting for future 2080s climate change impacts. However, the additional drawdown is still fitting within the range of ESB normal observed levels, still remaining within the Lough Derg/Parteen Basin normal operating levels, and would mean no change to the Old River Shannon minimum compensation flows.
2632. The hydrological modelling demonstrates that any abstraction-related changes to water levels are negligible and largely confined to extreme drought conditions, with no measurable influence on flood magnitude, timing, duration or frequency. Consequently, no likely significant effects on habitats or

¹⁴ Lough Derg and Parteen Basin together are referred to herein as the 'Lake'.

¹⁵ Simulated forward flows refers to flows downstream from Parteen Basin to the Old River Shannon.

species within Parteen Basin or the wider River Shannon catchment are predicted. These findings are consistent across a 52-year simulation period, including extreme drought events and future climate scenarios, providing a high degree of scientific certainty. As no likely significant effects are predicted, mitigation is not required in respect of hydrological impacts.

2633. For all other adverse effects identified in relation to the Proposed Project, whether alone or in combination with other plans or projects, mitigation measures are clearly defined and directly linked to the conservation objectives of the Lower River Shannon SAC. These measures ensure the protection of qualifying interest habitats and species and the maintenance of ecological integrity of the site (refer to Table 7.5 of the NIS for how these mitigation measures relate back to the qualifying interests and conservation objectives of the Lower River Shannon SAC).

25.3.5 Reliance of the Appropriate Assessment on Average Flow Metrics

2634. The following general observer submissions raised specific issues relating to the reliance of the AA on average flow metrics:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_55	Laura Kavanagh

2635. The general observer submission from the River Shannon Environmental Protection Alliance Company Ltd stated that the AA relies heavily on long-term average flow metrics (2% abstraction at Parteen) while failing to lawfully assess low-flow and drought conditions.
2636. The general observer submission from Councillor Séamie Morris stated that ecological impact under the Habitats Directive should be determined by low-flow and drought conditions, not long-term averages.
2637. The general observer submission from Friends of the Irish Environment stated that the assessment relies largely on average river flow conditions, and that ecological effects are most likely during low-flow periods rather than average conditions.
2638. The general observer submission from Laura Kavanagh stated that a material issue includes the reliance on average hydrological conditions without robust assessment of low-flow and drought scenarios, when ecological sensitivity is greatest. In circumstances where hydrological regime is integral to ecological status and to Protected Area objectives, the non-deterioration requirement must be demonstrably satisfied under reasonably foreseeable conditions.

25.3.5.1 Applicant's Response

2639. The Applicant agrees that is necessary and essential that a full assessment of the effect of the Proposed Project abstraction is undertaken and that is what has been done and reported in the EIAR and NIS. It is not correct that lows flow or drought conditions have not been assessed. The assessment undertaken, including the modelling, is reported in full in:
- Natura Impact Statement;
 - EIAR Chapter 8 – Biodiversity;
 - EIAR Chapter 9 – Water;

- Appendix A9.1 – Abstraction Assessment; and
- Annex A – Hydrological Modelling Report of Appendix A9.1 – Abstraction Assessment.

2640. As set out in Section 2.2.4 of the Hydrological Modelling Report (Annex A to Appendix A9.1 – Abstraction Assessment in the EIAR) the model considered three flow scenarios:

- Flood conditions;
- Normal conditions (non-flood and non-drought); and
- Drought conditions.

2641. In normal conditions ESB would maintain the minimum compensation flow down the Old River Shannon and the abstraction for the Proposed Project would be facilitated from management of the water being used in power generation. This is reported in Section 4.1.1 of the NIS: ‘ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference.’

2642. In flood conditions, the maximum volume of water capable of passing through Ardnacrusha would occur, as it does now and the flow down the Old River Shannon would not be altered. Consequently, the abstraction for the Proposed Project would be met from the lake storage. During flood flows, when the water level is no longer below the top of the Lough Derg Normal Operating Band, ESB can operate Ardnacrusha at full capacity and allow the excess flow down the Old River Shannon as they have done in the past, and the Proposed Project abstraction would be provided from a minor depletion in the simulated lake storage.

2643. In drought conditions, ESB would cease power generation and so the abstraction for the Proposed Project cannot be facilitated from within those flows. Consequently, the Proposed Project would result in an additional drawdown in water levels, in a drought, compared with the baseline conditions and this has been the focus of the assessment as it is this scenario where there would be a change arising from the Proposed Project which would have an effect on the environment. Section 6.1.1.2 of Appendix A9.1 (Abstraction Assessment) reports that from the 52-year model simulation period (1972 to 2023), it was decided to look closer at the specific 1995 and 2018 drought events that the Lough Derg and Parteen Basin system was proven to be the most sensitive to. The 2018 drought shows the biggest impact of the Proposed Project scenarios on the simulated lake levels, and the 1995 drought shows the second biggest impact. Other candidate droughts such as 1976, 1989, 2006, and 2010 were simulated to have negligible simulated lake level differences that were much less significant.

2644. For the 2018 drought event (most impactful), with the inclusion of the Proposed Project 154Mld abstraction scenario, the maximum difference in simulated lake level from the baseline at the lowest point of the drawdown is 65mm. For the Proposed Project 300Mld abstraction scenario, the maximum difference lake level difference at the lowest point of the drawdown is 134mm. Even during the worst modelled drought event (2018) from the 52-year model simulation period, the size and rate of simulated

lake level change fits within the range of ESB normal observed lake level fluctuations seen within the 52-year period of historical recorded levels. Furthermore, the simulated lake levels with the inclusion of the Proposed Project abstraction are still within the Lough Derg Normal Operating Band, and within the upper and lower water levels that ESB applies on Parteen Basin, without a change to the Old River Shannon compensation and fish pass flows, which would always be met.

2645. A precautionary ‘reasonable worst-case’ climate change scenario for the 2080s was also assessed. While this results in a marginally greater maximum drawdown (168mm at 300Mld), simulated lake levels continue to remain within the existing ecological baseline and Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB apply to Parteen Basin.
2646. The results from the hydrological and hydrodynamic models demonstrate there would be no significant effects on water levels and the flow regime either upstream or downstream of the Proposed Project, therefore, the proposed abstraction is not predicted to have any effect on the qualifying interest habitats or species of the Lower River Shannon SAC.
2647. In relation to the submission regarding a ‘non-deterioration requirement’ which ‘must be demonstrably satisfied under reasonably foreseeable conditions’ a detailed response to this is provided in Section 25.4.21 of this report.

25.3.6 Illegal Development under Natura 2000 Protections

2648. The following general observer submissions from the River Shannon Environmental Protection Alliance Company Ltd and Councillor Séamie Morris raised specific issues relating to illegal development under the Natura 2000 network protections:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris

2649. This general observer submissions stated that the entire stretch of the River Shannon concerned, is protected under the EU Natura 2000 network, which places strict legal obligations on the State to avoid deterioration of protected habitats and species. The submission continued that any development, such as lowering water levels below established minimums, risking permanent ecological harm, is illegal under these protections.

25.3.6.1 Applicant’s Response

2650. The results from the hydrological and hydrodynamic models demonstrate there would be no significant effects on water levels and the flow regime either upstream or downstream of the Proposed Project, therefore, the proposed abstraction is not predicted to have any effect on the qualifying interest habitats or species of the Lower River Shannon SAC. More detail on this is provided in Section 7.1 of the NIS as well as Section 25.3.5 of this report.

25.3.7 Impingement Mortality and Entrainment Characterisation Study

2651. The following general observer submission from Friends of the Irish Environment raised specific issues relating to the failure to provide an impingement mortality and entrainment characterisation study:

Unique ID	Name of Individual or Organisation
WSP_SUB_45	Friends of the Irish Environment

2652. This general observer submission stated that the failure to provide an “Impingement Mortality and Entrainment Characterisation Study” undermines the ability of the Appropriate Assessment to demonstrate, beyond reasonable scientific doubt, that the proposed abstraction will not adversely affect the integrity of the Lower River Shannon SAC.

25.3.7.1 Applicant’s Response

2653. As noted in Section 7.1.4.7 of the NIS, in order to minimise the risk of fish or otter becoming entrained or entrapped in the Intake Chamber, Passive Wedge-Wire Cylinder (PWWC) Intake Screens will be fitted to prevent debris and/or fish or otter being taken up into the raw water pumps (i.e. they cannot swim through the screen). Intake velocities through the screen slots would be limited to 0.15m/s by the 3mm slot size, the velocity at which juvenile fish that are known to occur in Parteen Basin can swim away without being trapped/held by the screen, taking into consideration average water temperatures (Department of Communications, Marine and Natural Resources 2005). The maximum flow of 300Mld equates to 3.47m³/s. The intake is designed to pass the maximum flow through two out of the three screens, which works out at 1.74m³/s each. The surface area of each screen is 37m², so dividing the maximum flow of 1.74m³/s through each screen by the surface area (37m²) gives a velocity of only 0.047m/s. This would be the velocity if the raw water pumps were operating continuously, which will not be the case, so the actual velocity would typically be lower than this.
2654. A bubble curtain will also be provided at the inlet to the chamber housing the PWWC Intake Screens, as an additional mitigation measure. The bubble curtain is a system that produces fine bubbles of air across the entrance to the intake structure, which act as a barrier (a curtain) further discouraging fish from entering the intake. The bubble curtain is intended to supplement the PWWC screens and limited intake velocity.
2655. Thus, as noted in Section 5.2.5 of the NIS, mortality or injury as a result of the raw water pumps during the Operational Phase of the Proposed Project is unlikely to have any effect on the populations of qualifying interest species of the Lower River Shannon SAC.

25.3.8 Degradation of Wild Salmon Habitat

2656. The following general observer submission from the Castleconnell River Association raised specific issues relating to wild salmon and protection of their habitat under the Habitats Directive (Council Directive 92/43/EEC):

Unique ID	Name of Individual or Organisation
WSP_SUB_35	Castleconnell River Association

2657. This general observer submission stated that the Castleconnell River Association maintains and monitors about 200 wild salmon spawning beds (redds) in the Old Shannon River near Castleconnell village. The submission continued that these are the only, and the last, wild salmon still spawning in the Shannon and that no degradation of habitat is permitted, under the Habitats Directive.

25.3.8.1 Applicant’s Response

2658. As outlined in Section 5.2.1.1.4 of the NIS, there would be no effect on the compensatory flows to the Old River Shannon as the proposed abstraction is provided from the Lake storage and changes to the hydropower regime. During drought conditions, there would be no changes to the statutory compensation flows to the Old River Shannon as the abstraction would take from the Lake storage. During flood conditions, when ESB can no longer keep the water level below the top of the Normal Operating Band, ESB can operate Ardnacrusha at full capacity as they have done in the past, and the

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Proposed Project abstraction flow would be provided from a minor depletion in the simulated Lake storage.

2659. The hydrological model demonstrates that forward flows to the Old River Shannon remain unchanged by the inclusion of the Proposed Project abstraction. The proportion of days (to the nearest whole percent) when the Old River Shannon is receiving just the compensation and fish pass flows remains the same as does the timing of the spills when Ardnacrusha is at full capacity.
2660. In flood conditions, when the flow rates provide too much water for generating, the following should be noted:
- There is no fixed capacity of Ardnacrusha Generating Station, but it is typically between 340m³/s to 400m³/s. The capacity varies from day to day based on the gross head involved; and
 - Generators pass more water at a lower gross head. Due to this, Parteen Basin tends to have quite low levels during floods which is contrary to what might be expected. For example, on 1 January 2016, during a flood event, Parteen Upper recorded a level of 30.01mAOD which is close to the Lower Lake Level that the ESB applies on Parteen Basin (30.86 to 30.00mAOD upper and lower lake levels for Parteen Basin). For context, this is a lower water level than experienced in the 1995 drought on Parteen Basin.
2661. To maintain Parteen Weir at this level, all flow passed through Parteen Basin is either directed over Parteen Weir and/or passed through Ardnacrusha Generating Station. The gates at Parteen Weir are operated by ESB.
2662. The hydrological model also demonstrated that with the abstraction in place the statutory 10m³/s compensation flow over Parteen Weir could have been provided over the entire 52-year period (1972 to 2023) without interruption while maintaining the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin. This includes the most significant drought on record in 2018.
2663. In summary, the hydrological model demonstrates that any abstraction-related changes to water levels are negligible and largely confined to extreme drought conditions, with no measurable influence on flood magnitude, timing, duration or frequency either upstream or downstream of the Proposed Project (which includes the Old River Shannon), therefore, the proposed abstraction is not predicted to have any effect on the qualifying interest habitats or species (including Atlantic salmon) of the Lower River Shannon SAC.

25.3.9 Description of Common Tern in the Natura Impact Statement

2664. The following general observer submission from Friends of the Irish Environment raised specific issues relating to the description of common tern provided in the NIS:

Unique ID	Name of Individual or Organisation
WSP_SUB_45	Friends of the Irish Environment

2665. This general observer submission stated that the NIS does not include an adequate description of Common Terns (*Sterna hirundo*) in Lough Derg (Shannon) SPA. The submission further stated that impacts on Common Tern are only discussed in the NIS in relation to potential indirect water quality impacts from the proposed pipeline, and there is no examination of indirect or cumulative effects in relation to water level regulation.

25.3.9.1 Applicant’s Response

2666. An examination of the collapse of the common tern colony on the Lough Derg (Shannon) SPA is not within the remit of the Proposed Project. It is noted in the Conservation Objectives document (NPWS 2024), that further survey work is required to establish if the 2024 zero count was an exception. The collapse of the population in this SPA runs contrary to the national population trend. This information is not intentionally omitted from the NIS, instead the results from the baseline breeding bird surveys undertaken between 2016 and 2024 are provided in Section 4.3.1.2. This section also references EIAR Appendix A8.21: Breeding Bird Survey Summary Report, which provides more detail regarding common tern records collected during baseline breeding bird surveys. The common tern is listed as a special conservation interest species of the Lough Derg (Shannon) SPA, in Section 7.12 of the NIS. The results from the hydrological and water quality models for the Proposed Project (EIAR Appendix A9.5: Baseline) demonstrate there would be no significant effect on water levels and the flow regime either upstream or downstream of the abstraction. Suitable nesting habitat for this species is predominantly concentrated to Goat Island. The Proposed Project is more than 4km away from and upstream of the Lough Derg (Shannon) SPA and poses no risk to the extent of nesting options for this species in the SPA.

25.3.10 Potential Implications of Inter-Basin Water Transfers

2667. The following general observer submission from Friends of the Irish Environment raised a specific issue relating to the potential implications of the proposed inter-basin water transfers and also raised concerns relating to the impacts of this on meeting the requirements under the Habitats Directive:

Unique ID	Name of Individual or Organisation
WSP_SUB_45	Friends of the Irish Environment

2668. This general observer submission stated that the inter-basin transfer implications give rise to Habitats Directive concerns. The submission continued that that the AA did not even consider the potential indirect effects on salmon migration. The submission further stated that, in these circumstances, the environmental assessment is incomplete in relation to a defining feature of the project, as the likely significant effects of the inter-basin transfer of water have been identified or assessed.

25.3.10.1 Applicant’s Response

2669. Redistribution of water between basins does not, in itself, constitute an adverse effect on the integrity of a European site. The Habitats Directive does not presume that increases in potable water supply or associated wastewater volumes automatically give rise to significant effects. The relevant test is whether any resulting pressures are of a nature, scale, or magnitude capable of affecting the structure and function of a European site, either alone or in-combination with other plans or projects.
2670. Wastewater discharges are already subject to separate statutory licensing regimes that require compliance with emission limit values, assessment of assimilative capacity, and full adherence to the Habitats Directive, including the requirement for AA where relevant. Increases in volumetric throughput within existing permitted limits do not equate to proportional increases in pollutant loading, nor do they inherently alter ecological status. Where upgrades or additional mitigation are required, these are secured through the competent authority’s AA for the discharge licence, not through the abstraction assessment.
2671. Hydrological modelling demonstrates that the proposed abstraction results in negligible changes to flows within the receiving catchment. The abstraction therefore does not introduce a new hydrological pressure of a magnitude capable of altering dilution capacity, flow-dependent ecological processes, or status boundaries. Any future wastewater-related pressures will continue to be regulated through the

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licensing and river basin management planning frameworks, both of which remain fully capable of ensuring compliance with the Habitats Directive.

2672. On this basis, the redistribution of water and the associated wastewater flows does not, in isolation, indicate a risk of adverse effects on site integrity.
2673. With regard to Atlantic salmon migration, as noted in Section 3.5.3 of the NIS, intake of water would occur at the bank of Parteen Basin, via Intake Chambers positioned below ground level and below the lower level of the water in Parteen Basin, as controlled by ESB, from which the raw water would flow to the wet well of the Pumping Station and would be pumped to the WTP. The proposed bankside configuration design requires a lesser extent of works on the bed of Parteen Basin during the Construction Phase in comparison to that which would have been required for an ‘in-basin’ design. There would be no additional barrier effects within the Lower River Shannon SAC as a result of the Proposed Project that would impact migration past the proposed intake.
2674. The Proposed Project would not change the generator discharge rate at the Ardnacrusha Generating Station, however, the duration of discharges would be reduced by approximately 2% on average. This is because the flow rates through the power station are fixed by the generator characteristics and so, to bring about the reduction in volume required to accommodate the abstraction being proposed, a reduction in time operating must occur. This would result in lower volumes of flow through the Ardnacrusha Generating Station through an unchanged generator flow rate operating for a shorter period of time, with marginally longer periods of no flow through Ardnacrusha. Smolts migrating downstream would likely marginally benefit from this scenario as smolts are attracted to higher flows. During reduced periods of hydropower generation, they would therefore be encouraged to migrate downstream over Parteen Weir, instead of through the turbines at Ardnacrusha. Furthermore, within operating guidelines which seek to increase late spring water levels to the upper limit of the Normal Operating Band, the Proposed Project would not impede the ability to adjust appropriate hydropower flows, with increased flow to the Old River Shannon during periods of smolt migration (April).

25.3.11 Demonstration of Ecological Safety

2675. The following general observer submissions from the River Shannon Environmental Protection Alliance Company Ltd and Councillor Séamie Morris raised a specific issue relating to the demonstration of ecological safety:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris

2676. These general observer submissions stated that the NIS has failed to demonstrate ecological safety during periods (in the context of low flow drought and zero generation scenarios) when the system is most vulnerable.

25.3.11.1 Applicant’s Response

2677. The Applicant does not accept the assertion that the NIS has failed to demonstrate ecological safety during periods of system vulnerability, including low flow, drought, and zero generation scenarios. As set out in Section 2.2.4 of the Hydrological Modelling Report (Annex A to Appendix A9.1 – Abstraction Assessment in the EIAR) the model considered three flow scenarios:

- Flood conditions;
- Normal conditions (non-flood and non-drought); and

- Drought conditions.

2678. This approach ensured that the River Shannon catchment, within the ZOI of the Proposed Project, was assessed across the full range of hydrological variability, including those periods when the receiving environment is most sensitive. The assessment undertaken, including the modelling, is reported in full in:

- Natura Impact Statement;
- EIAR Chapter 8 – Biodiversity;
- EIAR Chapter 9 – Water;
- Appendix A9.1 – Abstraction Assessment; and
- Annex A – Hydrological Modelling Report of Appendix A9.1

2679. The hydrological and hydrodynamic modelling demonstrates that the Proposed Project would not result in significant alterations to water levels or flow regimes, even during drought and zero generation scenarios. As such, there is no potential for adverse effects on the qualifying interest habitats or species of the Lower River Shannon SAC.

2680. Further detail in relation to the results of the modelling and the assessment of adverse effects are provided in Section 4.1.1 and Section 7.1 of the NIS, as well as Section 25.3.5 of this report. Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

25.3.12 Existing Flow Modification and Interaction with Ardnacrusha Hydroelectric Operation

2681. The following general observer submission from the Samuel Norris raised a specific issue relating cumulative assessment for the Lower Shannon SAC:

Unique ID	Name of Individual or Organisation
WSP_SUB_65	Samuel Norris

2682. This general observer submission stated that the Shannon flow regime at Parteen Basin is substantially regulated through diversion associated with hydroelectric generation infrastructure at Ardnacrusha, and this diversion significantly alters downstream hydrology. The submission continued that the SAC downstream already experiences reduced natural flow conditions, and requested that ACP examine whether cumulative assessment reflects actual operational ecological flows, and whether existing diversion arrangements have been considered within baseline environmental assumptions in light of evolving European environmental regulatory standards.

25.3.12.1 Applicant's Response

2683. A detailed assessment of the potential for adverse effects on the integrity of the Lower River Shannon SAC is provided in Section 7.1 of the NIS. This includes a comprehensive description of the ecological baseline, incorporating the existing hydrological regime, which is acknowledged to be substantially influenced by flow regulation and diversion associated with the Ardnacrusha Power Station. The assessment therefore reflects the current, managed flow conditions rather than an unaltered or historical natural regime.

2684. The evaluation includes an analysis of potential direct and indirect impacts arising from the Proposed Project, together with embedded design measures and mitigation to avoid or reduce adverse effects. Potential in-combination effects, including effects in-combination with the Ardnacrusha Power Station, are addressed in Section 8 of the NIS.

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2685. Under Article 6(3) of the Habitats Directive, the assessment is required to determine whether the Proposed Project, alone or in-combination with other plans or projects, would adversely affect the integrity of a European site in view of its conservation objectives. This assessment is appropriately undertaken with reference to the site's current condition and the conservation objectives as defined by the competent authority, including conditions shaped by long-established hydrological regulation.
2686. In this context, the NIS has considered whether the existing regulated flow regime gives rise to ecological impacts relevant to the conservation objectives of the Lower River Shannon SAC, and whether the Proposed Project could interact with these to result in adverse effects. The assessment concludes that the Proposed Project will not introduce changes to hydromorphological or flow conditions that would affect the structure or function of qualifying interest habitats, nor will it result in deterioration of the conservation status of qualifying interest species. The proposed abstraction does not alter the established flow regime in a manner that would affect key ecological parameters such as habitat extent, structure, function, or species movement.
2687. Accordingly, and taking into account the explicit consideration of in-combination effects presented in Section 8, the assertion that such effects have not been adequately assessed is not supported.

25.4 Response to Specific Issues Raised by Prescribed Bodies

25.4.1 Ecological Adequacy of the Existing Regime

2688. The prescribed body submission from raised a specific issue relating to the ecological adequacy of the existing regime:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce

2689. This prescribed body submission stated that the proposed abstraction is operationally dependant on the Ardnacrusha hydroelectricity scheme and relies on the continued regulation of flows between the hydropower and the compensation discharge. The submission continued that the key issue and lacuna here is that the ecological adequacy of the existing regime has never been assessed or demonstrated, and the Proposed Project relies upon the altered hydrological regime. The submission further stated that the cumulative assessment for the Proposed Project fails to assess the adequacy of the existing baseline, and as such must be considered a lacuna for the purposes of AA.

25.4.1.1 Applicant's Response

2690. The Habitats Directive does not require an assessment against hypothetical or undefined future ecological conditions. Under Article 6(3), the key obligation is to assess whether a plan or project, either alone or in-combination with other plans or projects, would adversely affect the integrity of a European site in view of its conservation objectives. This assessment must be undertaken on the basis of the site's current condition and the conservation objectives as defined by the competent authority. An in-combination assessment was also undertaken in Section 8 of the NIS and should be considered alongside this assessment.
2691. For sites designated as SACs, the conservation objectives reflect the ecological requirements of the qualifying habitats and species under the prevailing environmental conditions. Potential future changes in site management or ecological restoration measures do not form part of the assessment baseline unless they have been formally adopted and are sufficiently defined. Accordingly, the AA is based on the best available scientific knowledge of the site's current ecological status and functioning.

2692. Article 6(4) of the Habitats Directive is only engaged where it cannot be ascertained, following AA, that a plan or project will not adversely affect the integrity of the site. In this case, the proposed abstraction does not give rise to adverse effects on the integrity of the European site, either alone or in-combination with other plans or projects. The assessment demonstrates that the proposal does not undermine the conservation objectives of the site, nor does it result in deterioration of the structure or function of qualifying habitats or the conservation status of qualifying species.
2693. Because the proposal does not trigger the legal threshold of an adverse effect on site integrity under Article 6(3), the derogation provisions under Article 6(4) are not required. Article 6(4) is a mechanism of last resort, applicable only where adverse effects cannot be ruled out and must be justified by imperative reasons of overriding public interest, alongside the consideration of alternatives and the provision of compensatory measures. Where no adverse effect on site integrity is identified, the Directive does not require further justification under Article 6(4), and the assessment remains valid when based on the current ecological baseline.
2694. The assessment concludes that the Proposed Project will not give rise to adverse effects on the integrity of any European site. Specifically, the Proposed Project does not introduce changes to hydromorphological conditions that would affect the structure or function of qualifying interest habitats, nor does it result in deterioration of the conservation status of qualifying interest species. Furthermore, the assertion of unassessed in-combination or cumulative effects is not supported, noting that such effects have been explicitly considered in the in-combination assessment presented in Section 8 of the NIS.

25.4.2 Assessment of Potential Impacts on White-Clawed Crayfish

2695. The prescribed body submission from the NPWS raised a specific issue relating to the lack of an assessment of the potential impacts of the Proposed Project on white-clawed crayfish:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

2696. This prescribed body submission stated that potential impacts on white-clawed crayfish do not appear to have been assessed within the NIS.

25.4.2.1 Applicant's Response

2697. Mortality risk posed by construction work is not a defined attribute in the River Barrow and River Nore SAC Site-Specific Conservation Objectives document for white-clawed crayfish. However, it is noted in Section 7.4.3.1.4 of the NIS, that 'as the Proposed Project would involve in-stream construction works on watercourses linked to the River Barrow and River Nore SAC, there is an increased risk during the Construction Phase of aquatic species (e.g. otter, lamprey species and Atlantic salmon) being killed or injured from collisions with construction traffic/machinery or from construction materials accidentally falling into a water body. Aquatic species populations in the affected Figile River catchment may be linked to, and may support, the qualifying interest populations in the River Barrow and River Nore SAC. Therefore, an increased mortality risk to aquatic species such as otter, lamprey species and Atlantic salmon has the potential to affect the conservation objectives supporting the conservation condition of aquatic qualifying interest species in the River Barrow and River Nore SAC.' This includes white-clawed crayfish.
2698. As noted in Section 7.4.4.1.1 of the NIS, 'the mitigation measures to ensure that aquatic species are not killed during the Construction Phase as a result of construction works directly, or through water quality impacts, are as detailed in Section 7.1.4 and in the Construction Environmental Management Plan (CEMP) (see EIAR Appendix A5.1) and include that no machinery will operate in-stream. If

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watercourses have to be traversed during construction, these will be bridged prior to commencement of works.’

25.4.3 Compliance with Article 10 of the Habitats Directive

2699. The prescribed body submission from An Taisce raised a specific issue relating to compliance with Article 10 of the Habitats Directive:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce

2700. This prescribed body submission stated that it should be demonstrated that the project is in adherence to Article 10 of the Habitats Directive with regard to protection of stepping stones and ecological corridors including nature conservation sites (other than European sites), habitat areas and species’ locations. The submission continued that this is a necessity given that construction corridors could lead to temporary and / or permanent habitat fragmentation, and these may act as barriers to ecological connectivity at a landscape level which should be considered.

25.4.3.1 Applicant’s Response

2701. In accordance with Article 10 of the Habitats Directive, the ecological appraisal has considered the role of features of the wider landscape that may function as stepping stones and ecological corridors outside designated European sites. This includes non-designated habitats, habitat networks, and known or potential species locations that contribute to ecological connectivity at a landscape scale.

2702. The assessment recognises that construction activities have the potential to result in temporary habitat loss/habitat fragmentation during the Construction Phase. However, these impacts have been carefully evaluated and are considered in the context of the existing baseline environment, which is already influenced by surrounding land uses and linear infrastructure.

2703. Where potential effects on ecological connectivity have been identified, mitigation measures have been incorporated into the design and construction methodology. These include measures to minimise habitat loss, retain and protect key vegetated corridors where practicable, and implement best practice construction management measures to reduce disturbance. The Construction Working Width will be managed to avoid unnecessary widening or prolonged habitat severance, and works will be phased to limit spatial and temporal impacts on ecological movement.

2704. Importantly, for the most part, residual effects in relation to habitat loss/habitat fragmentation would be temporary in nature. Post-construction reinstatement and habitat restoration will further support the re-establishment of connectivity functions where temporary disturbance occurs.

2705. Overall, having regard to Article 10 of the Habitats Directive, the Proposed Project has been designed and will be implemented in a manner that maintains the integrity of ecological corridors and stepping-stone habitats insofar as practicable, and ensures that landscape-scale ecological connectivity is not significantly adversely affected.

25.4.4 Potential Impacts on Alkaline Fen Habitat

2706. The prescribed body submission from the NPWS raised specific issues relating to the potential impact of the Proposed Project on alkaline fen habitats:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

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2707. This prescribed body submission stated that the potential for hydrogeological impacts on the Alkaline fen habitat within Lisduff Fen SAC requires further information.

25.4.4.1 Applicant's Response

2708. As noted in Section 5.1.2.3.2.1 of the NIS, the Proposed Project is located approximately 490m east of Lisduff Fen SAC. Lisduff Fen SAC comprises a wet calcareous fen, areas of wet grassland, some birch (*Betula* sp.) and willow (*Salix* sp.), scrub, and some vegetation to the north of the SAC, more akin to that of a raised bog. On the western side, the fen merges into wet grassland which has been improved to varying degrees for pasture. A spring line is present between the fen and grassland to the west of the SAC. A fast-flowing stream which flows along the eastern boundary of the SAC, and the fen at the south end, are heavily encrusted with calcium carbonate or 'tufa' deposits (Site Synopsis, Lisduff Fen SAC). In relation to the tufa deposits, deposits in the stream coincide with areas of water agitation, i.e. changes in stream elevation, small rapids or waterfalls. No tufa was encountered within 200m of the proposed river crossing point. The stream forms a hydrological/hydrogeological boundary to the east of the SAC, and based on the water chemistry and site observations, the stream is fed by surface water runoff and groundwater baseflow.

2709. It is noted in Section 5.1.2.3.2 of the NIS, that given the Lisduff Fen SAC site location and its qualifying interests, the Proposed Project would not cause potential dewatering that could impact on the qualifying interest habitats (fen and petrifying spring) which are located on the opposite side of the (western boundary) SAC over 800m away. In summary, the only potential for hydrogeological impacts on the qualifying interests of the Lisduff Fen SAC arises from a potential indirect temporary pathway during the Construction Phase dewatering/discharges to the Rock (Birr)_020 area.

2710. Potential for significant adverse effects in relation to the conservation objectives for alkaline fen are considered in Table 7.8. It is noted that the Rock (Birr) Stream would be crossed by the Proposed Project approximately 1.1km directly from and upstream of Lisduff Fen SAC, and this is the only watercourse within the SAC. The fen habitat is not documented along the Rock River. The alkaline fen in this area is sustained by a topographical depression, where a spring supplies groundwater discharge from the west, supporting persistent saturation and base-rich conditions. Drier improved grassland and scrub habitats situated between the Rock River and the fen create hydrogeological constraints that limit the lateral extent of the fen system.

2711. The pipeline at the Rock (Birr) Stream crossing would be installed using open cut techniques and although there is a risk of temporary (ranging from one week up to one month in a worst-case scenario) changes to the hydrological regime during the Construction Phase, these temporary changes would not have a significant effect on active peat formation which occurs over a long period of time with the formation rate of about 1mm per year (Charman 2002), nor would they have a significant effect on the natural hydrological regime necessary to support the natural structure and functioning of alkaline fen habitat. There is no long-term or permanent risk to the functioning of the hydrological regime supporting alkaline fen habitat at Lisduff Fen SAC, thus there is no potential for adverse effects on the integrity of the site.

25.4.5 Effects on River Little Brosna Callows SPA

2712. The prescribed body submission from the NPWS raised specific issues relating to the potential impact of the Proposed Project on River Little Brosna Callows SPA:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

2713. This prescribed body submission stated that although the Proposed Project is unlikely to directly impact the River Little Brosna Callows SPA, it may still affect important surrounding habitats used by wintering bird species for feeding and roosting. It argues that the current assessment may underestimate impacts by not distinguishing between suitable and unsuitable habitats within the 20km buffer zone, potentially overlooking the true extent of habitat relied upon by species such as lapwing and golden plover. It also questions whether disturbance zones have been properly accounted for and highlights that affected habitats (e.g. agricultural grassland and cutover bog) are particularly important for these birds. Additionally, there is uncertainty around the duration of habitat disturbance and reinstatement (18 versus 24 months), indicating a need for reassessment and clarification of potential ex-situ impacts and timelines.

25.4.5.1 Applicant's Response

2714. Regarding potential ex situ impacts on the special conservation interest (SCI) species of the River Little Brosna Callows SPA, a precautionary buffer of up to 20km from the SPA was applied to capture lands that may be used by SCI species. This covers an area of over 1,500km², within which the Proposed Project would directly impact approximately 9km², or around 0.6% of the available suitable habitat. It should be noted, the 10km² of habitat referenced in the submission is incorrect, and the 9km² referenced in the NIS is inclusive of the 1km² of cutover bog.

2715. The majority of the habitat within the 9km² comprises improved agricultural grassland, with a smaller area of cutover bog. While these habitats may be used by SCI species, they represent a very small proportion of the extensive areas of similar and/or higher quality habitat available in the wider landscape. As such, the scale of impact is low/unlikely and not expected to materially affect the availability of supporting habitat.

2716. Potential disturbance during construction has also been considered. As described in Section 5.3 of the EIAR, for each geographic section of the pipeline construction set out in Table 5.4 of the EIAR the pipeline construction would be over a total period of three years (excluding testing and commissioning). However, not all land would be required for the whole three-year period and further sub-division of the sections or phases into smaller, more manageable lengths (works packages) would allow this to be achieved. For example, the Contractors would aim to complete a length of pipeline construction between two designated access points in a single year. As a result, the works would be planned to reduce the period of time that land is out of agricultural use so that each landowner would not be affected for a period of more than 18 to 24 months (excluding returning to the land during the commissioning phase of the works). Therefore, potential disturbance impacts would still be considered to be temporary, if the works were to take up to 24 months.

2717. With regard to the 300m disturbance buffer referenced in the submission, this was not applied as a fixed buffer in the NIS to account for the 9km² of habitat loss. Instead, disturbance was assessed on a precautionary basis, taking account of the temporary, linear and progressively mobile nature of the works. As such, disturbance effects would be short-term and limited to the vicinity of active works. It is also noted that the 20km study area represents a precautionary buffer, which exceeds the typical foraging range of SCI species (e.g. up to approximately 18.5km for black-headed gull). Given the small proportion of habitat affected within this already precautionary study area, and the availability of extensive alternative suitable habitat, the application of a precautionary disturbance buffer would not materially alter the conclusions of the assessment.

2718. Taking this into account, including the small proportion of habitat affected, the availability of alternative habitat, and the temporary nature of works, it is considered that the Proposed Project will not result in ex situ effects on the SCIs of the River Little Brosna Callows SPA. The conclusions of the NIS therefore remain unchanged.

25.4.6 Effects on Severe Drought Low Water Level Duration in Designated Sites

2719. The prescribed body submission from the NPWS raised specific issues relating to the effects of severe drought low water level duration in the Lower River Shannon SAC and Lough Derg North-East Shore SAC:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

2720. The prescribed body submission stated that drought and post drought water levels need more consideration in the assessment for the Lough Derg north-east shore SAC, which is particularly relevant for habitat types dependent on the water level regime in Lough Derg. The submission raises that the NIS does not cite the location of the data in Appendix 9.1, specifically in relation to p.367 para 1106 and para 1107. The submission states that further expert ecological assessment is required for the extended spring and summer drawdown and the shortening of winter high water events.

25.4.6.1 Applicant's Response

2721. The Lough Derg North-east Shore SAC (Site Code: 002241) is comprehensively assessed in Section 7.5 of the NIS. As clearly set out therein, this SAC is upstream of the proposed abstraction, and neither flow dynamics in the northern bays nor water residence times are influenced by the proposed abstraction. The only pathway for impact is via marginal changes to lake water levels resulting from abstraction at Parteen Basin, approximately 22km downstream. This pathway has been robustly examined through long-term hydrological modelling as set out in the Hydrological Modelling Report (Annex A to Appendix A9.1 – Abstraction Assessment in the EIAR).

2722. It is critical to emphasise that the hydrological regime of Lough Derg is not natural but highly regulated, primarily for hydropower generation by ESB, with secondary functions relating to navigation and flood attenuation. The lake has been managed within a defined 460mm Normal Operating Band since the late 1970s. Over this extended period, shoreline and littoral habitats within the SAC have demonstrably adapted to, and stabilised under, this controlled and inherently variable regime. As such, these habitats are resilient to fluctuations within the established Normal Operating Band on Lough Derg.

2723. In relation to drought and post-drought conditions, the submission's concerns are not supported by the available evidence. The modelling over a 52-year period (1972–2023) demonstrates that any discernible influence of the Proposed Project on lake levels is confined to extreme drought events and very short recovery periods (typically less than one week). Even during the most severe drought year (2018), simulated lake level variations remain fully within the historical range of observed fluctuations and within the established Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin. Notably, observed low water levels in 2018 occurred in spring and winter rather than during summer months, directly contradicting the assertion of extended summer drawdown impacts. Furthermore, the magnitude of any modelled changes during drought conditions is minor when compared to natural short-term variability. Wind-driven set-up and flow gradients across Lough Derg routinely generate water level differences averaging 110mm and exceeding 400mm during storm events. Against this background variability, the incremental changes attributable to abstraction are effectively imperceptible from an ecological perspective.

2724. During flood flows, when the ESB can no longer keep the water level below the top of the Normal Operating Band, the ESB can operate Ardnacrusha at full capacity as they have done in the past, and the Proposed Project abstraction flow would be provided from a minor depletion in the simulated Lake storage. The forward flows to the Old River Shannon remain unchanged by the inclusion of the Proposed Project abstraction. The proportion of days (to the nearest whole percent) when the Old River

Shannon is receiving just the compensation and fish pass flows remains the same as does the timing of the spills when Ardnacrusha is at full capacity.

2725. With regard to the specific reference to the location of data in Appendix 9.1 (as referenced in paragraphs 1106–1107 of the NIS), the data underpinning the assessment is presented in Section B.4 of Attachment B (Historical Model) of Annex A (Hydrological Modelling Report) within Appendix A9.1 (Abstraction Assessment) of the EIAR. The conclusions drawn in the NIS are directly supported by these datasets, and there is no evidential gap that would warrant further specialist ecological assessment.

2726. In summary, the hydrological assessment demonstrates that:

- There is no meaningful alteration to the established water level regime of Lough Derg for the overwhelming majority (~99%) of the modelled period
- Any changes during extreme drought conditions are minor, short-lived, and remain within the historical and operational range to which SAC habitats are already adapted
- The scale of variation is negligible relative to natural wind- and weather-driven fluctuations.

2727. Accordingly, there is no scientific basis to conclude that the Proposed Project would result in adverse effects on the integrity of the Lough Derg North-east Shore SAC, including in relation to habitats sensitive to water level regimes, nor that additional ecological assessment is required.

25.4.7 In-Combination Effects in the Hydrological Model

2728. The prescribed body submission from the NPWS raised specific issues relating to in-combination effects in the hydrological model:

Unique ID	Name of Prescribed Body
WSP_SUB_83	National Parks and Wildlife Service (NPWS) -Development Applications Unit (DAU)

2729. This prescribed body submission stated that additional upstream increases in water abstractions or drainage could influence the result of the predictive model including the following: Increased abstraction / drainage, proposed abstraction, upstream abstractions, proposed Eflow plan, catchment drainage, decreased abstraction / storage, Ardnacrusha (compensation), catchment storage.

25.4.7.1 Applicant's Response

2730. An in-combination assessment of these specific factors (e.g. water abstractions or drainage) was undertaken and is presented in Section 8 of the NIS. This assessment considered the effects of the Proposed Project in-combination with other plans and projects that are existing, approved, or proposed and reasonably foreseeable on the basis of best scientific knowledge available at the time of assessment.

2731. Accordingly, the in-combination assessment captures the range of upstream pressures identified in the submission, including abstraction regimes and drainage patterns, insofar as they form part of the baseline environment or constitute reasonably foreseeable changes. The findings of this assessment demonstrate that the potential for such upstream activities, in-combination with the Proposed Project, to materially alter the outcomes of the predictive model has been robustly evaluated, and no significant adverse effects on the integrity of the relevant European sites were identified.

2732. It is noted that the Proposed Project, when considered alone, would not adversely affect the integrity of the Lower River Shannon SAC, and would not result in any change to the generator discharge rate at the Ardnacrusha Generating Station. On that basis, and having regard to the absence of any identified

impact pathway by which the Proposed Project could interact with other abstraction or drainage pressures, the assessment concludes that there is no potential for significant adverse in-combination effects to arise.

25.4.8 Consideration of Baseline Conditions for the Conservation Objectives of the Lower River Shannon SAC

2733. The prescribed body submission from Clare County Council raised specific issues relating to the potential hydrological impacts of the Proposed Project on the conservation objectives of the Lower River Shannon SAC:

Unique ID	Name of Prescribed Body
WSP_SUB_110	Clare County Council

2734. This prescribed body submission stated that the site-specific conservation objectives explicitly identify Parteen and Ardnacrusha as ‘considerable obstructions’ on the Shannon main channel for salmon, with upstream migration described as ‘problematical’. The submission continued that the Proposed Project overlaps in part with the Lower River Shannon SAC in three locations and stated that ACP must ensure that the AA takes into consideration the current baseline conditions in terms of ongoing impacts on the attributes and targets associated with the conservation objectives for this European site (for example, through the reduction in flow over Parteen Weir have spawning beds contracted and / or been lost due to sedimentation as a result of low flows?).

25.4.8.1 Applicant’s Response

2735. The concern raised in the submission regarding existing constraints to salmon migration at Parteen and Ardnacrusha is acknowledged. However, it is important to clearly distinguish between the existing baseline scenario and likely significant effects associated with the Proposed Project. The NIS evaluates the Proposed Project against the current baseline conditions, including pre-existing barriers and flow controls.

2736. As set out in Section 3.5.3 of the NIS, the RWI&PS has been designed as a bankside intake within Parteen Basin, with intake chambers located below ground level and below the water surface. This approach minimises in-channel works and avoids the introduction of any new in-stream structures that could interact with migratory pathways. Consequently, the Proposed Project will not introduce any additional barrier effects within the Lower River Shannon SAC, nor will it add to the already ‘considerable obstructions’ identified in the conservation objectives. Migration conditions within the River Shannon and past the RWI&PS will remain structurally unchanged from the current baseline.

2737. The Proposed Project would not change the generator discharge rate at the Ardnacrusha Generating Station; however, the duration of discharges would be reduced by approximately 2% on average. This is because the flow rates through the power station are fixed by the generator characteristics and so, to bring about the reduction in volume required to accommodate the abstraction being proposed, a reduction in time operating must occur. This would result in lower volumes of flow through the Ardnacrusha Generating Station through an unchanged generator flow rate operating for a shorter period of time, with marginally longer periods of no flow through Ardnacrusha. Smolts migrating downstream would likely marginally benefit from this scenario as smolts are attracted to higher flows. During reduced periods of hydropower generation, they would therefore be encouraged to migrate downstream over Parteen Weir, instead of through the turbines at Ardnacrusha. Furthermore, within operating guidelines which seek to increase late spring water levels to the upper limit of the Normal Operating Band, the Proposed Project would not impede the ability to adjust appropriate hydropower flows, with increased flow to the Old River Shannon during periods of smolt migration (April).

2738. The submission also queries whether existing reduced flows may already be contributing to sedimentation and loss or contraction of spawning habitat downstream of Parteen Weir. This issue pertains to the baseline condition of the SAC and is not attributable to the Proposed Project. Notwithstanding this, the hydrological and water quality modelling undertaken demonstrates that the Proposed Project will not result in any measurable change to water levels, flow regimes, or flushing capacity either upstream or downstream of Parteen Basin. Abstraction will occur entirely within the Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB apply to Parteen Basin and will be managed as part of ESB's existing water level control regime. There will be no reduction in statutory compensation flows (10m³/s) to the Old River Shannon, no reduction in inflows from upstream sources, and no alteration to flows through Lough Derg. Accordingly, there will be no change to sediment transport processes, no reduction in channel flushing, and no potential for the Proposed Project to contribute to sediment accumulation or degradation of spawning habitats. Any existing sedimentation issues will neither be exacerbated nor influenced by the Proposed Project.
2739. The NIS sets out a comprehensive suite of embedded design measures and mitigation (refer to Section 7.1.4 and Table 7.5) that specifically address the protection of qualifying interest habitats and species, including salmon and lamprey. These measures ensure the avoidance of Construction Phase impacts, the protection of water quality, the prevention of INNS introduction, and the maintenance of ecological connectivity.
2740. On the basis of the above, and taking full account of the existing baseline pressures identified in the conservation objectives, it is concluded that the Proposed Project will not give rise to any additional adverse effects (direct, indirect, or in-combination) on the integrity of the Lower River Shannon SAC.

25.4.9 Errors in Appropriate Assessment Methodology

2741. The prescribed body submission from Clare County Council raised concerns about errors in the AA methodology:

Unique ID	Name of Prescribed Body
WSP_SUB_110	Clare County Council

2742. This prescribed body submission stated that Irish courts frequently examine whether the AA followed a correct scientific methodology, and permissions have been quashed where mitigation measures were improperly relied upon during screening, conservation objectives of Natura 2000 sites were not specifically assessed, ecological connectivity between sites was ignored and where there is scientific uncertainty remained regarding impacts.
2743. The submission continued that the hydrological and ecological impacts have not been ruled out beyond reasonable scientific doubt. The submission continued that consent may only be granted where it has been demonstrated that the Proposed Project will not adversely affect the integrity of the site, and that Key EU caselaw has clarified this test, confirming that mitigation measures cannot be relied upon during AA screening and that any loss of protected habitats capable of undermining conservation objectives may constitute an adverse effect.

25.4.9.1 Applicant's Response

2744. The AA for the Proposed Project has been undertaken in full accordance with the requirements of Article 6(3) of the Habitats Directive and informed by relevant case law of the Court of Justice of the European Union.

2745. The AA Screening did not rely on mitigation measures to exclude the potential for likely significant effects. Where potential impact pathways could not be excluded on the basis of objective information, these were brought forward to Stage 2 AA.
2746. The NIS applies a precautionary, evidence-based approach using the best scientific knowledge available at the time of assessment. The evaluation of effects has been undertaken to a level that enables the competent authority to reach a conclusion beyond reasonable scientific doubt.
2747. The assessment explicitly considers the conservation objectives of the relevant European sites, including the Lower River Shannon SAC, and evaluates whether the Proposed Project, alone and in combination with other plans and projects, could undermine the structure, function, or conservation status of the qualifying interests.
2748. Potential hydrological and ecological linkages, including upstream and downstream connectivity within the wider catchment, have been examined and incorporated into the assessment, including through the predictive modelling and the in-combination assessment presented in Section 8 of the NIS.
2749. Mitigation measures, where relevant, have been considered at the AA stage and not at screening. The assessment demonstrates that, following consideration of impact pathways and any necessary mitigation, the Proposed Project will not result in any adverse effect on the integrity of any European site.
2750. In response to the specific assertion that hydrological and ecological impacts have not been ruled out beyond reasonable scientific doubt, it is reiterated that all plausible impact pathways have been identified and assessed. The conclusions of the NIS demonstrate, on the basis of complete, precise, and definitive findings, that the Proposed Project, either alone or in-combination with other plans or projects, will not adversely affect the integrity of any European site. No residual scientific uncertainty remains that would undermine this conclusion.

25.4.10 Potential Impacts on Wetlands and Raised Bogs

2751. The prescribed body submission from Clare County Council raised concerns about the potential impact of the Proposed Project on wetlands and raised bogs:

Unique ID	Name of Prescribed Body
WSP_SUB_110	Clare County Council

2752. This prescribed body submission stated that there are several Natura 2000 sites within the basin protect active raised bog habitats, including Mongan bog SAC, and that raised bog ecosystems are extremely sensitive to hydrological change. The submission continued that, even minor reductions in groundwater levels may halt peat formation, accelerate peat oxidation and release stored carbon.

25.4.10.1 Applicant's Response

2753. A detailed response in relation to a similar submission is provided herein in Section 25.3.3.1.
2754. The Mongan Bog SAC (Site Code: 000580) is designated for active raised bogs [7110], degraded raised bogs still capable of natural regeneration [7120], and depressions on peat substrates of the Rhynchosporion [7150]. This SAC is located upstream and greater than 68km from the proposed abstraction. As discussed in Section 2.2.1 of the NIS, the 'upstream limit' of the abstraction Zol is Meelick Weir, which is located on the Shannon (Lower)_030, approximately 15km upstream of Lough Derg, and approximately 50km upstream of the Raw Water Intake and Pumping Station (RWI&PS). Flow and water level at this location are determined only by conditions upstream, and not by conditions

downstream. This therefore sets the upper limit of physical influence for water levels in Lough Derg, i.e. it is not physically possible for water levels in Lough Derg, in low and medium flows, to influence water levels upstream of Meelick Weir. The proposed abstraction at Parteen Basin for the Proposed Project would have no hydrological influence on the River Shannon upstream of Meelick Weir. As Mongan Bog SAC is located upstream of Meelick Weir, it is beyond the Zol of the Proposed Project. No surface water or groundwater pathway exists. No source-pathway-receptor exists with the Proposed Project, and therefore no pathway for effects. Thus, this European site was not considered in the AA.

2755. Additional European sites referenced in the submission which have not been assessed in the AA include Carn Park Bog SAC (Site Code: 002336), Crosswood Bog SAC (Site Code: 002337), Castlesampson Esker SAC (Site Code: 001625), and Mongan Bog SPA (Site Code: 004017):

- Carn Park Bog SAC is located in County Westmeath. This SAC is located upstream and greater than 82km from the proposed abstraction. It is located beyond the 'upstream limit' of the abstraction Zol. No source-pathway-receptor exists with the Proposed Project, and therefore no pathway for effects. Thus, this European site was not considered in the AA
- Crosswood Bog SAC is located in County Westmeath. This SAC is located upstream and greater than 79km from the proposed abstraction. It is located beyond the 'upstream limit' of the abstraction Zol. No source-pathway-receptor exists with the Proposed Project, and therefore no pathway for effects. Thus, this European site was not considered in the AA
- Castlesampson Esker SAC is located in County Roscommon. This SAC is located upstream and greater than 72km from the proposed abstraction. It is located beyond the 'upstream limit' of the abstraction Zol. No source-pathway-receptor exists with the Proposed Project, and therefore no pathway for effects. Thus, this European site was not considered in the AA
- Mongan Bog SPA is located in County Offaly. This SAC is located upstream and greater than 68km from the proposed abstraction. It is located beyond the 'upstream limit' of the abstraction Zol. No source-pathway-receptor exists with the Proposed Project, and therefore no pathway for effects. Thus, this European site was not considered in the AA.

25.4.11 Cumulative Hydrological Pressures and Migratory Fish

2756. The prescribed body submissions from Clare County Council and Limerick County Council raised concerns about the potential cumulative hydrological pressures on ecology:

Unique ID	Name of Prescribed Body
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council

2757. The prescribed body submission from Clare County Council stated that the Shannon Basin is already subject to cumulative pressures from agriculture nutrient loading, peatland drainage, climate-related rot conditions and existing water abstractions. The submission continued that EU law requires that these cumulative pressures be considered during AA and that failure to consider cumulative impacts has been a recurring ground for judicial review of planning decisions in Ireland.

2758. The prescribed body submission from Limerick County Council stated that cumulative impacts of projects on migratory fish species on the Lower River Shannon must be examined. There was a serious omission that the project does not consider the Lower Shannon Fish Passage Project; they draw from the same source and therefore must be assessed together.

25.4.11.1 Applicant's Response

2759. An in-combination assessment was undertaken and is presented in Section 8 of the NIS. This assessment considered the effects of the Proposed Project in-combination with other plans and projects

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that are existing, approved, or proposed and reasonably foreseeable on the basis of best scientific knowledge available at the time of assessment.

2760. The assessment takes account of the pressures identified in the submission (such as agricultural nutrient loading, peatland drainage, climate-related decomposition processes, and existing water abstractions) where these contribute to the baseline conditions of the receiving environment or represent reasonably foreseeable changes. It demonstrates that the potential for these factors, acting in-combination with the Proposed Project, to influence hydrological and ecological modelling outcomes has been considered.

2761. It is noted that the Proposed Project, when considered alone, would not adversely affect the integrity of the Lower River Shannon SAC, and would not result in any change to the generator discharge rate at the Ardnacrusha Generating Station. On that basis and having regard to the absence of any identified impact pathway by which the Proposed Project could interact with other abstraction or drainage pressures, the assessment concludes that there is no potential for significant adverse in-combination effects to arise.

2762. In relation to ‘cumulative impacts of projects on migratory fish species’ a detailed response to this is provided in Section 25.3.2.1.

25.4.12 Precautionary Principle

2763. The prescribed body submission from Clare County Council raised concern about application of the precautionary principle:

Unique ID	Name of Individual or Organisation
WSP_SUB_110	Clare County Council

2764. This prescribed body submission stated that the precautionary principle requires refusal a projects where environmental risks cannot be ruled out with certainty, and that given the ecological complexity of the Shannon Basin and the number of protected sites potentially affected, such certainty may not be achievable.

25.4.12.1 Applicant's Response

2765. The NIS has adopted a precautionary, evidence-based approach, drawing on the best scientific knowledge available at the time of assessment. The evaluation of potential effects has been carried out to a level of detail sufficient to enable the competent authority to reach a reasoned conclusion beyond reasonable scientific doubt.

2766. The hydrological modelling underpinning the assessment of likely significant effects associated with the proposed abstraction is presented in Annex A of Appendix A9.1 (Abstraction Assessment), and considers a full range of flow scenarios, including:

- Flood conditions
- Normal (non-flood, non-drought) conditions
- Drought conditions.

2767. These scenarios ensure that the assessment captures the variability and ecological sensitivity of the Shannon Basin within the ZOI of the Proposed Project, including conditions under which likely significant effects could occur.

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2768. The full detail of the assessment is reported across the relevant documentation, including the NIS, EIAR Chapter 8 (Biodiversity), EIAR Chapter 9 (Water), Appendix A9.1 (Abstraction Assessment) and the associated Hydrological Modelling Report. Additional clarification in response to specific concerns raised is provided in Sections 25.3.5.1 and Section 25.4.9.1. Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels).
2769. Accordingly, it is not accurate to suggest that uncertainty has not been addressed or that key scenarios have been omitted. The assessment demonstrates that the precautionary principle has been properly applied through a rigorous, science-based evaluation, rather than as a basis for default refusal.

25.4.13 Potential Impact on Special Conservation Areas and Special Protection Areas in Limerick

2770. The prescribed body submission from Limerick County Council raised concern about the potential impact of the Proposed Project on specific SACs and SPAs:

Unique ID	Name of Individual or Organisation
WSP_SUB_112	Limerick County Council

2771. The prescribed body submission noted the absence of the Askeaton Fen SAC and raised whether hydrological linkages to the Shannon could cause an indirect effect on the Askeaton Fen SAC. The submission stated that all designated sites with potential linkages to the Shannon should be fully documented. This prescribed body submission stated that given the presence of the Lower River Shannon SAC and River Shannon and Fergus Estuaries SPA in Limerick, potential implications arising from water abstraction should be considered on these Natura 2000 sites and their qualifying interests. The submission also raised concern for the risk to ecology in the River Shannon, resulting in impacts on existing fish stocks including salmon, eel and lamprey.

25.4.13.1 Applicant's Response

2772. A detailed response in relation to a similar submission is provided herein in Section 25.3.3.1.
2773. The Askeaton Fen Complex SAC (Site Code: 002279) is designated for calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210] and Alkaline fens [7230]. This SAC is located downstream and greater than 31km from the proposed abstraction. While the River Shannon and River Fergus Estuaries SPA (Site Code: 004077) is designated for waterbirds of special conservation interest and is located downstream and greater than 18km from the proposed abstraction. As discussed in Section 2.2.1 of the NIS, the 'downstream limit' of the abstraction Zol is the confluence of the Shannon (Limerick Dock) and the Ardnacrusha Tailrace at Limerick Dock. The diurnal tidal influence on water levels and flows at this point mean that any change in the Tailrace flow, resulting from a change in duration of flow through Ardnacrusha Generating Station as a result of the Proposed Project abstraction, would have no hydrological influence beyond the confluence at Limerick Dock.
2774. As Askeaton Fen Complex SAC and the River Shannon and River Fergus Estuaries SPA are located downstream of Limerick Dock they are beyond the Zol of the Proposed Project in relation to hydrological impacts associated with the abstraction during the Operational Phase. Thus, these European sites were not considered in the AA in this context.
2775. Concerns regarding potential 'risk to ecology in the River Shannon, resulting in impacts on existing fish stocks including salmon, eel and lamprey', are addressed in detail in Section 25.3.2.1, Section 25.3.5.1, Section 25.3.7.1, and Section 25.3.8.1.

25.4.14 Mitigation Measures

2776. The prescribed body submission from Offaly County Council recommended that all mitigation measures in the AA Screening and NIS shall be implemented by the Applicant for the Construction and Operational Phases:

Unique ID	Name of Individual or Organisation
WSP_SUB_113	Offaly County Council

25.4.14.1 Applicant's Response

2777. As noted in Section 7.1.4 of the NIS, all mitigation measures will be implemented by the appointed Contractor under the supervision of an ECoW, to prevent or reduce the potential adverse effects identified in the NIS.

2778. The Applicant confirms that these measures have been incorporated into the CEMP (see EIAR Appendix A5.1) and will be binding on the appointed Contractors to ensure full compliance.

25.4.15 Potential Hydrological or Ecological Interactions with Other Designated Sites

2779. The prescribed body submission from Limerick County Council raised specific concerns about the potential hydrological or ecological interactions with other designated sites as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_112	Limerick County Council

2780. This prescribed body submission stated that the central ecological considerations relate to potential hydrological or ecological interactions with other designated sites. The submission continued that, although the physical works within Limerick are limited to uprating an existing overhead ESB line, it remains necessary to consider the wider environmental context in which these works sit, insofar as the Proposed Project as a whole may influence ecological conditions downstream or across designated sites affecting Limerick.

25.4.15.1 Applicant's Response

2781. The concern raised over potential hydrological or ecological interactions with designated sites in County Limerick is comprehensively addressed within the NIS.

2782. Section 6 of the NIS systematically identifies all European sites within the ZoI of the Proposed Project, including those in County Limerick, through the application of a robust source–pathway–receptor methodology. This is not a geographically limited exercise: a total of 78 European sites were initially considered based on potential connectivity (e.g. shared hydrological pathways, groundwater bodies, or other ecological linkages). Each of these sites was then subject to detailed screening to determine whether a credible source–pathway–receptor relationship exists. As a result of this evidence-based process, 19 sites were identified as having a potential pathway for effect and were carried forward for further assessment.

2783. Importantly, the identification of pathways was not limited to hydrological connections but included all relevant mechanisms of potential impact, such as surface water and groundwater interactions, as well as disturbance effects (visual, noise, and human presence) and habitat loss, including impacts on supporting habitats. Table 6.1 of the NIS sets out, for each site, the qualifying interests and special

conservation interest species, alongside the specific pathways by which effects could arise, explicitly linking these to the conservation objectives of each site.

2784. Section 7 of the NIS provides a detailed and site-specific assessment of both direct and indirect impacts on all European sites screened into the ZoI. This assessment goes beyond high-level consideration and examines the sensitivity of qualifying interests and special conservation interest species in the context of their conservation objectives, including attributes, targets, and current conservation condition. It also considers the role of undesignated habitats and species that support the ecological functioning of designated sites. Furthermore, the assessment integrates embedded avoidance and design measures (outlined in Section 3.5 of the NIS) as part of the impact evaluation. Where necessary, additional mitigation measures are identified on a site-by-site basis, and any residual effects are assessed to determine whether they could adversely affect the integrity of European sites.
2785. Section 8 addresses potential in-combination effects with other plans and projects, ensuring that cumulative impacts, including those that could occur across geographical boundaries such as into County Limerick, are fully considered.
2786. In this context, the assertion that the wider environmental context, including downstream or cross-site ecological interactions, may not have been adequately considered is not supported by the NIS. The document demonstrates a comprehensive, pathway-driven, and scientifically robust assessment of all relevant ecological linkages, including those extending beyond the immediate footprint of the Proposed Project.

25.4.16 Adequacy of Abstraction-Related Assessments for Limerick

2787. The prescribed body submission from Limerick County Council raised specific concerns about the adequacy of the abstraction-related assessment in the NIS:

Unique ID	Name of Individual or Organisation
WSP_SUB_112	Limerick County Council

2788. This prescribed body submission stated that one of the central ecological considerations relates to the adequacy of abstraction-related assessments (as they relate to Limerick).

25.4.16.1 Applicant's Response

2789. The results from the hydrological and hydrodynamic models demonstrate there would be no significant effects on water levels and the flow regime either upstream or downstream of the Proposed Project (including downstream in County Limerick), therefore, the proposed abstraction is not predicted to have any effect on the qualifying interest habitats or species of the Lower River Shannon SAC. More detail on this is provided in Section 7.1 of the NIS as well as Section 25.3.5 and Section 25.4.15.1 herein.

25.4.17 Pathways for Invasive Species Introduction or Pathogen Transfer

2790. The prescribed body submission from Limerick County Council raised specific concerns about pathways for invasive species introduction and pathogen transfer as a result of the Proposed Project:

Unique ID	Name of Individual or Organisation
WSP_SUB_112	Limerick County Council

2791. This prescribed body submission stated that one of the central ecological considerations relates to the pathways for invasive species introduction or pathogen transfer. The submission continued that one of the issues which arises is the possible transfer of invasive species and pathogens between catchments,

particularly those that may have a high capacity for reproduction and have effects on ecology and infrastructure.

25.4.17.1 Applicant's Response

2792. Mitigation measures to avoid the introduction or spread of INNS and pathogens as a result of the Proposed Project are provided in Section 7.1.4.5 of the NIS and in Section 8.8.2.1.3, Section 8.8.3.2 and Section 8.10.3.1 of the EIAR. In addition, a Non-Native Invasive Species Management Plan has been prepared and included in the CEMP (EIAR Appendix A5.1) and will be implemented sufficiently far in advance of the proposed construction works commencing so as to allow time to adequately control all target INNS populations within the ZOI of the Proposed Project, having regard to the specific timing/seasonal constraints that apply in relation to each individual species. The Non-Native Invasive Species Management Plan will direct the Contractors in implementing the specific mitigation measures required in relation to individual INNS.
2793. In relation to the possible transfer of INNS and pathogens between catchments, specifically in relation to the proposed abstraction, as outlined in Section 4.4.5.5 of the EIAR and Section 7.1.4.5 of the NIS, the RWI&PS has been specifically designed to minimise this risk.
2794. The PWWC Intake Screens would be manufactured entirely of a copper-nickel alloy to inhibit attachment by INNS, including, zebra mussels, quagga mussels and Asian clams. There would be three screens, and this allows for any one screen to be lifted out for inspection and cleaned while the full abstraction volume flows through the other two screens. Each screen serves its own Inlet Chamber, which can also be isolated for cleaning from the other chambers while the full flow is passing through.
2795. While the PWWC Intake Screens would be made of a copper-nickel alloy to minimise the risk of INNS attachment, some pro-active anti-fouling measures would also be needed to protect the intake pipes from becoming clogged. The pipes would be internally coated with proprietary products to discourage INNS from attaching to the pipe wall.
2796. The Raw Water Pumping Station pump sets would deliver water into common manifolds which feed the twin Raw Water Rising Mains (RWRMs). Each RWRM can be taken out of service for maintenance, while delivering the full required flow through the other one. The pumping system is configured in such a way that not just the RWRM but each piece of pipework in the station can be accessed for maintenance without interruption of supply. In the event of INNS infestation, either of the RWRMs could be taken out of service for days or weeks, as may be required for short-term 'pigging' or occasional longer standing chemical treatment, or for creating prolonged fully drained conditions which would inhibit the establishment of zebra mussels or other INNS.
2797. In order to protect from INNS infestation, it would be possible to dose invasive species control chemicals directly into the raw water using control chemicals approved for use in water treatment of potable water. Provision has been made within the Raw Water Pumping Station Building for the storage and dosing of BioBullets or similar approved chemicals into the raw water.
2798. The two microfiltration plants, one on each RWRM, housed in separate Microfiltration Buildings (as shown in EIAR Figure 4.61) would provide further protection against INNS. Each microfiltration module would incorporate five filter units. The microfiltration size would typically be 40 microns, which is below the size at which the zebra mussel juveniles, called 'veligers', are usually observed to settle. The microfiltration modules would be equipped with protective non-return valves to prevent damage from surge backflows through the units.
2799. The microfilters (Amiad Filters or equivalent) would sit on a manifold located on a loop off each RWRM. Raw water would pass through these units and dirt particles and juvenile mussels would be trapped in

the unit, forming a 'filtration cake'. This cake would cause a pressure drop across the unit and a self-cleaning process would be triggered. The self-cleaning process would involve the units being flushed regularly to clean away any zebra mussels or other waste material trapped in the filters. A filter flush-out pipe would carry the washwater to an Invasive Species Debris Retention Tank, located to the east of the Microfiltration Buildings. This washwater volume would be approximately 1% of the maximum abstraction volume (i.e. up to 3,000m³/day) based on an output of 300Mld.

2800. This washwater would be subject to ultraviolet (UV) treatment to kill mussel juvenile forms (veligers) before being settled in the Invasive Species Debris Retention Tank. A floating-arm draw-off pipe would take supernatant liquid (the clear liquid that lies above the solid residue) from the tank and transfer it back to the raw water intake, via the Inlet Chamber, from where it would be pumped onwards for treatment at the Water Treatment Plant (WTP). Rejected solid material settled out in the Invasive Species Debris Retention Tank would be removed from site to an appropriately authorised facility in accordance with the requirements of the Waste Management Act 1996 (as amended) (see EIAR Chapter 19: Resource & Waste Management for further information).
2801. Two Raw Water Balancing Tanks (RWBTs) are also proposed in the WTP, described further in Section 4.6.5 of the EIAR, so that in the event of an INNS breakthrough, one can be taken out of service for inspection, cleaning and maintenance, while the full flow is passing through the other tank.
2802. The combination of measures at the RWI&PS and the water treatment process itself would reduce the risk of INNS breakthrough to the Treated Water Pipeline and between catchments.
2803. In addition, the spread and introduction of INNS and noxious weeds during the Construction Phase and Operational Phase will be avoided by adopting appropriate mitigation measures in accordance with guidance issued by TII (TII, 2017; TII 2020), IFI (2010) and Uisce Éireann (2018). Any plant INNS material noted on-site or within 15m of working areas will be treated and/or removed off site and disposed of at appropriate licensed or permitted waste disposal facilities in compliance with the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011). The presence of INNS and requirement for actions will be confirmed and supervised by an ECoW.
2804. All plant and equipment employed on the various construction sites (e.g. excavators, footwear, etc.) will be thoroughly cleaned down using a power washer unit into a contained area prior to leaving site at access/egress points, to prevent the spread of INNS aquatic/riparian species, in accordance with the OPW Environmental Standard Operating Procedures (OPW 2011) and/or IFI Biosecurity Protocols (IFI 2010) and the Uisce Éireann Japanese knotweed Information and Guidance Document (Uisce Éireann 2018). Additional care will be taken near watercourses, as water is a fast medium for the dispersal of plant fragments and seeds. In relation to aquatic INNS all construction works, and any aquatic work that will be carried out (e.g. electrofishing and trapping), will comply with best practice biosecurity protocols for aquatic work (IFI 2010).
2805. A sign-off sheet will be maintained and checked daily or as required, to confirm cleaning. Staff involved in the works will be informed as to the presence of INNS in the area. All staff working on the Proposed Project will be familiar with the sections within the Management of Invasive Alien Plant Species on National Roads – Technical Guidance (TII 2020) which details the treatment necessary for the pertinent INNS, together with the required reporting procedure if encountered.
2806. Further information in relation to mitigation measures proposed to avoid the introduction or spread of INNS is provided in Section 7.1.4.5 of the NIS.

25.4.18 Compliance of the Flow with the Habitats Directive

2807. The prescribed body submission from Limerick County Council raised concerns about the compliance of the assumed 10m³/s flow with the Habitats Directive:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council

2808. This prescribed body submission stated that there is an assumption that maintaining 10m³/s down the Old River Shannon is sufficient but that this was set almost a century ago and it is the legal minimum not the flow required to comply with the Habitats Directive.

25.4.18.1 Applicant's Response

2809. As the submission notes, and as outlined in the NIS (Section 4.1.1.2), a statutory compensation flow of 10m³/s is released to the Old River Shannon by ESB.

2810. The Habitats Directive does not require an assessment against hypothetical or undefined future ecological conditions. Under Article 6(3), the key obligation is to assess whether a plan or project, either alone or in-combination with other plans or projects, would adversely affect the integrity of a European site in view of its conservation objectives. This assessment must be undertaken on the basis of the site's current condition and the conservation objectives as defined by the competent authority.

2811. Notwithstanding this, the hydrological model found that the released flows to the Old River Shannon during periods of spill are virtually the same for the Proposed Project abstraction rate of 300Mld with either a compensation flow of 10m³/s or Eflows. Reinstatement of more natural water regimes would involve partly storing all flood inflows and partly spilling to the Lower River Shannon in a naturally variable freshet time profile. Having due regard to the River Shannon statutory compensation flow obligations, ESB's current practice is that late spring water level is kept near the top of the Normal Operating Band. At winter flood times, and when autumn recovery has started, greater sharing of inflows between storage and the Old River Shannon reduces water available for use in hydropower, reducing revenue to ESB.

2812. The Proposed Project would be abstracting up to a maximum of 300Mld or 3.47m³/s and while there may be technicalities for ESB in adjusting gates to provide flow variability, the Proposed Project would not impede a flow-sharing decision between hydropower and statutory compensation flow at appropriate times of the year and is not an impediment to any Parteen Weir gate adjustments to implement it.

2813. Full details of the hydrological model Eflows sensitivity analysis are provided in the EIAR Appendix A9.1 Annex A (Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

25.4.19 Determination of the Risk of Impact on Lower Shannon Special Conservation Area

2814. The prescribed body submission from Tipperary County Council raised concerns about the determination of significance of impact on the Lower Shannon:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

2815. This prescribed body submission stated that Tipperary County Council consider the risk of impact on the Lower Shannon may be more significant than presented for a number of reasons, including the fact

that the ecological system in the Lower River Shannon SAC (002165) and from Limerick Dock, (IE_SH_060_0900) to the Upper Shannon Estuary (IE_SH_060_0800) is already stressed with salmon (and other species) at critically low levels, and with the flows being already significantly regulated. The submission stated that an assumption is that provision for Atlantic salmon (upstream and downstream migration passage etc) in place within the current ESB generation operation is optimal, but that the system is flow-sensitive, small changes matter disproportionately, especially in drought scenarios as observed in 2018, and critically the downstream impacts undertaken as part of this assessment appear to be assumed, not demonstrated, with key regulatory concerns remaining unresolved.

2816. The submission also stated that a more robust hydraulic and ecological modelling should be undertaken on the Lower River Shannon SAC (002165) and from Limerick Dock (IE_SH_060_0900) to the Upper Shannon Estuary (IE_SH_060_0800) to quantify flow changes under abstraction (including % reductions), assessment of ecological thresholds (e.g. Atlantic salmon habitat requirements), evaluate assimilative capacity under reduced flows conditions, and test extreme and compound scenarios including a multi-year drought with abstraction scenarios.

25.4.19.1 Applicant's Response

2817. It is acknowledged in Table 7.5 of the NIS that there is currently a 'Borland-McDonald' fish lock at Ardnacrusha station and a 'pool-traverse fish pass' at Parteen regulating weir, both of which facilitate upstream and downstream fish movement. However, 'fish migration may be hindered or delayed due to the existence of hydro stations and their associated fish passes because the species of fish monitored and structural design of the fishways have strong implications for both attraction and passage performance (e.g. Noonan *et al.* 2011, Brunt *et al.* 2012)'. The Proposed Project does not modify these structures, nor does it introduce any new in-stream infrastructure that could alter migratory pathways.
2818. It is also acknowledged in Section 3.5.11 of the NIS that ESB currently manages water levels on Lough Derg and controls the water levels on Parteen Basin by diverting water to Ardnacrusha Power Station for the production of zero carbon electricity, and by opening gates at Parteen Weir to release water down the old course of the River Shannon. The water levels on Lough Derg are managed within a Normal Operating Band 460mm (18 inches approximately) in depth, across a wide range of flows. Water levels on Parteen Basin are managed within an upper and lower level for dam safety purposes. These controls already define the hydrological and ecological baseline. The assessment of effects has been undertaken in the context of this regulated system.
2819. A key distinction must be maintained between existing pressures and potential Proposed Project related effects:
- The RWI&PS has been designed as a bankside intake within Parteen Basin, with intake chambers located below ground level and below the water surface. This approach minimises in-channel works and avoids the introduction of any new in-stream structures that could interact with migratory pathways. Consequently, the Proposed Project will not introduce any additional barrier effects within the Lower River Shannon SAC, nor will it add to the already 'considerable obstructions' identified in the conservation objectives. Migration conditions within the River Shannon and past the RWI&PS will remain structurally unchanged from the current baseline
 - In hydrological terms, the ESB will facilitate the proposed abstraction of water by the Proposed Project within its current operating practices. As part of an overall agreement with ESB, water will be diverted to the Proposed Project abstraction from the flow that would otherwise have been used for electricity generation on a continuous year-round basis. At a practical level, this will mean that ESB, in keeping the water level within the Normal Operating Band on Lough Derg and within the upper and lower water level on Parteen Basin, will take account of, and respond to, the volume of water abstracted for the Proposed Project, alongside other relevant considerations such as, maintaining statutory compensation flow of 10m³/s down the old Shannon channel, predicted rainfall, the demand for power and operating practices. ESB will

maintain the water levels within the Normal Operating Band on Lough Derg and within the upper and lower water levels on Parteen Basin, as it does currently. Over longer periods there would be a generalised adjustment of the flow going to Ardnacrusha by ESB to respond to the volume of water used by the Proposed Project. However, the operation of Lough Derg, post works, will feel and look very similar to the way it currently operates, and there will not be a visible day to day difference.

2820. When the Ardnacrusha Generating Station ceases generation for long periods during low flow conditions (as occurred between 16 June and 28 August 2018), the proposed abstraction would continue to come from the Lake storage. The compensation flow over Parteen Weir to the Old River Shannon would continue undiminished. During this time, the Proposed Project abstraction would result in a gradual divergence in the water level in Parteen Basin through the drought season (albeit within the upper and lower levels that ESB apply), compared with the water level that would exist without abstraction. However, results from the hydrological model show abstraction in this scenario can still exist within the Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB applies on Parteen Basin, without a change to the Old River Shannon compensation and fish pass flows, which would always be met.
2821. The assertion that downstream impacts have been assumed rather than demonstrated is not supported by the evidence. The assessment is underpinned by a comprehensive hydrological model, detailed in Annex A of Appendix A9.1 (Abstraction Assessment). This modelling explicitly simulates a full spectrum of conditions, including flood, normal, and drought scenarios, thereby capturing the range of hydrological variability relevant to ecological receptors. The inclusion of drought scenarios directly addresses the sensitivity highlighted in the submission, including conditions analogous to the 2018 event.
2822. Furthermore, the assessment adopts a precautionary approach consistent with best scientific practice, integrating hydrological outputs with ecological understanding to evaluate potential effects on qualifying interests. The results do not indicate significant adverse effects on the integrity of the Lower River Shannon SAC.
2823. Full details of the assessment are provided across the NIS, EIAR Chapter 8 (Biodiversity), EIAR Chapter 9 (Water), Appendix A9.1 (Abstraction Assessment) and the associated Hydrological Modelling Report, with further clarification in response to similar issues raised available in Section 25.3.2.1 and Section 25.3.5.1. Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

25.4.20 Assessment of Direct Effects of Abstraction on European Sites

2824. The prescribed body submission from Tipperary County Council raised concerns about the assessment of direct effects of abstraction on European sites:

Unique ID	Name of Prescribed Body
WSP_SUB_114	Tipperary County Council

2825. This prescribed body submission stated that this assessment must have full regard to best available scientific literature regarding potential effects of the aforementioned activities, of similar scale, in the context of the predicted effects of climate change in the area, on the supporting hydrological system of the qualifying interest habitats assessed, and the supporting habitats of each qualifying interest species and special conservation interest species assessed. The submission continued that the assessment of the downstream effects of water abstraction on European sites must have full regard to best available scientific literature regarding potential effects of the aforementioned activities, of similar scale, in the context of the predicted effects of climate change in the area, on the supporting hydrological system of

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the qualifying interest habitats assessed, and the supporting habitats of each qualifying interest species and special conservation interest species assessed.

25.4.20.1 Applicant's Response

2826. As detailed in Section 5.2.1.1.2 of the NIS, the assessment incorporates the best available and most relevant scientific literature on projected climate change impacts, and applies this evidence within a robust, precautionary modelling framework. A dedicated version of the hydrological model was run to investigate the likely impacts in the future when the Lake hydrology is subject to climate change. A precautionary approach to the consideration of climate change and a 'reasonable worst case' for the 2080s epoch was used.

2827. Two sources of climate change information regarding how Irish fluvial flows are projected to change were used and the results compared:

- The National University of Ireland (NUI) Maynooth (2008) report supplies river flow monthly change allowances for the 2080s epoch together with an indication of uncertainties for nine catchments across Ireland. The lower allowances were used to provide a reasonable worst-case scenario
- The ICARUS (2020) study supplies a means of selecting climate change allowances dependent on catchment characteristics for any location in Ireland.

2828. Climate change simulations for a reasonable worst-case scenario for the 2080s epoch with the inclusion of the Proposed Project abstraction indicate that simulated Lake levels would draw down closer to the bottom of the Normal Operating Band during the 2018 drought – the most impactful drought event from the 52-year model simulation period (1972 to 2023). However, the additional simulated Lake level drawdown is still fitting within the range of ESB normal observed Lake level fluctuations, resulting in Lake levels still remaining within the Normal Operating Band on Lough Derg and within the upper and lower water levels that ESB applies to Parteen Basin, and would mean no change to the Old River Shannon compensation and fish pass flows always being met from the inclusion of the Proposed Project abstraction. For more details on the hydrological model climate change scenarios, see the EIAR Appendix A9.1 Annex A (Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.

2829. These findings demonstrate that, even when assessed cumulatively with projected climate change effects using conservative assumptions, the Proposed Project does not give rise to hydrological changes of a magnitude that would adversely affect the supporting hydrological regime of qualifying interest habitats or associated species.

2830. Accordingly, the assessment fully satisfies the requirement to have regard to the best available scientific literature, to consider analogous pressures at a comparable scale, and to evaluate impacts within the context of projected climate change. The conclusions are robust, evidence-based, and precautionary in nature.

25.4.21 Compliance of the Natura Impact Statement

2831. The prescribed body submissions from Tipperary County Council and Clare County Council raised concerns about the NIS:

Unique ID	Name of Prescribed Body
WSP_SUB_110	Clare County Council
WSP_SUB_114	Tipperary County Council

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2832. The prescribed body submission from Tipperary County Council stated that the integrity test is not satisfied by demonstrating that i) water levels remain within historic operational bands, ii) physical hydraulic controls prevent large-scale drawdown and iii) no "visible" change occurs in day-to-day water level management.
2833. The submission continued that the NIS relies heavily on modelling of lake levels and flow pass-forward regimes, but does not clearly demonstrate how those physical metrics translate into ecological thresholds tied to conservation objectives for Annex I habitats and Annex II species.
2834. The submission notes the NIS does not clearly demonstrate that floodplain hydroperiod and ecological productivity remain unaffected under the abstraction regime, particularly under high-end climate change scenarios.
2835. The submission also states that the NIS repeatedly references ESB operational management of Lough Derg and Parteen Basin within a "Normal Operating Band". The conclusion that hydrological effects will be negligible appears to depend materially on continued adaptive management of flows and generation regimes. Where the avoidance of adverse effect depends on ongoing operational adjustments, those measures constitute mitigation.
2836. It also raises concerns about the 'cumulative pressures under future drought frequency scenarios' noting that the NIS does not adequately assess interactions with other pressures (e.g. wastewater discharges, industrial inputs, drought scenarios) under worst-case conditions, as required.
2837. The submission argues that the assessment of impacts on bird species in SPAs is incomplete, as it focuses on disturbance rather than the hydrological conditions (like seasonal flooding and food availability) that underpin habitat suitability. Overall, it concludes that the evidence base is insufficient and that further information and modelling are required before any conclusion of no adverse effect can be justified.
2838. The prescribed body submission from Clare County Council stated that the hydrological and ecological impacts have not been ruled out beyond reasonable scientific doubt.

25.4.21.1 Applicant's Response

2839. Section 7 of the NIS assesses the direct and indirect impacts of the Proposed Project with respect to the European sites which fall within the Zol of the Proposed Project. For each of the screened in European sites, the assessment sets out the analysis of the potential adverse effects, the qualifying interests/special conservation interest species at risk of these potential adverse effects in view of the sites' conservation objectives (including their specific attributes, measures and targets) and the qualifying interests/special conservation interest species conservation condition. In Section 9, the NIS concludes that following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the Proposed Project and with the implementation of the mitigation measures proposed, that the Proposed Project would not adversely affect (either directly or indirectly) the integrity of any European site, either alone or in-combination with other plans or projects, and there is no reasonable scientific doubt in relation to this conclusion.
2840. Under Article 6(3), the key obligation is to assess whether a plan or project, either alone or in-combination with other plans or projects, would adversely affect the integrity of a European site in view of its conservation objectives. This assessment must be undertaken on the basis of the site's current condition and the conservation objectives as defined by the competent authority. The conservation objectives reflect the ecological requirements of the qualifying habitats and species under the prevailing environmental conditions. Potential future changes in site management or ecological restoration measures do not form part of the assessment baseline unless they have been formally adopted and

are sufficiently defined. Accordingly, the AA is based on the best available scientific knowledge of the site's current ecological status and functioning.

2841. The NIS has considered whether the existing regulated flow regime gives rise to ecological impacts relevant to the conservation objectives of the Lower River Shannon SAC, and whether the Proposed Project could interact with these to result in adverse effects. The assessment concludes that the Proposed Project will not introduce changes to hydromorphological or flow conditions that would affect the structure or function of qualifying interest habitats, nor will it result in deterioration of the conservation status of qualifying interest species. The proposed abstraction does not alter the established flow regime in a manner that would affect key ecological parameters such as habitat extent, structure, function, or species movement.
2842. Furthermore, Appendix K of the NIS demonstrates that the Proposed Project would not impede the ability to restore the conservation objectives of the Lower River Shannon SAC. It should be noted that the restoration objectives associated with the hydrological regime are described in general terms (e.g. 'appropriate hydrological regime necessary for maintenance of alluvial vegetation'). Reinstatement of more natural water regimes would involve a combination of partial storage of flood inflows and controlled releases to the Lower River Shannon, reflecting a naturally variable freshet profile. As noted in Section 4.1.1.2 of the NIS, a sensitivity analysis to the proposed Eflow regime at Parteen Weir (CDM Smith 2021), in which the existing 10m³/s compensation and fish pass flow is replaced by a varying compensation flow with the inclusion of freshets (increased flows during a flood event or a release of additional water) to assist migratory fish up the Old River Shannon and into Parteen Basin, was undertaken. This found that similar water level differences were simulated during the droughts when the proposed abstractions were included in the Eflow scenario as were predicted for the case for a constant compensation flow. However, this assumes that freshets would not be released during flood (i.e. when spilling) or drought conditions. The basis of this drought period assumption is that if the Eflow is an attempt to mimic the natural flow regime then artificially releasing standard freshets over this period would be introducing a non-natural characteristic to the flow regime. In summary, the hydrological model found that the released flows to the Old River Shannon during periods of spill are virtually the same with or without the proposed Eflows regime in place. However, outside of flood and drought periods more water is released, together with flow variability, by the Eflows regime compared to the use of a uniform 10m³/s compensation flow. Full details of the hydrological model Eflows sensitivity analysis are provided in the EIAR Appendix A9.1 Annex A (Hydrological Modelling Report). Further information is also provided in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report. Reinstatement of more natural water regimes would involve partly storing all flood inflows and partly spilling to the Lower River Shannon in a naturally variable freshet time profile. Having due regard to the River Shannon statutory compensation flow obligations, ESB's current practice is that late spring water level is kept near the top of the Normal Operating Band. At winter flood times, and when autumn recovery has started, greater sharing of inflows between storage and the Old River Shannon reduces water available for use in hydropower, reducing revenue to ESB. The Proposed Project would be abstracting up to a maximum of 300Mld or 3.47m³/s and while there may be technicalities for ESB in adjusting gates to provide flow variability, the Proposed Project would not impede a flow-sharing decision between hydropower and statutory compensation flow at appropriate times of the year and is not an impediment to any Parteen Weir gate adjustments to implement it.
2843. In response to concerns regarding ecological productivity remaining unaffected under the abstraction regime, particularly under high-end climate change scenarios, a detailed response is provided in Section 25.3.4.1 and Section 25.4.20.1 of this report.
2844. The submission states that the reliance on ESB's operational management of Lough Derg and Parteen Basin within a 'Normal Operating Band' constitutes mitigation, on the basis that the conclusion of no adverse hydrological effect depends on ongoing adaptive management. However, this conclusion is not accepted. In the context of AA under the EU Habitats Directive, mitigation measures are those

measures that are specifically introduced as part of a Proposed Project in order to avoid or reduce adverse effects on a European site, and which are necessary to reach a conclusion of no adverse effect on site integrity. In this instance, the hydrological and hydrodynamic modelling undertaken for the Proposed Project demonstrates, in the absence of any additional measures, that there will be no significant alteration to water levels or flow regimes either upstream or downstream of the Proposed Project. On that basis, it is concluded that there is no likelihood of significant effects on the Lower River Shannon SAC. The reference to ESB's established operational management regime within a 'Normal Operating Band' does not introduce any new or Proposed Project specific measure, nor does it represent an intervention required to avoid or reduce an identified impact arising from the Proposed Project. Rather, it describes the existing baseline operating conditions of the system, which form part of the environmental context against which the Proposed Project has been assessed. Accordingly, the conclusion of no likely significant effect does not rely on the implementation of the alleged mitigation measures. The operational adjustments referred to are part of the existing, established management regime and are not measures upon which the assessment outcome depends. As such, they cannot properly be characterised as mitigation within the meaning of Article 6(3) of the EU Habitats Directive.

2845. In relation to 'cumulative pressures under future drought frequency scenarios' a detailed response to this is provided in Section 25.3.2.1, Section 25.3.5.1, Section 25.3.12.1, Section 25.4.1.1, Section 25.4.7.1, and Section 25.4.11.1 of this report.
2846. Regarding the submission's statement that the assessment of impacts on bird species within SPAs is incomplete because it focuses on disturbance rather than the hydrological conditions; this characterisation is not accepted. The assessment of potential likely significant effects has been underpinned by detailed hydrological and water quality modelling, which specifically examines changes to flow regime, water levels, and variability – the key determinants of the hydrological conditions that influence habitat suitability and prey availability.
2847. As noted in Section 7 of the NIS, the modelling demonstrates that the Proposed Project would abstract approximately 2% of the annual mean volume of flow at Parteen Basin, and 2.3% of water is currently used for hydropower from Parteen Basin. The natural volumetric range of flow in Parteen Basin, with wet and dry years, is approximately $\pm 30\%$ about the mean in a 25-year period of record. Against this baseline fluctuation, the predicted change attributable to the Proposed Project is negligible. Crucially, the assessment does not rely solely on average conditions but considers the range of hydrological variability, including seasonal and interannual fluctuations. As such, the modelling inherently captures the hydrological conditions that support habitat suitability and prey availability for special conservation interest bird species. No measurable alteration to water levels, flow regime, or the frequency and extent of wetland inundation has been identified, either upstream or downstream of the Proposed Project. Given the absence of any significant change to these controlling parameters, there is no impact pathway by which the Proposed Project could affect wetland habitat function or the ecological conditions supporting special conservation interest species.

26. Water Status Impact Assessment Report (Water Framework Directive)

26.1 Overview

2848. Twenty-three of the 114 submissions raised issues relating to the Water Status Impact Assessment Report (WFD Assessment) produced for the Proposed Project.
2849. A WFD Assessment was carried out and reported in the Water Status Impact Assessment Report (WSIAR) submitted as part of the SID Planning Application. The assessment complied with the relevant legislation, standards and guidance as set out in the report and was prepared by a team of competent experts as set out in Chapter 2 - The Environmental Impact Assessment Process in the EIAR.
2850. This Report and its supporting appendices comprise the response of the Applicant to the issues raised regarding WFD. The responses in this Chapter are related to those in the following Chapters of this report which should be read alongside this Chapter:
- Chapter 6 – Proposed Project Description;
 - Chapter 7 – Construction and Commissioning;
 - Chapter 10 – Biodiversity;
 - Chapter 11 – Water (Hydrological Modelling and Water Levels); and
 - Chapter 12 – Water (General).
2851. Cross references to these other relevant Chapters have been included where relevant to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
2852. This chapter is structured around the following sections:
- General matters raised in all general observer and Prescribed Body submissions regarding WFD;
 - Specific matters raised in general observer submissions regarding WFD; and
 - Specific matters raised by Prescribed Bodies regarding WFD.
2853. Within these sections there is some overlap and inter-relationship between the matters raised and where relevant cross references have been included to link any General and Specific Matter responses.
2854. Many of the submissions that raise concerns over the impact on the Lower River Shannon assert that the assessment has not adequately addressed the likelihood that the statutory minimum compensation flow will change in the future. The assessment does not assume that the historic origin of the 10 m³/s statutory minimum compensation flow is determinative for WFD compliance. Instead, the assessment is based on the current statutory flow regime, which is legally binding and forms part of the existing hydrological baseline for the affected water bodies. ESB maintains this minimum compensation flow under its statutory obligations, and the Proposed Project will not alter, constrain or influence these requirements.
2855. The WFD requires that a proposed activity must not cause deterioration in the status of any affected water body or prevent the achievement of environmental objectives.
2856. The WSIAR therefore evaluates whether the abstraction could affect the ecological or chemical status of the relevant water bodies given the actual flow regime that will continue to operate, including the

statutory compensation flow and the fish pass flow. The assessment does not rely on the 10 m³/s flow being ecologically optimal; rather, it evaluates whether the Proposed Project would introduce any additional pressure that could worsen conditions relative to the existing baseline.

2857. The hydrological modelling tests the system under varying scenarios, including normal, flood and drought conditions – the latter two being when ecological sensitivity is most prevalent, potentially.
2858. The results demonstrate that the abstraction does not give rise to hydrological changes of a magnitude capable of causing deterioration of any WFD quality element or compromising the achievement of Good Ecological Status or Good Ecological Potential. The WSIAR appropriately assesses the Proposed Project against the current statutory flow regime and demonstrates that the abstraction will not cause deterioration or impede the achievement of WFD objectives.
2859. Any future baseline regime would be decided at a programmatic level, through the River Basin Management Plan (RBMP), national policy or a regulatory process, and is independent of the Proposed Project.
2860. The overall conclusion of the WSIAR is that the abstraction does not limit or prejudice the State's ability to revise compensation flows in the future to achieve a more naturalised flow regime, if this were required.

26.2 Response to General Issues Raised

26.2.1 Compliance with the Water Framework Directive

2861. The following submissions raised concern about general compliance of the Proposed Project with the WFD:

Unique ID	Name of Individual or Organisation
WSP_SUB_02	Fight the Shannon Pipeline
WSP_SUB_16	Joanne Skehan
WSP_SUB_17	Joe Mayo
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_37	Councillor Dr. Phyll Bugler
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_46	Futureproof Clare Environmental CLG
WSP_SUB_56	Lough Derg Mermaids
WSP_SUB_61	Michelle McNamara
WSP_SUB_65	Samuel Norris
WSP_SUB_66	Sarah Conroy
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

26.2.1.1 Applicant's Response

2862. Submissions raised concerns regarding compliance with the Water Framework Directive (WFD), the adequacy of the assessment undertaken, and the application of specific WFD requirements. The

Applicant considers that the Proposed Project is fully compliant with the WFD and that a comprehensive and proportionate WFD compliance assessment has been carried out and presented in the Water Status Impact Assessment Report (WSIAR) and the wider Environmental Impact Assessment Report (EIAR). The Applicant does not agree with the concerns raised and has not identified any deficiencies in the WFD compliance assessment. Issues raised in the submissions, such as low flows, compensation flows and barriers to fish passage are matters to be addressed at a programmatic level, rather than through this Proposed Project.

2863. It must be noted that in addition to the SID planning application for the Proposed Project, an application for an abstraction licence is required under the Water Environment (Abstractions and Associated Impoundments) Act 2022, which will provide for ongoing regulation and control of flows outside of this SID planning application for the Proposed Project.
2864. The assessment applies the correct legal test under Article 4(1) of the WFD, examining whether the Proposed Project may cause deterioration in the status of any surface water or groundwater body, or jeopardise the achievement of good status or good ecological potential. This assessment takes account of baseline conditions, project design parameters, mitigation measures and relevant hydrological scenarios. The WSIAR evaluates potential effects on surface water and groundwater receptors and Annex V quality elements, including lakes, and is informed by detailed hydrological modelling presented in EIAR Appendix A9.1 – Abstraction Assessment. That modelling includes assessment of low-flow and drought conditions and demonstrates that predicted changes in flows and water levels are extremely small and within the natural and operational variability of the system.
2865. The WFD compliance assessment in the WSIAR focuses on project-related effects and realistic pathways of impact, including consideration of indirect and cumulative effects where relevant. The assessment demonstrates that the Proposed Project will not affect the status of a water body or any Annex V quality element and therefore the Proposed Project does not require reliance on the derogation mechanisms under Articles 4(6) or 4(7) of the WFD.
2866. Under Article 4 a project may not be authorised if it would cause deterioration of a water body or prevent the achievement of the relevant environmental objectives, unless the Article 4(7) derogation is applied. This is an objective, evidence-based assessment, not a zero-uncertainty or “beyond reasonable doubt” test.
2867. Assessment of the Proposed Project against WFD objectives is outlined in the WSIAR as part of impact assessments, and then summarised in Section 5.4 (Paragraphs 207 and 208): *“Taking into consideration the anticipated impacts of the Proposed Project on the biological, physico-chemical and hydromorphology quality elements, following the implementation of design and mitigation measures, it is concluded that it would not compromise WFD objectives as cited in Section 1.1 or cause a deterioration in the status of any surface water or groundwater WFD designated water body and/or jeopardise the attainment of good (ecological) surface water, or groundwater status. As there is compliance with all of the WFD objectives, the Proposed Project will not cause a deterioration in the status of any water body and/or jeopardise the attainment of good surface water or groundwater status”*.
2868. Ireland’s obligations to improve water body status under the WFD are delivered through the River Basin Management Plan (RBMP) and the associated Water Action Plan, which set out the national Programme of Measures required to restore water bodies to Good Status. These strategic improvement duties sit at the plan-level, not the project-level. The role of the WSIAR is to ensure that the Proposed Project does not introduce new pressures that would cause deterioration or undermine the achievement of those national objectives. The assessment demonstrates that this requirement is met.
2869. Article 4 requires the prevention of deterioration, the achievement of good status or good ecological potential, and compliance with objectives for protected areas. Where Natura 2000 sites are

hydrologically linked to water bodies, the Article 4 assessment informs the Article 6(3) integrity evaluation. This relationship is recognised and addressed in the WSIAR. Article 4(1)(c) WFD obligations in respect of protected areas, including water-dependent Natura 2000 sites, have been addressed through the integrated application of the WFD compliance assessment and the Appropriate Assessment undertaken under the Habitats Directive. Relevant SACs and SPAs within the Lower River Shannon catchment were identified, and their water-dependent conservation objectives were assessed through the Natura Impact Statement (NIS). The WFD does not require duplication of this assessment within a separate hydrological framework.

2870. The WSIAR has been undertaken in full compliance with the WFD as transposed and applied in Ireland, including the binding effect of CJEU jurisprudence. It does not seek to reinterpret the Directive or to attribute any interpretative authority in EU law to post-Brexit UK guidance.
2871. References to UK Environment Agency guidance are confined to its use as a technical and methodological aid, reflecting well-established and industry-leading WFD principles developed while the UK was an EU Member State and which remain consistent with Common Implementation Strategy (CIS) guidance. Core concepts applied (such as prevention of deterioration, assessment of status and significance, and the use of professional judgment where data are limited) are fully aligned with CIS guidance and the objectives and structure of the Directive.
2872. The assessment is grounded in the legal tests arising from the WFD and CJEU case law, including the obligation to prevent deterioration and to safeguard the achievement of environmental objectives. It follows guidance because there is no statutory methodology. Conclusions are based on the characteristics and status of the receiving water bodies, the nature and scale of the Proposed Project, and the identified impact pathways, not on the provenance of any individual guidance document.
2873. The WSIAR is therefore compliant with Ireland's WFD obligations, compatible with UK and CIS guidance, and consistent with CJEU jurisprudence.
2874. Article 4(1)(c) WFD obligations in respect of protected areas, including water-dependent Natura 2000 sites, have been addressed through the integrated application of the WFD compliance assessment and the Appropriate Assessment undertaken under the Habitats Directive. Relevant SACs and SPAs within the Lower River Shannon catchment were identified, and their water-dependent conservation objectives were assessed through the Natura Impact Statement (NIS). The WFD does not require duplication of this assessment within a separate hydrological framework. Deterioration has been assessed, considering hydromorphological and ecological conditions as well as water levels. No deterioration of any relevant quality element has been identified. The WFD and Habitats Directives have been applied coherently, and the absence of a separately labelled WFD protected-area assessment does not undermine the lawfulness of the conclusions reached.
2875. The Applicant has responded in this Chapter to the specific issues raised in submissions and considers that, taken together, these responses demonstrate that the WFD has been applied correctly, the assessment is adequate to inform decision-making, and no basis has been identified on which non-compliance with the WFD could be substantiated. The following sections in this chapter provide responses to specific issues related to compliance with the WFD.

26.3 Response to Specific Issues Raised in General Observer Submissions

26.3.1 Receiving Wastewater Capacity Assessment Under the Water Framework Directive

2876. The following general observer submission raised specific concerns that the expansion of water supply is not matched by demonstrated wastewater capacity:

Unique ID	Name of Individual or Organisation
WSP_SUB_45	Friends of the Irish Environment

2877. The general observer submission from Friends of the Irish Environment stated that increased potable supply will result in increased wastewater discharge and should be assessed as part of the same set of project effects. The submission continued that assessment under the WFD therefore requires demonstration that receiving waters possess sufficient assimilative capacity to accommodate those additional returns without risk of deterioration.

26.3.1.1 Applicant's Response

2878. Receiving wastewater capacity in the context of the EIA process is addressed in Chapter 12 – Water (General) of this report. While increased potable supply may, in practice, be associated with increased wastewater generation, the abstraction itself does not authorise, control or modify wastewater discharges, nor does it determine wastewater treatment capacity. Accordingly, neither the EIA process nor the WFD requires a catchment-wide water balance that formally links abstraction volumes to regional wastewater discharges where no causal pathway exists by which the abstraction could influence receiving-water status.

2879. Wastewater discharges arising within the Eastern River Basin District are regulated under separate statutory frameworks, primarily the Urban Wastewater Treatment Directive (UWWTD). This requires that discharges are permitted and managed so as to ensure that receiving water bodies have sufficient assimilative capacity and that deterioration of status is prevented. Any discharge of water originating from the project area to receiving waters, including coastal waters on the East Coast, must comply with these requirements and therefore it is not a requirement of the Proposed Project WSIAR.

2880. The capacity of receiving waters has been considered through assessment of the performance and emission limits of relevant wastewater treatment infrastructure, including Ringsend Wastewater Treatment Plant and the predicted emissions associated with the Greater Dublin Drainage Scheme (GDDS). These assessments are not part of the Proposed Project.

2881. In line with this principle, the WSIAR considers whether the Proposed Project could reasonably contribute, either directly or indirectly, to a risk of deterioration in receiving waters. Given that wastewater discharges are subject to independent regulatory controls specifically designed to safeguard assimilative capacity and WFD objectives, and that relevant infrastructure assessments demonstrate compliance with those controls, the Proposed Project does not give rise to a WFD-relevant wastewater pressure or a risk of deterioration when assessed in combination with existing and permitted discharges.

26.3.2 Reliance of the Assessment on Average Flow Metrics

2882. The following submissions raised specific issues relating to the reliance of the WFD on average flow metrics:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_110	Clare County Council

2883. The general observer submission from Councillor Séamie Morris and the River Shannon Environmental Protection Alliance Company Ltd stated that ecological impact under the WFD should be determined by low-flow and drought conditions, not long-term averages.
2884. The general observer submission from Friends of the Irish Environment stated that the assessment relies largely on average river flow conditions. The submission continued that while the documentation acknowledges potential impacts during drought conditions, temporary deterioration must also be assessed under the WFD.
2885. The prescribed body submission from Clare County Council stated that as ecological effects would be most significant during low flow conditions, assessments must be against any predicted low flow conditions.

26.3.2.1 Applicant's Response

Ecological impact under the WFD should be determined by low-flow and drought conditions, not long-term averages

2886. Under the WFD, ecological status is determined by an integrated assessment of biological, physico-chemical and hydromorphological quality elements, reflecting the overall condition and functioning of a water body over time (Annex V). While ecological sensitivity is often greatest during periods of low flow or drought, WFD compliance is not determined solely on the basis of such extreme conditions, but through classification systems and Environmental Quality Standards (EQS) designed to represent average or near worst-case conditions over extended periods.
2887. The hydrological assessment undertaken for the Proposed Project appropriately includes low-flow and drought scenarios to understand system resilience and potential short-term risks. As explained in Paragraph 40 of EIAR Appendix A9.1 - Abstraction Assessment, drought conditions fall outside conventional WFD hydrological assumptions and are not expected to meet EQS targets during such events. Accordingly, drought-scenario results are presented for context and sensitivity testing rather than as formal compliance tests. A 52-year simulation period (1972–2023) was assessed, with the most severe droughts (1995 and 2018) identified as the critical sensitivity cases for the Lough Derg (Derg TN) and Parteen Basin (Derg HMWB) system. Even under these conditions, simulated lake-level changes remain within historical operational variability, established water level operating bands, and existing compensation and fish-pass flow requirements.
2888. The WFD compliance assessment therefore considers whether the Proposed Project could cause deterioration during critical hydrological conditions, rather than relying solely on long-term averages or extreme events in isolation. This approach is consistent with Article 4(1)(a)(i) and Annex V of the WFD. As set out in Paragraphs 166 and 167 of the WSIAR, modelling demonstrates that even under worst-case drought conditions, changes to supporting quality elements such as dissolved oxygen, nutrients and chlorophyll-a are negligible and not capable of causing a deterioration in ecological status. On this basis, the Proposed Project is not predicted to put WFD status at risk.

'The drought modelling serves to understand the resilience of the water body and potential short-term risks posed by the Proposed Project under extreme hydrological stress. It is usual practice for Water Framework Directive (WFD) compliance to be based on long-term hydrological conditions and the use of Environmental Quality Standards (EQS) – typically expressed as mean or 95%ile concentrations – as metrics that are designed to reflect average or near worst-case conditions over extended periods of time. Drought conditions, such as those modelled here, fall outside of the conventional WFD hydrological assumptions and are not expected to meet EQS targets during such events. In order to contextualise the potential impact of a drought, water quality modelling results have been presented using the 95%ile metrics for reference only and are not intended to imply that

compliance with WFD standards is expected or required under drought conditions' [Paragraph 40 of EIAR Appendix A9.1 – Abstraction Assessment].

2889. Further detail on drought sensitivity is provided in Paragraphs 140 and 141 of EIAR Appendix A9.1 - Abstraction Assessment. From the 52-year simulation period (1972–2023), the 1995 and 2018 droughts were identified as the most hydrologically sensitive for the Lough Derg (Derg TN) and Parteen Basin (Derg HMWB) system.

2890. Paragraphs 166 and 167 of the WSIAR take account of drought conditions in relation to biological supporting elements of the Derg HMWB:

'During abstraction, the water level regimes in the WFD designated water bodies are only predicted to be affected during drought and in the days immediately preceding.... Hydrodynamic modelling has demonstrated that in a worst case drought scenario, the Proposed Project would only result in miniscule changes to concentrations of BOD, dissolved oxygen, nutrients and chlorophyll-a. Overall, it is considered that the change in abstraction will not put WFD status at risk' [Paragraphs 166 and 167 of the WSIAR].

2891. Ecological status is an expression of the overall quality and functioning of the water body, not just its performance under drought or low-flow scenarios. Ecological sensitivity is greatest during periods of low flow, when habitat availability, dissolved oxygen, temperature and species mobility are most constrained. Accordingly, WFD assessments and abstraction controls do not rely solely on long-term average flows, but instead place particular emphasis on critical hydrological conditions, including seasonal low flows and drought scenarios (as required by Article 4(1)(a)(i) and Annex V.

2892. In regulatory practice the operational management of an abstraction is conditioned by the Agency, which is the Environmental Protection Agency. This would include protection of ecological status.

Temporary deterioration

2893. Under the WFD, temporary deterioration must be assessed where a project may realistically cause a lowering of the status of a water body, including during drought conditions. Temporary effects do not, of themselves, constitute deterioration unless they are capable of causing a class change in a relevant Annex V quality element. The modelling undertaken for the Proposed Project demonstrates that, even under worst-case drought conditions, predicted changes in flows, water levels and supporting physico-chemical parameters are negligible, remain within historical and operational variability, and are not capable of causing deterioration in ecological or groundwater status.

2894. As no realistic project-related pathway has been identified through which the Proposed Project could cause temporary deterioration within the meaning of Article 4(1) of the WFD, the derogation mechanisms under Articles 4(6) and 4(7) are not engaged. The assessment therefore correctly applies the WFD by considering drought and low-flow conditions to the extent required and by demonstrating compliance with the Directive's core no-deterioration obligation.

2895. Assessment of the Proposed Project against WFD objectives is set out in the WSIAR as part of the impact assessment and summarised in Section 5.4 (Paragraphs 207 and 208), which concludes that, following the implementation of design and mitigation measures, the Proposed Project will not compromise WFD objectives, cause deterioration in the status of any surface water or groundwater body, or jeopardise the achievement of good ecological or groundwater status.

2896. Deterioration occurs where the status of at least one Annex V quality element is lowered by one class, even if the overall classification of the water body remains unchanged; where a quality element is already in the lowest class, any further decline constitutes deterioration. The deterioration test is

therefore class-based and not triggered by any temporary or immaterial change. As the modelling demonstrates that the Proposed Project does not cause a class change during drought or low-flow conditions, deterioration within the meaning of Article 4(1)(a)(i) does not arise.

2897. Accordingly, the absence of a derogation application under Articles 4(6) or 4(7) reflects the conclusion that the legal threshold for deterioration is not met, rather than any omission in the assessment process. Hydrological and hydrodynamic modelling confirms that any predicted changes during drought periods are not status-relevant and are well below thresholds capable of altering the classification of any Annex V quality element.

2898. In summary, drought and low-flow conditions have been assessed in the WSIAR to the extent required by the WFD, the potential for temporary deterioration has been explicitly considered, and it has been demonstrated that the Proposed Project does not cause, exacerbate or contribute to deterioration of water body status.

26.3.3 Compliance with Article 4 Requirements

2899. The following submissions raised specific issues relating to compliance with requirements under Article 4 of the WFD:

Unique ID	Name of Individual or Organisation
WSP_SUB_17	Joe Mayo
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_33	Carol-Anne Murphy
WSP_SUB_38	Councillor Séamie Morris
WSP_SBU_39	Derg Open Water Swim School and the swim group "Lively Wimmin Swimmin
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_48	Garrett Reil and Cliona Geary
WSP_SUB_54	Killaloe Ballina District Angler's Association
WSP_SUB_62	Mountshannon Community Council
WSP_SUB_69	The Lough Derg Anglers Association
WSP_SUB_110	Clare County Council
WSP_SUB_114	Tipperary County Council

2900. The general observer submission from Joe Mayo stated that the legal threshold required under Article 4 of the WFD has not been demonstrated. The submission continued that a grant of consent in the absence of clear evidence addressing the matters identified in this submission would risk misapplication of the Article 4 legal test.

2901. The general observer submission from the River Shannon Environmental Protection Alliance Company Ltd and Councillor Séamie Morris stated that there is a failure to satisfy Article 4(7) WFD derogation requirements in the assessment. The submissions further state that any new abstraction constituting a modification of a water body must satisfy all conditions under Article 4(7) of the WFD and the Proposed Project fails to do so.

2902. The general observer submission from Carol-Anne Murphy stated that, under Article 4 of the WFD, there is a binding obligation to prevent deterioration of the status of any water body and protect and enhance aquatic ecosystems. The submission continued that the proposal does not demonstrate to the standard required, that deterioration will not occur, particularly under projected future drought conditions.

2903. The general observer submission from Derg Open Water Swim School stated that the project breaches EU environmental law and policy by risking deterioration of water quality in Lough Derg, contrary to the Water Framework Directive. Scientific uncertainty remains regarding impacts on protected habitats under the Habitats Directive, heightened by large-scale abstraction and climate change. The risks also conflict with Fáilte Ireland objectives, and the unresolved ecological uncertainty means the Precautionary Principle should apply.
2904. The general observer submission from the Friends of the Irish Environment stated that compliance with the outcome-based obligations of Article 4 WFD has not been transparently demonstrated on the information provided.
2905. The general observer submission from Garrett Reil and Cliona Geary stated that Article 4 of the WFD prohibits deterioration of the status of surface water bodies and requires Member States to achieve good ecological status. The submission continued that the EIAR does not adequately demonstrate that the abstraction, particularly during low-flow periods and in combination with existing abstractions for Ardnacrusha, will not cause deterioration of ecological status in affected water bodies.
2906. The general observer submissions from Killaloe Ballina District Angler's Association and The Lough Derg Anglers Association stated that Lough Derg is classified as a HMWB and the Proposed Project documentation repeatedly references this designation, implying flexibility regarding abstraction. The submission continued that the Proposed Project's abstraction regime would significantly affect flow magnitude and variability, lake level stability in Lough Derg and downstream dilution capacity and floodplain and groundwater interactions. The submission further stated that these parameters are specifically protected under the WFD, even for HMWBs. The submission also stated that there is a failure to meet the requirements of Article 4(7) of the WFD.
2907. The general observer submission from Mountshannon Community Council stated that Article 4 of the WFD imposes a binding obligation to prevent deterioration of the status of any water body and protect and enhance aquatic ecosystems. The submission continued that the Applicant has not demonstrated, to the strict legal standard required, that deterioration will not occur, particularly under projected future drought conditions.
2908. The prescribed body submission from Clare County Council stated that a deterioration assessment is required and given the Water Framework Directive's objective of preventing deterioration, uncertainty regarding potential effects should be resolved. The submission continues that where large-scale abstraction could alter river flows or hydromorphology, a detailed deterioration assessment is required. Failure to conduct this analysis has previously resulted in successful judicial review challenges.
2909. The prescribed body submission from Tipperary County Council stated that the project documentation proceeds on the basis that deterioration will not occur and does not present a structured, sequential Article 4(7) analysis. The submission proceeds on the assumption that Article 4(7) of the Water Framework Directive is engaged, and in particular that the proposal is required to demonstrate compliance with Article 4(7)(d) by reference to alternatives such as large-scale leakage reduction. The prescribed body submission highlights that *'Article 191(2) Treaty on the Functioning of the European Union enshrines the precautionary principle. Where scientific uncertainty exists regarding hydromorphological deterioration, chemical concentration shifts, or subsurface impacts, precaution requires that environmental protection take precedence. The principle of effectiveness (effet utile) in EU law requires that directives achieve their intended practical effect. Approving large-scale abstraction while failing to require infrastructure renewal undermines the practical effectiveness of the WFD's resource protection objectives'*.

26.3.3.1 Applicant's Response

Heavily Modified Water Body

2910. HMWB classification does not provide additional flexibility for abstraction beyond what is already permitted under the WFD. The Applicant disagrees that the repeated reference to this designation implies flexibility regarding abstraction. The HMWB designation simply recognises that certain physical alterations, such as navigation, flood protection, or water supply infrastructure, are essential uses of the water body and cannot be removed without significant adverse impacts. It does not lower the environmental protections that apply to abstraction pressures.
2911. Under Article 4 of the WFD, HMWBs are required to achieve Good Ecological Potential (GEP) and Good Chemical Status, and any development must demonstrate that it does not cause deterioration in either. The Proposed Project WSIAR reflects this requirement and does not rely on HMWB status to justify any relaxation of environmental standards. Instead, it applies the same assessment principles that would apply to any water body, including a detailed evaluation of hydrological impacts, ecological risks, and mitigation measures.
2912. Regarding Article 4(7), the Proposed Project is not assuming automatic compliance based on the HMWB designation. Article 4(7) applies only where a project would cause deterioration or prevent the achievement of GEP. The assessments for the Proposed Project outline that, with the proposed mitigation and operational controls, the Proposed Project will not trigger the Article 4(7) tests, as confirmed in Section 5.1 4 of the WSIAR.

Article 4 and 'reasonable scientific doubt'

2913. Under Article 4 a project may not be authorised if it would cause deterioration of a water body or prevent the achievement of the relevant environmental objectives, unless the Article 4(7) derogation is applied. This is an objective, evidence-based assessment, not a zero-uncertainty or "beyond reasonable doubt" test.
2914. Assessment of the Proposed Project against WFD objectives is outlined in the WSIAR as part of impact assessments, and then summarised in Section 5.4 (Paragraphs 207 and 208): *"Taking into consideration the anticipated impacts of the Proposed Project on the biological, physico-chemical and hydromorphology quality elements, following the implementation of design and mitigation measures, it is concluded that it would not compromise WFD objectives as cited in Section 1.1 or cause a deterioration in the status of any surface water or groundwater WFD designated water body and/or jeopardise the attainment of good (ecological) surface water, or groundwater status. As there is compliance with all of the WFD objectives, the Proposed Project will not cause a deterioration in the status of any water body and/or jeopardise the attainment of good surface water or groundwater status"*.

Legal threshold

2915. A number of the observer submissions state that the legal threshold under Article 4 of the WFD has not been met and that consent would therefore risk misapplication of the Article 4 test. The Applicant does not agree with the observer submissions. Article 4 of the WFD requires that a project must not cause deterioration or undermine the achievement of environmental objectives. That test has been applied and the conclusions meet the legal requirements.

Article 4 and protection of aquatic ecosystems

2916. The Applicant agrees that Article 4 imposes a binding obligation to prevent deterioration of water body status and to protect aquatic ecosystems. The WSIAR applies this legal test directly. The hydrological

and ecological modelling demonstrates that the proposed abstraction does not give rise to changes of a magnitude capable of causing deterioration in any WFD quality element or status class, even under the most precautionary drought scenarios assessed. These scenarios incorporate climate-driven reductions in inflows, extended dry periods and the regulated behaviour of the Shannon system. Submissions refer to a “strict legal standard”. The correct legal test is whether, on the basis of objective information and enforceable operational controls, the project will not cause deterioration. The WFD does not require absolute certainty or the elimination of all hypothetical risk. It requires a precautionary, evidence-based assessment capable of demonstrating that deterioration is not expected to occur. The WSIAR meets this requirement. Accordingly, the assessment demonstrates that deterioration will not occur, including under projected future drought conditions, and the Proposed Project complies with the binding obligations of Article 4 of the WFD.

Failure to satisfy Article 4(7)

2917. Article 4(7) is engaged only where a project would otherwise cause deterioration or prevent achievement of GES or GEP and such effects cannot be avoided. As the WSIAR concludes that the Proposed Project will not give rise to deterioration or compromise WFD objectives when operated under enforceable abstraction controls, the derogation test under Article 4(7) does not arise. It is a *derogation mechanism*, not a general requirement for all proposed development (including abstractions).
2918. The WSIAR demonstrates that the Proposed Project does not cause deterioration in any WFD quality element or status class, nor does it compromise the ability of any affected water body to achieve GES or GEP. Assessment of the Proposed Project against WFD objectives is outlined in the WSIAR as part of impact assessments, and then summarised in Section 5.4 (Paragraphs 207 and 208): *“Taking into consideration the anticipated impacts of the Proposed Project on the biological, physico-chemical and hydromorphology quality elements, following the implementation of design and mitigation measures, it is concluded that it would not compromise WFD objectives as cited in Section 1.1 or cause a deterioration in the status of any surface water or groundwater WFD designated water body and/or jeopardise the attainment of good (ecological) surface water, or groundwater status. As there is compliance with all of the WFD objectives, the Proposed Project will not cause a deterioration in the status of any water body and/or jeopardise the attainment of good surface water or groundwater status”*.
2919. Deterioration occurs only where a quality element drops by one status class or worsens within the lowest class. The modelling and ecological assessment show that no such change arises.
2920. Because the assessment concludes that no deterioration will occur, Article 4(7) is not engaged. This is consistent with EU guidance (CIS guidance) and Irish practice, where Article 4(7) is applied only in cases where deterioration is unavoidable and must be justified. The project documentation proceeds on the basis that deterioration will not occur, and therefore does not present a structured, sequential Article 4(7) analysis.
2921. This approach is consistent with the WFD. Article 4(7), including the alternatives test in Article 4(7)(d), is engaged only where deterioration of status or failure to achieve environmental objectives is accepted or unavoidable. The WSIAR compliance assessment concludes, on the basis of the evidence presented and a precautionary assessment of relevant quality elements, that the proposed abstraction will not cause deterioration and will not compromise the achievement of RBMP objectives for Derg TN or Derg HMWB.
2922. As no deterioration is identified, there is no legal requirement to undertake an Article 4(7) derogation assessment, including the steps set out in CIS Guidance Nos. 20 and 36. The absence of a structured Article 4(7) analysis therefore reflects the fact that no derogation is sought or relied upon, rather than an omission in the application of the Directive. Accordingly, the documentation is structured to demonstrate Article 4 compliance, not to justify an exception under Article 4(7).

2923. The observer submissions from the River Shannon Environmental Protection Alliance Company Ltd and Councillor Séamie Morris assertion that “any new abstraction” automatically constitutes a modification requiring Article 4(7) is incorrect. The WFD does not classify abstractions as modifications per se; the relevant question is whether the abstraction causes deterioration. Where no deterioration occurs, Article 4(7) does not apply. The WSIAR therefore applies the correct legal test under Article 4(1), demonstrates compliance with the prevention-of-deterioration obligation, and shows that the Proposed Project does not trigger the Article 4(7) derogation pathway.
2924. The absence of a separate Article 4(7) assessment reflects correct application of the Directive. The legal requirement is not to demonstrate that deterioration could never occur in any hypothetical circumstance, but to show, on the basis of objective evidence and regulatory controls, that deterioration and prevention of GES or GEP will not occur. That test has been met as documented in the WSIAR for the Proposed Project.

Detailed deterioration assessment

2925. In response to the submission by County Clare Council, deterioration occurs only where a quality element drops by one status class or worsens within the lowest class. The WSIAR applies this legal test directly. No such change is predicted for any biological, physico-chemical or hydromorphological quality element. As a result, the Proposed Project complies with Article 4(1), and Article 4(7) is not triggered.
2926. The observer submission does not identify any gap in the analysis or any evidence that deterioration would occur.
2927. A detailed deterioration assessment is a formal WFD evaluation that tests whether a proposed activity could cause a status-class drop or a worsening within the lowest class for any WFD quality element – this is the content of the WSIAR. The Applicant considers this is what the observer submission is referring to, and for this reason a detailed deterioration assessment is being referred to in this context as the WSIAR.
2928. This requirement stems from Article 4(1) of the WFD, which defines deterioration in legal terms. The WSIAR assessment must therefore examine each relevant quality element (biological, physico-chemical and hydromorphological) and determine whether the Proposed Project could cause a measurable change that meets the legal threshold for deterioration, which has occurred in the WSIAR for the Proposed Project and is outlined in the impact assessment sections of the document.
2929. For proposed abstractions, the deterioration assessment must include a hydrological and hydromorphological analysis. This involves modelling changes to flow magnitude and variability, water levels, residence times, dilution capacity, sediment transport and connectivity. These parameters are essential because they underpin the ecological functioning of rivers and lakes and are explicitly protected under the WFD, including for HMWBs. The analysis must be based on robust data, long-term hydrological records and conservative assumptions.
2930. A detailed deterioration assessment must also evaluate the Proposed Project under sensitive conditions, particularly low-flow and drought scenarios. These periods represent the highest ecological risk and are increasingly important in the context of climate change. The assessment should therefore test the Proposed Project’s effects under both current hydrology and projected future hydrological stressors to ensure that deterioration is not masked by short-term averages.
2931. In addition, the deterioration assessment must consider in-combination effects with existing pressures or regulated operations, such as hydropower schemes or other abstractions. This ensures that the Proposed Project is evaluated within the real operational context of the water body, not in isolation. The

analysis must demonstrate that the incremental effect of the Proposed Project, when added to existing pressures, does not cause deterioration.

2932. Finally, the deterioration assessment must present its findings transparently and link them directly to the WFD legal test. It must show, using objective evidence, that no quality element will drop a status class or worsen within the lowest class. If deterioration cannot be excluded, the project must then proceed to an Article 4(7) derogation assessment. If deterioration is excluded, Article 4(7) is not triggered.

2933. The Applicant has undertaken this as part of the SID application – this is contained in the WSIAR.

Deterioration of status prevention – including drought

2934. It is acknowledged that climate-driven increases in drought severity and frequency are a relevant consideration in assessing compliance with the WFD.

2935. The WFD no-deterioration obligation requires a project to demonstrate that it will not cause deterioration in the status of any quality element of an affected water body, including under reasonably foreseeable conditions such as prolonged low-flow periods. Importantly, this test does not require absolute certainty that no ecological stress will ever occur under all conceivable future scenarios. Rather, it requires a demonstration that the Proposed Project is designed, assessed and regulated so as to prevent deterioration when operated within defined control frameworks, with risks appropriately managed.

2936. While future drought is therefore a critical ecological factor, the WFD does not require prediction of ecological outcomes under every potential extreme, provided that robust and enforceable safeguards are in place. WFD compliance is delivered through a combination of assessment, licensing and adaptive management, rather than static modelling outputs alone.

2937. In Chapter 11 - Water (Hydrological Modelling and Water Levels) of this report, the Applicant confirms that climate change has been taken into account within the assessment. The approach adopted for predicting the effects of future climate change is set out in Section 2.3.2, Attachment E and Attachment F of Annex A - Hydrological Modelling Report to Appendix A9.1 - Abstraction Assessment of the EIAR.

“Image 2.8 and Image 2.9 [in Annex A of Appendix A9.1] present the modelling results with the reasonable worst case 2080s climate change impacts (CC 2080s Lower) included for the baseline (without WSP) and with WSP scenarios for the 1995 and 2018 drought events respectively. The graphs also provide the simulated lake levels without future climate change allowances (shown previously in Image 2.6 and 2.7 [in Annex A of Appendix A9.1]). Therefore, Image 2.8 and Image 2.9 [in Annex A of Appendix A9.1] show the combined effects of both projected future climate change and WSP on simulated lake levels for the two most impactful modelled drought events 1995 and 2018.”

2938. The submission from Garrett Reil and Cliona Geary correctly highlights the ecological sensitivity of low-flow conditions and the existing pressures associated with Ardnacrusha. The WFD does not require new proposals to remedy historic modifications; it requires that additional pressures do not cause further deterioration relative to the existing baseline. The relevant Article 4 question is therefore whether the Proposed Project would, alone or in combination with Ardnacrusha, cause deterioration of a quality element or a change of status class under the current modified regime. Accordingly, the assessment as outlined in the WSIAR provides clear evidence that deterioration will not occur, including under projected drought conditions, and the Proposed Project complies with Article 4 of the WFD.

Prohibition of deterioration and Ardnacrusha

2939. The WSIAR and EIAR explicitly assess the Proposed Project during low-flow and drought conditions, as these represent the periods of greatest ecological sensitivity. The hydrological modelling incorporates long-term flow records, to ensure that the assessment captures the full range of potential low-flow behaviour in the Shannon system.
2940. The observer submission from Garrett Reil and Cliona Geary reference to “in combination with existing abstractions for Ardnacrusha” is also addressed. The Ardnacrusha hydropower scheme is already fully integrated into the baseline hydrology and lake-level regime. The WSIAR therefore evaluates the Proposed Project on top of the existing regulated system, not in isolation. The modelling shows that the incremental effect of the Proposed Project is extremely small relative to the scale of existing regulation and remains well within the range of natural and operational variability.
2941. The WFD prevention-of-deterioration test requires an assessment of whether the Proposed Project would cause a drop in status class or a worsening within the lowest class. The WSIAR demonstrates that no such change arises. Biological, physico-chemical and hydromorphological quality elements remain unaffected at a level capable of causing deterioration, including under the most precautionary low-flow scenarios.
2942. Accordingly, the EIAR and WSIAR do demonstrate, using objective and conservative evidence, that the abstraction (both alone and in combination with existing Ardnacrusha operations) will not cause deterioration of ecological status in any affected water body. The submission does not identify any evidence to the contrary.

Meeting the requirements of Article 4(7)

2943. Article 4(7) is a test for a derogation – it is undertaken after WFD compliance has been undertaken – should a compliance assessment (the WSIAR) conclude that the WFD objective are not met as a result of the Proposed Project.
2944. It may only be applied where a project is predicted to cause deterioration of a water body or prevent the achievement of environmental objectives. It is not a general requirement that applies to all abstractions or all physical modifications. Before Article 4(7) can be considered, the competent authority must first determine whether deterioration will occur.
2945. Where deterioration is predicted, a project can meet the requirements of Article 4(7) by demonstrating that four cumulative conditions are satisfied. First, the deterioration must result from new modifications to the physical characteristics of a water body or from new sustainable human development activities. This requires a clear link between the project and the hydromorphological change.
2946. Second, the reasons for the modification must be of overriding public interest. This involves showing that the project delivers significant public benefits, such as secure drinking water supply, public health protection or climate-resilience, and that these benefits outweigh the environmental costs of the modification.
2947. Third, the same public benefits cannot be achieved by significantly better environmental options. This requires a transparent alternatives assessment, examining technically feasible, environmentally preferable and economically proportionate alternatives, and demonstrating why none of them can deliver the required outcomes with less environmental impact.

2948. Fourth, all practicable mitigation measures must be taken to minimise adverse effects on the status of the water body. This includes design measures, operational controls, monitoring, adaptive management and regulatory conditions that reduce the scale and significance of any unavoidable impacts.

Lough Derg – and dilution capacity

2949. In response to the general observer submissions from Killaloe Ballina District Angler's Association and The Lough Derg Anglers Association, Article 4 of the WFD requires that a project must not cause deterioration of any water body or prevent the achievement of environmental objectives. The WSIAR applies this legal test directly. It evaluates the Proposed Project under the most sensitive hydrological conditions, including future low-flow and drought scenarios, and demonstrates that the proposed abstraction does not give rise to hydrological or ecological changes of a magnitude capable of causing deterioration in any WFD quality element or status class.
2950. The observer submission from Derg Open Water Swim School suggests that scientific uncertainty remains regarding impacts on protected habitats under the Habitats Directive. The NIS addresses this through a site-specific, pathway-based assessment of all relevant European sites, including those hydrologically connected to Lough Derg (Derg TN) – this is not a HMWB, Parteen Basin (Derg HMWB) and the wider Shannon system. The assessment concludes that, with the proposed operational controls, the Proposed Project will not adversely affect the integrity of any European site.
2951. Climate change is explicitly incorporated into the assessment presented in the WSIAR and NIS. They examine future drought and low-flow conditions, which represent the periods of greatest ecological sensitivity. Even under these precautionary scenarios, the modelling shows that the abstraction does not cause deterioration, does not alter lake levels in an ecologically significant way, and does not affect the qualifying interests of protected habitats.
2952. The existence of uncertainty does not, in itself, indicate risk of deterioration. The relevant legal question is whether, on the basis of objective information, deterioration can be excluded. The WSIAR provides that evidence.
2953. Accordingly, the Proposed Project does not breach EU environmental law or policy. It complies with Article 4 of the WFD, satisfies the requirements of the Habitats Directive, and incorporates precautionary safeguards appropriate to the scale and nature of the abstraction. The observer submission does not identify any evidence that deterioration will occur or that the legal thresholds have not been met.

Transparency

2954. The Applicant does not agree with the observer submission from Friends of the Irish Environment. Article 4 of the WFD requires that a project must not cause deterioration of any water body or prevent the achievement of environmental objectives. The WSIAR applies this legal test directly and transparently. It identifies the relevant water bodies, assesses the potential for deterioration using conservative hydrological and ecological modelling, and evaluates the results against the WFD quality elements, including hydromorphology, physico-chemical conditions and biological receptors.

Precautionary Principle

2955. Article 191(2) of the Treaty on the Functioning of the European Union establishes the precautionary principle, which applies where there is credible scientific uncertainty about the risk of serious or irreversible environmental harm. The Applicant does not accept that there is any scientific uncertainty in the assessment undertaken.

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2956. In this case, the assessment has examined potential effects on the relevant quality elements and concludes, on the basis of available evidence, conservative assumptions and a precautionary appraisal of low-flow conditions, that no deterioration is likely to occur.
2957. Where a precautionary assessment demonstrates that a proposal will not cause deterioration or compromise environmental objectives, the precautionary principle does not mandate refusal. Rather, it is given effect through compliance with Article 4 WFD obligations to prevent deterioration and protect objectives, which have been met.
2958. The precautionary principle has therefore been properly applied and does not justify environmental protection being prioritised beyond what is supported by the evidence before the competent authority.

Resource protection objectives

2959. The principle of effectiveness requires EU directives to be applied so as to achieve their intended effect, but it does not require all policy objectives to be delivered through a single project or decision.
2960. In response to Tipperary County Council, the WFD operates through a framework of RBMPs, Programmes of Measures, regulatory controls and project-level assessment. Infrastructure renewal and leakage reduction are core measures pursued through those programmes via separate regulatory and investment mechanisms and are not displaced or undermined by approval of an individual abstraction.
2961. The practical effect of the WFD's resource-protection objectives is secured through the Article 4 obligations to prevent deterioration and protect environmental objectives. Where a project is assessed and found to comply with those requirements, its approval is consistent with the *effet utile* of the Directive.
2962. The submission from Tipperary County Council conflates wider water-efficiency policy with the legal test under the WFD. The Directive does not require supply-side measures to be deferred until all network inefficiencies are eliminated, nor does it mandate infrastructure renewal as a superior alternative where no environmental harm has been identified.
2963. Approving a compliant abstraction proposal, alongside continued leakage reduction and network renewal under the Programme of Measures, is therefore consistent with the WFD's effectiveness and its integrated, basin-level approach.

26.3.4 Reliance on Heavily Modified Water Body Designation

2964. The following submissions raised specific issues relating to reliance of the assessment on a Heavily Modified Water Body designation:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_114	Tipperary County Council

2965. The general observer submissions from the River Shannon Environmental Protection Alliance Company Ltd and Councillor Séamie Morris stated that the assessment places an unlawful reliance on Heavily Modified Water Body (HMWB) designation, and that this HMWB designation does not remove the obligation to prevent deterioration. The submissions continue that the proposed abstraction would effectively eliminate the possibility of restoring the lower course of the Shannon River in the future which is unlawful under EU environmental law breaching the WFD.

2966. The prescribed body submission from Tipperary County Council stated that Lough Derg and the Parteen Basin are recognised as having significant alterations and subject to HMWB designation in the 3rd Cycle RBMP (2022-2027), and it is therefore appropriate for the assessment provided in the Water Status Impact Assessment Report to take account of this.

26.3.4.1 Applicant's Response

Lough Derg and the Parteen Basin

2967. The Applicant agrees with the submission from Tipperary County Council *'that both Lough Derg and Parteen are recognised as being subject to significant hydromorphological alteration'*. However, it is not correct to state that both water bodies are designated as HMWBs in the 3rd Cycle River Basin Management Plan (2022–2027), as Lough Derg does not have HMWB status. As outlined in catchments.ie, the water body name for Lough Derg is Derg TN and for Parteen it is Lough Derg HMWB. As outlined, it is appropriate and consistent with the WFD that the WSIAR takes all designations into account both natural for Lough Derg and heavily modified for Parteen Basin.
2968. The WSIAR is based on the current regulated hydromorphological regime of the system, reflecting the long-standing operational influence of the Ardnacrusha scheme and associated infrastructure. In accordance with Articles 4(1) and 4(3) of the WFD, the compliance assessment for the Proposed Project applies the correct objective of GEP while retaining the obligation to prevent deterioration in status. HMWB designation is treated as a baseline characteristic of the receiving waters, not as an exemption from environmental protection.
2969. The WFD compliance assessment for the SID Planning Application evaluates whether the Proposed Project would cause deterioration relative to the existing HMWB baseline, including under the most sensitive low-flow and drought conditions. The WSIAR concludes that the Proposed Project does not compromise mitigation measures (Water Action Plan 2024 – the Programme of Measures) underpinning HMWB designation, does not deteriorate any quality element relevant to GEP, and safeguards protected area objectives. On this basis, the WSIAR appropriately reflects the classification and objectives set out in the current RBMP.

Unlawful reliance on HMWB

2970. The submissions are correct in stating that designation of a water body as HMWB does not remove the obligation to prevent deterioration under Article 4 of the WFD. Article 4(1) applies equally to natural, artificial and heavily modified water bodies, and the requirement to prevent deterioration and protect chemical status remains fully applicable. HMWB designation does not permit deterioration; rather, in accordance with Article 4(3), it recognises that certain lawful hydromorphological modifications serving specified societal uses cannot reasonably be removed and adjusts the ecological objective from GES to GEP.
2971. The WSIAR applies this framework correctly. It does not rely on HMWB designation to justify additional impact, nor does it treat HMWB status as an exemption from WFD obligations. The conclusion in the WFD assessment as to impact/potential effect would not change if the status of the water body was different. Instead, it applies a status-based no-deterioration test consistent with Article 4(1) and assesses whether the Proposed Project would cause deterioration in any biological, physico-chemical or hydromorphological quality element relevant to GEP. As the assessment concludes that no deterioration would arise, the derogation mechanism under Article 4(7) is not engaged.
2972. Reliance on HMWB designation is not unlawful; it is incorrect also to state that the Applicant infers through the WSIAR that it functions as an exemption from WFD obligations. Article 4(3) expressly provides for HMWB designation, and EU law consistently recognises it as a legitimate mechanism

where certain hydromorphological modifications cannot reasonably be removed. Its purpose is to ensure that ecological objectives remain realistic and enforceable, not to dilute environmental protection.

2973. For HMWBs, the WFD explicitly acknowledges that achieving environmental objectives may involve trade-offs between ecological improvement and other important societal interests, including water supply, flood protection, energy and navigation. The objective of GEP does not relax compliance with WFD standards; rather, it recognises that ecological improvement in heavily modified systems cannot be achieved instantaneously and must proceed through proportionate mitigation measures over successive RBMP cycles. The WSIAR operates within this framework and does not preclude future enhancement, re-designation, or strengthening of objectives through statutory processes.
2974. While EU environmental law allows, in strictly defined circumstances, for projects to be authorised under Article 4(7), subject to appropriate safeguards, the Proposed Project does not rely on any such derogation. It must be noted that authorisation under Article 4(7) can also be referred to as derogations for projects of overriding public interest. Its assessment demonstrates compliance with the WFD's core obligations without recourse to Article 4(7). The fact that the Lower Shannon is a regulated and modified system establishes the baseline against which impacts must be assessed; it does not diminish the obligation to prevent deterioration, but it does define the realistic scope for restoration, which is addressed at programme level through RBMPs.

Statutory Abstraction Licensing

2975. Abstraction under the Proposed Project will be subject to a statutory licensing consent process, separate to the SID Planning Application process, for which the responsible authority is the Environmental Protection Agency (EPA). As part of any statutory licencing consent there is ongoing regulatory control, expressly having regard to environmental protection and WFD objectives. The abstraction licencing regime provides an operational mechanism through which any required environmental measures are enforced, including controls on volumes, flow thresholds, seasonal operation, and compliance monitoring. These controls ensure that abstraction does not undermine the achievement of status.

Foreclosure of the Shannon's future restoration

2976. The submissions' argument that the Proposed Project would unlawfully foreclose future restoration of the Lower Shannon mischaracterises the structure of the WFD. The Directive does not require individual projects to preserve all hypothetical future restoration options irrespective of existing lawful uses and modifications. Instead, it establishes a programme-based system of environmental management, implemented through RBMPs and Programmes of Measures, which balance ecological objectives with recognised specified uses at catchment scale. Decisions on restoration ambition, sequencing and feasibility are made through these higher level, programmatic statutory planning cycles, not through project level proposals.

Poor Status downstream

2977. The Applicant does not agree with the submission's assertion that the application is premature on the basis that a downstream water body, within the Lower River Shannon is currently at Poor Status. The WFD does not prohibit abstraction proposals in water bodies below Good Status. Rather, it requires that a proposal demonstrates that it will not cause deterioration in status or impede recovery towards the applicable WFD objectives, which has been presented in the WSIAR. The presence of a regulated catchment does not impose an obligation on an individual applicant to remediate historic or legacy pressures as a condition of authorisation. Responsibility for addressing such pressures rests with the

coordinated implementation of the Water Action Plan (2024) and its associated Programme of Measures by the relevant public and private actors.

2978. The WSIAR demonstrates that the Proposed Project operates within the existing hydrological regime and does not introduce new pressures capable of altering the current status class of downstream water bodies. Hydromorphological modifications associated with hydroelectric generation and river regulation are long-standing and are appropriately reflected in the baseline against which the Proposed Project has been assessed. While this context does not diminish the obligation to protect downstream water quality or the integrity of Natura 2000 sites, it does define the environmental conditions against which the effects of the Proposed Project must be evaluated.

2979. On that basis, the WSIAR concludes that the Proposed Project does not compromise WFD objectives; safeguards protected area objectives in accordance with Articles 4(1) and 4(3) of the WFD; and no deterioration is predicted to occur and recourse to the derogation provisions of Article 4(7) is not required.

River Basin Management Plan

2980. Ireland's obligations to improve water body status under the WFD are delivered through the RBMP and the associated Water Action Plan, which set out the national Programme of Measures required to restore water bodies to Good Status. These strategic improvement duties sit at the plan-level, not the project-level. The role of the WSIAR is to ensure that the Proposed Project does not introduce new pressures that would cause deterioration or undermine the achievement of those national objectives. The assessment demonstrates that this requirement is met.

26.3.5 Assessment Based on UKTAG Methodology

2981. The following submissions raised specific issues relating to the assessment based on the UKTAG methodology:

Unique ID	Name of Individual or Organisation
WSP_SUB_17	Joe Mayo
WSP_SUB_45	Friends of the Irish Environment
WSP_SUB_114	Tipperary County Council

2982. The general observer submission from Joe Mayo stated that the documentation does not clearly demonstrate that UKTAG lake-level deviation thresholds have been empirically validated against Irish EPA biological class-boundary metrics in this hydrological context.

2983. The general observer submission from Friends of the Irish Environment stated that the Abstraction Assessment (Appendix A9.1) relies on UKTAG standards in assessing hydrological compliance. The submission continued that the proposed abstraction exceeds the UKTAG low-flow percentage benchmarks when measured against the Q95 value presented in the Applicant's own modelling. The submission further stated that, in the absence of a naturalised Q95 calculation, sensitivity classification and river-based UKTAG assessment, compliance with UKTAG river standards has not been demonstrated. If the applicant chooses to rely on UKTAG criteria, it is incumbent upon them to demonstrate that the abstraction meets those criteria for the affected river water bodies. Based on the figures presented, that has not been shown.

2984. The prescribed body submission from Tipperary County Council stated reliance on UK guidance is not interpretatively authoritative.

26.3.5.1 Applicant's Response

UK guidance

2985. The WSIAR has been undertaken in full compliance with the Water Framework Directive as transposed and applied in Ireland, including the binding effect of CJEU jurisprudence. It does not seek to reinterpret the Directive or to confer interpretative authority on post-Brexit UK guidance.
2986. UK Environment Agency guidance is referenced solely as a technical and methodological aid, reflecting established WFD principles developed while the UK was an EU Member State and which remain consistent with Common Implementation Strategy (CIS) guidance. Core concepts applied—such as prevention of deterioration, status assessment, significance of effects and the use of professional judgment—are fully aligned with CIS guidance and the structure and objectives of the Directive.
2987. The assessment is grounded in the legal tests arising from the WFD and CJEU case law, and its conclusions are based on the characteristics and status of the relevant water bodies, the nature and scale of the proposed works, and identified impact pathways, rather than the provenance of any individual guidance document. UK guidance is cited only where it provides practical clarity in areas where CIS guidance is necessarily high-level, and the outcomes would be unchanged if CIS guidance alone were referenced.
2988. The Water Status Impact Assessment Report is therefore consistent with Ireland's obligations under the WFD, compatible with CIS guidance, and aligned with CJEU jurisprudence.

UKTAG

2989. The WSIAR has been undertaken in full compliance with the WFD as transposed and applied in Ireland, including the binding effect of CJEU jurisprudence. It does not seek to reinterpret the Directive or to confer interpretative authority on post-Brexit UK guidance.
2990. UKTAG lake-level deviation thresholds are recognised as precautionary hydrological indicators developed for UK conditions and are referenced in the EPA's Methodology to Assess and Identify Significant Abstractions in Ireland. UKTAG thresholds are not used to define WFD ecological status or deterioration. They are not statutory standards in Ireland, nor are they intended to operate as biological class-boundary metrics. In Ireland, WFD status classification and deterioration assessment are based on EPA biological quality elements and supporting conditions, in accordance with Annex V of the Directive. Hydrological parameters, including lake-level variation, are supporting elements rather than determinative criteria.
2991. Therefore, UKTAG lake-level deviation thresholds have not been empirically calibrated against Irish EPA biological class-boundary metrics as, such calibration is not required for WFD compliance. The assessment does not rely on UKTAG thresholds to determine ecological status; they are used as precautionary indicators within a broader Irish WFD compliance framework centred on biological monitoring and the prevention of deterioration.
2992. The reliance on UKTAG as a technical reference does not render the WFD compliance assessment (WSIAR) defective, nor does it prevent the competent authority from concluding that the abstraction will not cause deterioration. As stated in EIAR Appendix A9.1 – Abstraction Assessment, paragraph 108: *'The simulations also provide the information required to apply the UK Technical Advisory Group (UKTAG) WFD lake level test, which has been discussed with the EPA as being an appropriate test in the absence of an Irish WFD lake level test.'* The Proposed Project passed the UKTAG test.

Q95

2993. As the abstraction is from a lake waterbody, the assessment of impact is focused on the impact of the abstraction on the littoral zone flows, and an assessment relating to Q95 thresholds is not relevant. This is further reinforced by the EPA's Methodology to Assess and Identify Significant Abstractions in Ireland.

EIAR Appendix A9.1 verifies that with the proposed abstraction the Derg TN (Lough Derg) and the Derg HMWB (Parteen Basin) water bodies meet the lake level requirements for the WFD Good status (Potential) standard. In summary, while the submission correctly notes that UKTAG provides a recognised technical framework for screening hydrological alteration in a UK regulatory context, there is no requirement under the WFD to assess abstraction impacts against UKTAG benchmarks, nor to demonstrate compliance with UKTAG low-flow percentage criteria. On this note, the UKTAG test that was undertaken for the Proposed Project fulfils the requirements of the WFD and on this basis it is a pass for good status.

2994. Accordingly, the absence of an Irish version of UKTAG sensitivity classification or naturalised Q95 calculation is not a deficiency. It reflects the fact that such tools are not required, not determinative, and not part of the Irish WFD assessment framework – in fact UKTAG is universally recognised by other Member States and forms part of other European WFD. The conclusions of the WSIAR are therefore based on the correct legal and technical tests and provide a sound and sufficient basis for determining WFD compliance.

26.3.6 Reflection of the Water Cycle in the Assessment

2995. The following general observer submissions raised specific issues relating to how the water cycle was reflected in the assessment:

Unique ID	Name of Individual or Organisation
WSP_SUB_17	Joe Mayo
WSP_SUB_45	Friends of the Irish Environment

2996. The general observer submission stated that, under the WFD, assessment must take place at catchment scale and across the full cycle of abstraction, use and return flows. The submission continued that consideration of individual elements in isolation risks overlooking cumulative effects within the same hydrological system. The submission further stated that the WFD requires assessment capable of demonstrating compliance with outcome-based obligations rather than reliance on significance classifications alone.

26.3.6.1 Applicant's Response

2997. The Applicant notes the points raised in the submission, but they do not reflect the requirements of Article 4 or established WFD practice.
2998. The Applicant has undertaken the WSIAR using best practice and experience. The WFD does not prescribe how an assessment must be structured or require that abstraction, treatment and distribution be analysed as a single integrated engineering system. The engineering configuration of the Proposed Project is not the organising principle of a WFD compliance assessment. What matters is whether any element of the Proposed Project gives rise to a pathway of impact on a water body. Where no such pathway exists, it is entirely appropriate, and consistent with proportionality, to assess components separately. Given that the WSIAR has been based on the experts' completion of other assessments for other schemes across the UK and Ireland, where the assessment is divided into "activities" (engineering components), this is an adequate and accepted way to assess the Proposed Project.
2999. The Applicant disagrees with the submission's implication that significance ratings are required. There are no significance ratings in the WFD that would be associated with EIA methodology. The WFD assessment does not rely on significance classifications, nor is such an approach required under the WFD. The legal test is whether the proposal avoids deterioration and does not compromise the achievement of environmental objectives.

3000. The WFD does not require assessment across the full cycle of abstraction, use and return flows, nor does it mandate a catchment-wide analysis. It only requires an evaluation of potential impacts on the specific water bodies concerned in order to test no deterioration and support environmental objectives. It is therefore appropriate and proportionate to focus the assessment in the manner that it has, as presented in the WSIAR.
3001. Proportionality is central to WFD implementation. The Directive does not prescribe a cumulative assessment beyond what is scientifically relevant to the water bodies concerned. Where only one component of a project (e.g. abstraction) creates a hydrological interaction with a water body, it is entirely appropriate to focus the assessment on that component, for example. Treatment and distribution infrastructure do not create additional pressures on water bodies and therefore do not require WFD analysis beyond confirming the absence of pathways. The Applicant has produced a catchment-wide analysis by identifying water bodies to be assessed, described the upstream/downstream impacts and any pathways to the receptor as a result of the Proposed Project and undertaken a cumulative impact assessment. There is no specific requirement to assess everything in a catchment where that would be disproportionate to the activities assessed as part of the Proposed Project.
3002. The Directive also does not impose a blanket requirement for a cumulative assessment beyond what is necessary to determine whether the proposal may cause deterioration or risk the achievement of environmental objectives for the relevant water body. Cumulative effects have been assessed (included in Section 5.3 of the WSIAR). Professional judgement has been used on what has a plausible pathway of impact, and how other schemes may interact with the Proposed Project. The Applicant has looked at the water bodies that may be affected and the pathways through which impacts could arise from the Proposed Project to other schemes and vice versa. This approach complies with the WFD legal requirements.
3003. Whilst undertaking the impact assessment for the WSIAR, there is cognisance that multiple project activities in individual water bodies would create their own cumulative impacts also. Whilst this is likely to happen, any impacts would reduce over time enabling each individual water body to return to conditions within the range of compliance for each quality element. It is recognised that smaller, more sensitive water bodies with a greater number of project activities may take longer to return to normal. Whatever impacts are likely to occur, with appropriate mitigation in place, there would be no change that would risk failure to comply or cause deterioration as a result of cumulative impacts.
3004. Paragraphs 205 and 206 in the WSIAR state:

‘The projects screened in for the cumulative impact assessment for water in Chapter 21 are listed in Table A21.2.3 of EIAR Appendix A21.2 and typically comprise renewable energy schemes (solar or wind farms) and flood relief schemes. A review of the Natura Impact Statement (NIS), particularly Section 8.1.2 and 8.1.3 (Table 8.2) also confirms that plans will not conflict with the conclusions of this compliance assessment. Typical plan include the Water Action Plan 2024, which is considered as part of this WFD assessment in any case, The National Water Resources Plan (Uisce Éireann 2021) and also The National Catchment Flood Risk Assessment and Management Study Programme (CFRAM) have also been considered. In conclusion, these plans pose no identifiable risk of conflicting with the WFD compliance.’

‘Professional judgement has been used to review the listed schemes, and it has been concluded that there will be no cumulative impacts arising from the Proposed Project activities in combination with the other project activities to the screened in WFD designated water bodies on a water body scale. This is because construction impacts will be mitigated and mitigated for operation where required.’

26.3.7 Integrated Catchment Management

3005. The following general observer submissions raised specific issues relating to integrated catchment management:

Unique ID	Name of Individual or Organisation
WSP_SUB_17	Joe Mayo
WSP_SUB_45	Friends of the Irish Environment

3006. The general observer submission stated that water supply expansion cannot be considered separately from catchment pressure and that implementation of the WFD depends on measures linked to individual water bodies and identified pressures. The submission continued that while future regional offtake connections would be subject to separate consenting processes, the environmental assessment must still consider the system-wide consequences of enabling increased supply capacity.

26.3.7.1 Applicant's Response

3007. The submission argues that the Proposed Project, including future regional offtakes, wastewater capacity and wider system behaviour, must be assessed collectively under the WFD. It is the professional opinion of the Applicant that this does not reflect the requirements of the Directive. A WFD compliance assessment requires a proportionate, effects-based and water-body-specific assessment, focused only on pressures arising from the Proposed Project that have a plausible hydrological pathway to the water bodies under consideration.

3008. Redistribution of treated water within the Greater Dublin Area, future regional offtakes and wastewater discharges in distant catchments have no hydrological connection to the abstraction water body. Wastewater discharges are regulated under separate statutory regimes, including the Urban Waste Water Treatment Directive and individual discharge authorisations.

3009. Construction and operational elements such as the pipeline, watercourse crossings and the water treatment plant are assessed within the EIAR and, where relevant, in the WSIAR for the individual water bodies they interact with. However, these components do not influence the hydrology or status of the abstraction water body and are not relevant to the Article 4 assessment.

3010. The WFD compliance assessment for the Proposed Project did not require system-wide modelling of regional supply or wastewater infrastructure as no hydrological interaction exists. Broader regional supply planning, including sequencing of infrastructure and future offtake development, will be addressed through separate statutory planning consenting processes.

26.4 Response to Specific Issues Raised by Prescribed Bodies

26.4.1 Assessment Against Various Climate Change Scenarios

3011. The prescribed body submission from An Taisce raised specific concerns relating to the assessment of the proposed abstraction against various climate change scenarios:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce

3012. This prescribed body submission stated that climate change will have increasingly significant impacts on water and rainfall levels around the country.

26.4.1.1 Applicant's Response

3013. Climate change is expected to influence rainfall patterns, hydrology and water availability across the country. These considerations are fully acknowledged within the WSIAR. The WFD compliance

assessment incorporates the most up-to-date national climate projections and hydrological modelling to ensure that the abstraction is sustainable under a range of future climate scenarios.

3014. The WFD compliance assessment is required to determine whether the specific pressures arising from the Proposed Project may cause deterioration in the relevant water bodies. Climate change is a background, catchment-wide pressure that is addressed through national river basin management planning and long-term adaptation strategies.
3015. The WSIAR evaluates the abstraction under both current and future hydrological conditions, including reduced flows associated with projected climate change. The analysis demonstrates that the abstraction remains compliant with WFD requirements under these scenarios, with no predicted deterioration in status.
3016. Accordingly, while climate change is an important strategic consideration for national water resources planning, it does not introduce additional WFD-relevant pressures arising from this Proposed Project beyond those already assessed.
3017. With regards to the assessment of the proposed abstraction against various climate change scenarios, the EIAR fully assesses the potential effects of the Proposed Project on water levels in the Parteen Basin (and Lough Derg) once operational. This assessment is presented in EIAR Chapter 9 – Water, supported by Appendix A9.1 – Abstraction Assessment, and informed by the hydrological modelling contained in Annex A - Hydrological Modelling Report of Appendix A9.1.
3018. As outlined in Section 2.2.4 of the Hydrological Modelling Report, the model evaluates three hydrological scenarios:
- Flood conditions;
 - Normal (non-flood, non-drought) conditions; and
 - Drought conditions.

Normal conditions

3019. Under normal flows, ESB maintains the minimum compensation flow down the Old River Shannon, and the abstraction would be facilitated from water that would otherwise be used for power generation. Paragraph 290 of EIAR Chapter 9 confirms that ESB will continue to operate Lough Derg and Parteen Basin within the existing Normal Operating Band for Lough Derg, and within the upper and lower water levels for Parteen Basin, as it normally does, and that day-to-day water level behaviour will remain effectively unchanged.

Flood conditions

3020. During flood events, Ardnacrusha operates at full capacity and excess flows pass down the Old River Shannon as they do at present. As described in Paragraph 291 of EIAR Chapter 9, the abstraction would be met from a minor depletion in lake storage, with no change to flows down the Old River Shannon.

Drought conditions

3021. Under drought conditions, ESB ceases power generation, meaning abstraction cannot be met from generation flows. The Proposed Project therefore results in an additional drawdown relative to baseline conditions. This is the only scenario where a change arises that could affect the environment, and it forms the focus of the assessment.

3022. The Proposed Project does not alter, constrain or influence the statutory compensation flow regime. ESB will continue to manage and comply with all compensation flow requirements through its established operating procedures, exactly as it does at present, and will implement any future statutory flow obligations independently of the abstraction.
3023. In the EIAR, section 6.1.1.2 of Appendix A9.1 – Abstraction Assessment identifies 1995 and 2018 as the most sensitive drought events within the 52-year simulation period (1972–2023). Other droughts (1976, 1989, 2006, 2010) produced negligible differences in simulated lake levels. For the 2018 drought, the maximum simulated difference in lake level at the lowest drawdown point is 65mm for the 154Mld scenario and 134mm for the 300Mld scenario. Even under these conditions, simulated lake levels remain within the Lough Derg Normal Operating Band and within ESB's upper and lower operating levels for Parteen Basin, with no change to compensation or fish pass flows.

Climate change

3024. The hydrological model incorporates flexibility to assess future climate impacts. A precautionary "reasonable worst-case" 2080s climate scenario was applied. In the EIAR, section 5.4 of the Hydrological Modelling Report (Annex A of EIAR Appendix A9.1 – Abstraction Assessment) shows that, during the 2018 drought, the maximum simulated difference between the 300Mld scenario and baseline increases to 168mm under the 2080s Lower climate projection. Even under this combined worst-case scenario, lake levels remain within ESB's normal operating band for Lough Derg, and within the upper and lower water levels that ESB applies on Parteen Basin, and compensation and fish pass flows are maintained.

Environmental flows (Eflows)

3025. The modelling includes sensitivity analysis of the CDM Smith Study, proposed Eflows regime, based on the following assumptions:
- No freshets during spill periods (flood periods);
 - No artificial freshets during drought, as these would introduce non-natural hydrological behaviour; and
 - Continuation of the existing 0.5m³/s fish pass flow at Ardnacrusha.
3026. In the EIAR, Images 2.10 and 2.11 (Annex A, Appendix A9.1) illustrate the effects of the Proposed Project with and without Eflows. The modelling concludes that, even under the combined effects of the 300Mld abstraction and the 2080s climate scenario, the Eflows regime does not produce perceptible changes to simulated lake levels during the worst-case 2018 drought.
3027. On this basis, namely that Eflows and fish passage requirements are met from generation flows under normal conditions, and that freshets are not characteristic of drought periods, the assessment demonstrates that the Eflow regime would not be impeded by the Proposed Project. The hydrological modelling, including consideration of Eflows, is further addressed in Chapter 11 – Water (Hydrological Modelling and Water Levels) of this report.
3028. These modelling results directly inform and support the conclusions of the WSIAR.

26.4.2 Adequacy of the Water Framework Directive Assessment for Potential Impacts on Fish

3029. The prescribed body submission from IFI raised a specific issue relating to the adequacy of the WFD assessment in its analysis of the potential impact of the Proposed Project on fish and their habitats:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)

3030. This prescribed body submission stated that the WFD assessment is inadequate in its analysis of the Proposed Project on fish and their habitats. Their submission continues that, while work has been and is ongoing to assess and mitigate barriers in Ireland, there is adequate information in the published literature on the impact of barriers, fish swimming abilities and the species present in the Shannon system to make an assessment of the impact of the abstraction on these species. The submission further stated that the WFD assessment should be strengthened to fully assess the potential impacts of this abstraction on fish species present and habitat.

26.4.2.1 Applicant's Response

3031. Fish are acknowledged as a key Biological Quality Element (BQE) under the WFD, and it is recognised that abstractions, hydrological alteration and physical structures can, in principle, affect fish migration, distribution and habitat availability. The WFD compliance assessment (WSIAR) has therefore considered fish explicitly through identification of relevant impact pathways rather than relying solely on quantitative fish index data. In Ireland, water-body-specific fish BQE datasets are not published on Catchments.ie and are not consistently available to support individual WFD compliance assessments. Consequently, the baseline condition for fish has been established using the best available evidence, including:

- The ecological baseline and impact assessment in EIAR Chapter 8 - Biodiversity;
- The NIS, which identifies fish species present or likely to occur, their migratory behaviour, habitat requirements and sensitivities; and
- EPA ecological status classifications and associated pressure assessments, which integrate the condition of monitored biological elements and supporting hydromorphological and physico-chemical parameters.

3032. Referral to the NIS and EIAR Biodiversity chapter does not represent a gap in the assessment; rather, it reflects accepted WFD practice where fish BQE datasets are unavailable and where the assessment must rely on ecological evidence capable of identifying risk of deterioration. Therefore, the adequacy of the WFD compliance assessment as presented in the WSIAR is not undermined by the lack of a fish BQE dataset.

3033. The Applicant agrees with the observer submission that there is extensive literature on the impacts of barriers and flow alteration on fish. The relevance of this literature depends on the presence of a project-specific pathway linking the Proposed Project to such effects. The WFD assessment demonstrates that:

- The Proposed Project does not alter flow regimes, ecological flows or hydrological connectivity within the receiving water bodies;
- No new physical barriers to fish passage are introduced;
- Habitat availability, sediment processes and water quality conditions critical to fish are not affected; and
- There is no interaction with known migration routes, spawning grounds or refuge habitats.

3034. Accordingly, although general fisheries literature confirms the sensitivity of fish to abstraction and barriers, such effects are not applicable in this case because the necessary hydrological or physical change mechanisms do not arise.

3035. EPA ecological status classifications already reflect the combined influence of existing pressures on biological elements, including fish where relevant. These classifications inform the Programme of

Measures set out in the RBMP, which includes actions addressing fish passage, abstraction pressures and hydromorphological modification.

3036. The Proposed Project does not introduce new pressures, exacerbate existing pressures, or interfere with the implementation of these measures. It therefore cannot cause deterioration in fish status or prevent the achievement of WFD objectives. The WFD compliance assessment demonstrates that, in the absence of any credible impact pathway, the Proposed Project cannot adversely affect fish species or their habitats. On this basis, no deterioration of the fish BQE is predicted, and the conclusion of WFD compliance remains robust.
3037. Potential impacts on fish, including relevant embedded design mitigation measures, is further addressed in Chapter 10 – Biodiversity of this report.

26.4.3 Transfer of Water Between River Catchments and Article 4(8) Basin Integrity

3038. The following prescribed body submissions raised a specific issue relating to compliance of the transfer of water between catchments with the WFD:

Unique ID	Name of Prescribed Body
WSP_SUB_88	Inland Fisheries Ireland (IFI)
WSP_SUB_114	Tipperary County Council

3039. This prescribed body submission from IFI stated that the Proposed Project involves the transfer of water between river catchments, and that clarification should be sought to determine if this is compliant with the WFD.
3040. The prescribed body submission from Tipperary County Council states that the project involves abstraction from the Shannon River Basin District to supply the Eastern and Midlands Region. The WFD is founded on river basin management principles. Article 4(8) requires that measures implemented do not compromise achievement of objectives elsewhere in the river basin district. The submission continues that the documentation does not clearly demonstrate that abstraction during critical flow periods will not compromise the Shannon basin's Programme of Measures under the Water Action Plan 2024. Nor does it address whether cumulative abstraction, climate change variability and extreme drought modelling have been stress-tested against basin-level objectives.

26.4.3.1 Applicant's Response

3041. The Applicant notes the submission comment regarding the potential for the Proposed Project to constitute an inter-catchment transfer. However, this matter does not fall within the scope of the WSIAR.
3042. Under the WFD, the purpose of a compliance assessment is to determine whether a proposal may cause deterioration in the status of any affected water body or compromise the achievement of environmental objectives. The WSIAR therefore focuses on the water bodies hydrologically connected to the abstraction and on whether the abstraction could affect their ecological or chemical status. The WSIAR is not required, in line with the WFD, to determine, and does not determine, whether the engineering configuration of the scheme constitutes a “transfer” for the purposes of abstraction licensing.
3043. Whether the project constitutes an inter-catchment transfer, and whether such a transfer is permissible, is not a WFD compliance question in itself. It should be pointed out that the abstraction licensing process entails the competent authority considering the legal, hydrological and operational conditions under which water may be abstracted and transferred. That licensing process is the mechanism through which compliance with national legislation governing water transfers is assessed.

3044. For clarity, the WFD does not prohibit inter-catchment transfers. However, it requires that any such transfer complies with the Directive’s core environmental objectives, in particular the prevention of deterioration and the achievement of GES or GEP in all affected water bodies.

Article 4(8)

3045. The Proposed Project documentation proceeds on the basis that abstraction during critical flow periods will not compromise the Shannon Basin Programme of Measures under the Water Action Plan 2024 and is therefore focused on demonstrating compliance rather than undertaking basin-wide stress testing.
3046. The assessment considers abstraction under low-flow conditions. As the abstraction introduces no new pollutant pressures, does not alter pressure pathways, and does not result in deterioration or failure of objectives at water-body level, it does not undermine basin-wide measures.
3047. Cumulative abstraction pressures are addressed through RBMPs and EPA licensing at basin scale. The project-level assessment is therefore appropriate and site-specific, examining whether the proposal would materially contribute to cumulative impacts. No such contribution has been identified.
3048. Climate variability and extreme drought have been addressed through a precautionary low-flow assessment using conservative assumptions. In the absence of any identified risk of deterioration or objective failure, basin-level climate stress-testing of Programme of Measures delivery is not required for individual projects.

26.4.4 Compliance of the Proposed Abstraction with the Water Framework Directive

3049. The following prescribed body submissions raised a specific issue relating to compliance of the proposed abstraction with the WFD:

Unique ID	Name of Prescribed Body
WSP_SUB_112	Limerick County Council
WSP_SUB_114	Tipperary County Council

3050. The prescribed body submission from Limerick County Council stated that members of Limerick County Council queried whether the extraction planned aligns with the WFD and EIA and if it should include a fully integrated catchment assessment. The submission continued that the report does not acknowledge that Ireland is legally required under the WFD to improve, not merely maintain, ecological status.
3051. The prescribed body submission from Tipperary County Council stated that impact of the Proposed Project on the WFD cannot be fully assessed given the uncertainty regarding the data used for the modelling exercise and ACP should therefore consider this as part of a more detailed assessment of the Proposed Project. The prescribed submission also raised concern documentation does not clearly demonstrate that abstraction of up to 3.47m³/s during drought periods will not affect hydromorphological conditions, nutrient dynamics, temperature stratification, residence time, or downstream ecological supporting conditions in Derg TN or Derg HMWB.

26.4.4.1 Applicant’s Response

Alignment of WFD/EIA

3052. With respect to the WFD, compliance has been assessed through the WSIAR. The purpose of the WSIAR is to determine whether the abstraction could cause deterioration in the status of any affected

water body or prevent the achievement of environmental objectives. The WSIAR focuses on the water bodies hydrologically connected to any of the proposed activities set out within the application for the Proposed Project and evaluates the proposal against the requirements of Article 4 of the WFD and relevant CIS guidance. The assessment concludes that the Proposed Project will not result in deterioration of ecological or chemical status and will not compromise the achievement of GES or GEP. The Proposed Project is therefore compliance with the WFD.

3053. The EIAR provides a comprehensive assessment of all likely significant environmental effects arising from the construction and operation of the Proposed Project. The EIAR has been prepared in accordance with the EIA Directive (2014/52/EU) and the relevant national transposing regulations. The EIAR identifies mitigation measures, to avoid or reduce likely significant effects occurring from the Proposed Project.
3054. Accordingly, the Proposed Project has been assessed in full under both the WFD and the EIA Directive, and the documentation submitted demonstrates compliance with the requirements of both legislative frameworks.

Fully integrated catchment assessment requirement

3055. A fully integrated catchment assessment is not required for the purposes of determining compliance. WFD requires a proportionate, effects-based and water-body-specific assessment, focused on the pressures arising from the project and the water bodies to which those pressures have a plausible hydrological pathway. Broader catchment-wide issues, including long-term water resources planning, climate adaptation and cumulative pressures, are addressed through the RBMP (Water Action Plan 2024) and national water services planning processes – not through the WSIAR for an abstraction proposal.

Ireland's legal Obligations

3056. Ireland's legal obligation under the WFD is fully recognised within the national RBMP framework (the Water Action Plan 2024) which sets out the measures required to restore water bodies to GES or GEP where they are currently below those objectives.
3057. The purpose of the WSIAR is different. Under Article 4 of the WFD, the WSIAR must determine whether the specific pressures arising from the Proposed Project could cause deterioration in the status of any affected water body or prevent the achievement of environmental objectives. The WSIAR therefore assesses whether the abstraction would cause deterioration in ecological or chemical change or compromise the ability of the relevant water bodies to reach GES or GEP.
3058. The WSIAR does not replace, duplicate or reinterpret the national RBMP, which is the mechanism through which Ireland identifies and implements the measures required to improve water body status. Instead, the WSIAR ensures that the Proposed Project does not introduce new pressures that would undermine those improvement obligations. The WFD compliance assessment concludes that the Proposed Project alone (or in combination) will not result in deterioration and will not compromise the achievement of GES or GEP in the relevant water bodies. As such, the Proposed Project is compliant with the WFD and does not impede Ireland's wider statutory obligations to improve water body status under the RBMP.

Data uncertainty and full assessment

3059. Regarding uncertainty in the hydrological modelling and the suggestion that a more detailed assessment is required, the WSIAR has fully addressed this issue. The WSIAR demonstrates, on the basis of site-specific hydrological and ecological assessment, that the Proposed Project can operate

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without causing deterioration, including during low-flow and drought conditions when ecological sensitivity is greatest. These conditions form a central part of the assessment baseline and are tested in the modelling and impact evaluation.

3060. All modelling used in the WSIAR is based on the best available hydrological and ecological data, including long-term flow records and calibrated lake-level simulations designed to capture uncertainty. The WFD does not require absolute certainty or the elimination of all modelling uncertainty. Instead, it requires a robust, precautionary and evidence-based assessment, supported by enforceable operational controls capable of preventing deterioration. The test is whether deterioration can be excluded on the basis of the best available evidence, not whether uncertainty can be eliminated entirely.
3061. The assessment includes detailed evaluation of the most sensitive hydrological conditions, particularly low-flow and drought scenarios, where ecological effects would be most likely to arise. The modelling demonstrates that, even under these conservative scenarios, the Proposed Project does not give rise to hydrological changes of a magnitude capable of causing deterioration of any WFD quality element or status class.
3062. Accordingly, the WSIAR provides a robust, proportionate and legally compliant demonstration of alignment with Article 4 of the WFD at the project consent stage. A more detailed or catchment-wide assessment is not required to determine WFD compliance for the Proposed Project.

Abstraction implications

3063. The assessment explicitly recognises that Derg TN is classified as Moderate and “At Risk” under the RBMP and, accordingly, applies a precautionary approach consistent with the WFD. The abstraction regime has been evaluated in the context of seasonal low-flow conditions. The proposed abstraction will not cause deterioration in any quality element and will not compromise the attainment of environmental objectives for either Derg TN or Derg HMWB, notwithstanding the At Risk status of the water body.

26.4.5 Compliance of the Flow with the Water Framework Directive

3064. The following prescribed body submissions raised concerns about the compliance of the assumed 10m³/s flow with the WFD:

Unique ID	Name of Prescribed Body
WSP_SUB_80	An Taisce
WSP_SUB_110	Clare County Council
WSP_SUB_112	Limerick County Council

3065. The prescribed body submission from An Taisce states that climate modelling used in the abstraction assessment uses the existing water management regime, including the current 10m³/s compensation flow and assumes this will remain in place as the baseline condition, however, this existing water management regime has not been assessed against legal obligations under the WFD. The submission further stated that the assessment of the proposed abstraction has not considered whether or not this would impact the achievement and maintenance of at least good water quality status under the WFD.
3066. The prescribed body submission from Clare County Council stated that clarification is needed on whether the minimum flow rate of 10m³/s is compatible with the Qualifying Interests of the Lower River Shannon SAC achieving favourable ecological status.

3067. The prescribed body submission from Limerick County Council stated that there is an assumption that maintaining 10m³/s down the Old River Shannon is sufficient but that this was set almost a century ago and it is the legal minimum not the flow required to comply with the WFD and the River Basin Management Plan.

26.4.5.1 Applicant's Response

Compatibility of the minimum flow

3068. The compatibility of the minimum flow rate with the Qualifying Interests of the Lower River Shannon SAC has been specifically addressed within the NIS and is reflected in the WSIAR. The appropriate question under both the Habitats Directive and the WFD is whether the Proposed Project, individually or in combination with other pressures, would undermine the conservation objectives of the Lower River Shannon SAC or prevent the maintenance of favourable conservation status.
3069. The minimum flow of 10m³/s represents an enforceable ecological flow safeguard, derived to protect downstream habitats and species during the most sensitive low-flow conditions. The NIS concludes that this regulated flow regime, including the Proposed Project abstraction, does not adversely affect habitats or species for which the SAC is designated and is therefore compatible with the conservation objectives of the site.
3070. The WSIAR is not reliant on the historic 10m³/s minimum as a proxy for WFD compliance. The assessment evaluates the Proposed Project against the current regulated flow regime, including the 10m³/s minimum, because this regime forms the existing hydrological baseline within which all ecological receptors have developed and are currently assessed under both the WFD and the RBMP. The WFD does not require project-level assessments to redesign or re-determine historic operational rules; it does, however, require that new proposals do not cause deterioration relative to the existing baseline and do not compromise the achievement of environmental objectives.
3071. The modelling demonstrates that the abstraction does not alter flows to a degree capable of causing deterioration, including during the most sensitive low-flow and drought conditions.
3072. The compatibility of the regulated flow regime (including the 10m³/s minimum) with ecological requirements is addressed through the RBMP. The WFD does not require individual projects to revisit or replace RBMP-level flow objectives; it requires that projects do not worsen the existing situation or impede progress towards RBMP targets. The assessment concludes that the Proposed Project does neither.

Maintenance of 10m³/s

3073. The WSIAR does not assume that the historic origin of the 10 m³/s flow is determinative for WFD compliance. Instead, the assessment is based on the current statutory flow regime, which is legally binding and forms part of the existing hydrological baseline for the affected water bodies. ESB is required to maintain this compensation flow under its statutory obligations, and the Proposed Project does not alter, constrain or influence these requirements. The WFD requires that a proposed activity must not cause deterioration in the status of any affected water body or prevent the achievement of environmental objectives. The WSIAR therefore evaluates whether the abstraction could affect the ecological or chemical status of the relevant water bodies given the actual flow regime that will continue to operate, including the statutory compensation flow and the fish pass flow. The assessment does not rely on the 10 m³/s flow being ecologically optimal; rather, it evaluates whether the Proposed Project would introduce any additional pressure that could worsen conditions relative to the existing baseline.

3074. The hydrological modelling tests the system under varying scenarios, including normal, flood and drought conditions – the latter two being when ecological sensitivity is most prevalent, potentially. The results demonstrate that the abstraction does not give rise to hydrological changes of a magnitude capable of causing deterioration of any WFD quality element or compromising the achievement of GES or GEP. The WSIAR appropriately assesses the Proposed Project against the current statutory flow regime and demonstrates that the abstraction will not cause deterioration or impede the achievement of WFD objectives.
3075. Any future baseline regime would be decided at a programmatic level, through the RBMP, national policy or a regulatory process, and is independent of the Proposed Project. The abstraction does not limit or prejudice the State's ability to revise compensation flows to a more naturalised flow regime, if this were required in the future.

27. Additional Topics

3076. This Chapter contains matters raised in the submissions to ACP regarding the Proposed Project which did not fall within the scope of Chapters 2 to 26.
3077. This Report and its supporting appendix comprise the response of the Applicant to the issues raised. The responses in this Chapter are related to those in the following Chapters of this Report which should be read alongside this Chapter:
- Chapter 5 – Consideration of Reasonable Alternatives.
3078. Cross references to other relevant Chapters have been included, where relevant, to assist the reader. However, the Applicant's response to the submissions made to ACP comprises this entire Report.
3079. The points raised in the submissions referred to hereunder generally consist of matters that are beyond the scope of the SID planning application under consideration by ACP.

27.1 Regulatory Compliance

3080. Three general observer submissions raised specific issues relating to regulatory compliance:

Unique ID	Name of Individual or Organisation
WSP_SUB_25	Richard Cahill
WSP_SUB_29	Suzanne Noble
WSP_SUB_109	Michael Hoey

3081. The general observer submission from Richard Cahill stated that there is an environmental concern raised by the Proposed Project locating its abstraction point below the O'Brien's Bridge Dam as there is no regulatory body to control when the water is extracted and in what amount.
3082. The general observer submission from Suzanne Noble stated that there are numerous legal cases pending against the Applicant relating to pollution of rivers, with proceedings being taken by the EPA.
3083. The general observer submission from Michael Hoey raised a number of legal matters in connection with his status as a navigation authority.

27.1.1 Applicant's Response

3084. The submission from Richard Cahill identifies that the abstraction point for the Proposed Project is downstream of the O'Brien's Bridge dam and therefore states:

"The location of the Extract point in Birdhill has been chosen specifically to circumvent control by the ESB who regulate the water levels of the Shannon. It would be far better for the Shannon, from an environmental perspective, to have the water being extracted from the ESB controlled part of the Shannon."

3085. This response is based on a misunderstanding of the abstraction location which is upstream of the Parteen Weir and in the section of the River Shannon managed by ESB.
3086. Further, as set out in Chapter 2 – Overarching Matters of this Report, and in EIAR Chapter 1 – Introduction, an abstraction licence will be required in order to operate the Proposed Project and this will regulate the volume of the water that can be abstracted.

3087. Regarding the observation from Suzanne Noble, the Applicant is committed to complying with the relevant environmental law and has set out within the SID planning application how the construction and operation of the Proposed Project will be managed, in addition to the measures that have already been included within the design of the Proposed Project to reduce the environmental impacts. This included avoiding discharges from the treatment processes at the RWI&PS and WTP, as described in Chapter 22 – Resource and Waste Management of this Report.
3088. In relation to Mr. Hoey's submission, the Applicant considers that this submission is based on a misunderstanding of the applicable legislation. The Water Supplies Act 1942 that Mr. Hoey refers to has been repealed and the equivalent provision under the Water Environment (Abstractions and Associated Impoundments) Act 2022 now only applies to Waterways Ireland (section 84).

27.2 Risk of Geotechnical Risks due to Water Leaking from Dublin Pipes

3089. The following submissions raised concerns about the risk of sinkholes and ground subsidence due to leakage of drinking water under Dublin:

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Environmental Protection Alliance Company Ltd.
WSP_SUB_38	Councillor Séamie Morris
WSP_SUB_114	Tipperary County Council

27.2.1 Applicant's Response

3090. The Applicant does not consider this matter to be relevant to the SID planning application under consideration by ACP.
3091. As described in Chapter 5 – Consideration of Reasonable Alternatives, of this Report, the wider Eastern and Midlands Plan includes ambitious leakage reduction targets. Therefore, independent of this Proposed Project the Applicant is working to reduce leakage within the Greater Dublin Area.
3092. The environmental assessment reported in the EIAR assesses whether the Proposed Project will give rise to likely significant effects on the environment. The assessment concludes no likely significant environmental effects, as demonstrated in the EIAR.
3093. Insofar as the existing Dublin pipe network is concerned:
- This is standalone infrastructure, that will remain in place irrespective of the proposed project. WSP does not change or impact how this standalone infrastructure operates.
 - There is no baseline evidence of any likely significant environmental effects occurring as a result of the existing Dublin pipe network, either from leakages or the material it is made from.
 - It is not possible to assess whether the Proposed Project, in cumulation with the existing Dublin pipe network, would give rise to likely significant geotechnical and/or health effects, where there is no underlying baseline evidence of any such effects.
 - It is also not correct to regard these effects as indirect effects of the Proposed Project. They are so independent and remote from the proposed project that they cannot realistically be regarded as falling within the scope of Article 3(1) of the EIA Directive.
 - Separately, the National Leakage Plan has been actioned by UE, and works are ongoing to repair the leakages in the existing Dublin pipe network. In this regard, the baseline environment in Dublin will continue to improve over time

27.3 Health Impacts of Lead Pipes

3094. The following submission raised concerns about the health impact of lead pipes in the Dublin water network:

Unique ID	Name of Individual or Organisation
WSP_SUB_29	Suzanne Noble

27.3.1 Applicant's Response

3095. The Applicant does not consider this matter to be relevant to the SID planning application under consideration by ACP. The Proposed Project pipe will be constructed from steel, and the option of leakage reduction as an alternative to the Proposed Project has been raised in multiple submissions and is addressed further in Chapter 5 – Consideration of Reasonable Alternatives of this Report.

27.4 Compliance with the Environmental Liability Directive and Article 191(2) of Treaty on the Functioning of the European Union

3096. The prescribed body submission from Tipperary County Council raised specific issues in relation to compliance with the Environmental Liability Directive (2004/35/EC) and Article 191(2) of Treaty on the Functioning of the European Union (TFEU):

Unique ID	Name of Individual or Organisation
WSP_SUB_114	Tipperary County Council

3097. This prescribed body submission stated that expanding abstraction while tolerating known infrastructure leakage shifts environmental risk rather than preventing it, and that preventive action under Article 5 of Directive 2004/35/EC requires operators to take necessary measures where there is an imminent threat of environmental damage. The submission continued that failure to systematically address leakage may engage future liability considerations.

3098. The submission also stated that the Proposed Project presents a significant risk of non-compliance with Directive 2004/35/EC and the TFEU.

27.4.1 Applicant's Response

3099. The Applicant does not consider this matter to be relevant to the SID planning application under consideration by ACP. The option of leakage reduction as an alternative to the Proposed Project has been raised in multiple submissions and is addressed further in Chapter 5 – Consideration of Reasonable Alternatives of this Report. The Applicant does not consider there to be an imminent threat of environmental damage occurring as a result of the Proposed Project.

27.5 Ballymore Eustace Water Treatment Plant

3100. The general observer submission from the Ballymore Eustace Trout and Salmon Anglers Association raised concerns about the Ballymore Eustace WTP and made comparisons to between the Ballymore Eustace WTP and the proposed operation of the Proposed Project WTP.

Unique ID	Name of Individual or Organisation
WSP_SUB_71	Ballymore Eustace Trout and Salmon Anglers Association

3101. This general observer submission highlighted the problems that were created by the Ballymore Eustace WTP and stated that the same problems will be created by the proposed large WTP at the village of Birdhill.

27.5.1 Applicant's Response

3102. The Applicant notes that this observation relates to the current operation of the existing Ballymore Eustace WTP in County Kildare and is therefore not within the scope of the response to be provided for issues relating to the SID planning application under consideration by ACP.

27.6 Carbon from Water Leakage

3103. The following general observer submissions state that there needs to be a comparison of the carbon footprint of large-scale leak reduction programs with the energy intensive WSP. Without this essential data, the WSP proposal is incomplete and fails to meet the basic requirements of environmental due diligence under EU and Irish planning laws.

Unique ID	Name of Individual or Organisation
WSP_SUB_26	River Shannon Protection Alliance Company Ltd
WSP_SUB_38	Cllr. Séamie Morris

27.6.1 Applicant's Response

3104. The Applicant does not consider this matter to be relevant to the SID planning application under consideration by ACP. The Proposed Project is required to calculate its GHG emissions and assess the likely significant effects of these emissions on climate, and this has been done and reported in EIAR Chapter 13 - Climate.
3105. A comparison of the Proposed Project GHG emissions against GHG emissions from a leakage reduction programme is not relevant to, or within the scope of, the environmental assessment for the Proposed Project. Impacts on climate change, including from GHG emissions, was a consideration in the Strategic Environmental Assessments undertaken for the National Water Resource Plan and Regional Water Resource Plan: Eastern and Midlands, which are available on the Uisce Éireann website - <https://www.water.ie/projects/strategic-plans/national-water-resources>.
3106. As described in Chapter 5 – Consideration of Reasonable Alternatives of this Report, the wider Eastern and Midlands Plan includes ambitious leakage reduction targets. Therefore, independent of this Proposed Project the Applicant is working to reduce leakage within the Greater Dublin Area.

28. References

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Appendix A – Submissions Identification Table

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
WSP_SUB_01	20	Danny Janssens	Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Consideration of Reasonable Alternatives	Section 5.3.1 (Alternative Route Option on Specific Landowner Lands)
			Project Description	Section 6.3.1 (Adequacy of Design Details on Landowner Lands)
			Construction and Commissioning	Section 7.3.1 (Proposed Construction Access)
			Traffic and Transport	Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.3.2 (Potential Biodiversity Impact of Hedgerow Removal on Specific Landowner Lands)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Soils, Geology and Hydrogeology	Section 13.2.1 (Potential Soils Impacts)EIAR Chapter 10 - Soils, Geology and Hydrogeology assesses the impact on soil loss and compaction from the construction and operation of the Proposed Project. Impacts on soils are mainly related to the Construction Phase due to the limited operational activities that would interact with soils (as a result, there would be no likely significant effects on soils during the Operational Phase). During construction, the movement of construction plant and traffic within the Planning Application Boundary could cause localised compaction of the topsoil and subsoils, leading to changes in the hydrogeological regime. There would also be a permanent loss of soil as a result of constructing the infrastructure sites, and temporary loss of soils within the Construction Working Width. However, the assessment concluded that there would be no likely significant effects on soils as a result of constructing the Proposed Project, with the exception of small, localised areas of degraded raised bog (see response in Section 13.3.1 of this report in relation to effects on peat).
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access) Section 14.3.1 (Potential Impact of Construction Dust on Specific Landowner Lands) Section 14.3.14 (Potential Impacts on Land Drainage on Specific Landholdings)
			Air Quality	Section 15.3.1 (Potential Construction Dust Impacts on Specific Landowner Lands)
			Climate	Section 16.2.1 (Potential Climate Impacts)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 16.2.2 (Potential Climate Impact from Hedgerow / Tree Removal)
WSP_SUB_02	37	Fight the Shannon Pipeline	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.6 (Demand Management)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.3.10 (Potential Breach of S.I. No. 331/2019)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation)
			Natura Impact Statement	Section 25.2.1 (Compliance with the Habitats Directive)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive)
WSP_SUB_03	45	Gordon and Leslie Beattie	Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Consideration of Reasonable Alternatives	Section 5.3.1 (Alternative Route Option on Specific Landowner Lands)
			Project Description	Section 6.3.1 (Adequacy of Design Details on Landowner Lands)
			Construction and Commissioning	Section 7.3.1 (Proposed Construction Access)
			Traffic and Transport	Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.3.2 (Potential Biodiversity Impact of Hedgerow Removal on Specific Landowner Lands)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Soils, Geology and Hydrogeology	Section 13.2.1 (Potential Soils Impacts)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access) Section 14.3.1 (Potential Impact of Construction Dust on Specific Landowner Lands) Section 14.3.2 (Potential Impact of Acquisition on Future Development on Specific Landowner Lands) Section 14.3.14 (Potential Impacts on Land Drainage on Specific Landholdings)
			Air Quality	Section 15.3.1 (Potential Construction Dust Impacts on Specific Landowner Lands)
			Climate	Section 16.2.1 (Potential Climate Impacts)

Response to Submissions Report

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 16.2.2 (Potential Climate Impact from Hedgerow / Tree Removal)
WSP_SUB_04	46	Health and Safety Authority (HSA)*	N/A	N/A – no response required
WSP_SUB_05	114	Yvonne Moloney	Planning	Section 3.3.7 (Community Benefits Scheme / Funding)
			Project Description	Section 6.2.3 (Monitoring of Water Levels)
			Construction and Commissioning	Section 7.3.6 (Recommended Construction Phase Conditions)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.3.15 (Recommended Conditions)
			Water (Modelling)	Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access) Section 14.3.15 (Recommended Mitigation)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.3.6 (Employment and Economic Benefits)
			Landscape and Visual	Section 19.2.3 (Design of the Permanent Infrastructure at the RWI&PS)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
WSP_SUB_06	5	Brian Leddin	Planning	Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.2 (Alternative Source)
			Project Description	Section 6.2.4 (Inclusion of a Storage Reservoir in the Design)
			Water (Modelling)	Section 11.2.4 (Future Climate Change)
WSP_SUB_07	6	Bridget Ginnitty	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.5 (Rainwater Harvesting and Greywater Reuse) Section 5.2.6 (Demand Management) Section 5.2.9 (Alternative Assessment)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.4 (Future Climate Change)
WSP_SUB_08	9	Caroline and Mark Eldridge	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_09	12	Chambers Ireland	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project)
WSP_SUB_10	13	Christopher Campion	Overarching Matters	Section 2.5 (Project Costs / Cost Benefit)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.3 (Groundwater Alternatives)
			Project Description	Section 6.2.4 (Inclusion of a Storage Reservoir in the Design) Section 6.3.9 (Availability of Water)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.3.3 (Availability of Water in a Drought)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Human Health	Section 18.3.5 (Potential for Trihalomethane in Drinking Water)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)
WSP_SUB_11	17	Councillor Seán Hartigan	Project Description	Section 6.2.2 (Capacity of the Proposed Pipeline) Section 6.2.5 (Adequacy of Designed Storage Capacity)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water (Modelling)	Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.7 (Downstream Effects on the River Shannon)
			Cumulative Effects and Interactions	Section 24.3.1 (Potential Cumulative Impact with the Shannon Fish Passage Study)
			Natura Impact Statement	Section 25.3.2 (In-Combination Assessment with the Fish Passage Project)
WSP_SUB_12	24	Dr. John Galvin	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.3.6 (Potential Impact of the Proposed Project on the Mycelium Web)
WSP_SUB_13	26	Éadaoin Kiely and Darren Kirwan	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_14	34	Eva Killeen	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.3.4 (Potential Impact of Algal Blooms on Recreation and Amenity)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
WSP_SUB_15	36	Fergal Hayes	Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
			Landscape and Visual	Section 19.2.4 (Potential Visual Impact to Lough Derg)
WSP_SUB_16	53	Joanne Skehan	Overarching Matters	Section 2.5 (Project Costs / Cost Benefit)
			Planning	Section 3.2.2 (Challenging the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.6 (Demand Management) Section 5.2.9 (Alternative Assessment)
			Project Description	Section 6.3.10 (Systemic Vulnerability of the Proposed Project)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.3 (Disruption to Local Communities) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.4 (Future Climate Change) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 11.3.12 (Potential Cumulative Hydrology Impacts and Modelling)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation)
			Soils, Geology and Hydrogeology	Section 13.2.1 (Potential Soils Impacts)
			Agriculture	Section 14.2.1 (Disruption to Agriculture and Farmlands) Section 14.2.5 (Potential Sterilisation of Lands and Impacts to Land Use)
			Climate	Section 16.2.3 (Lifecycle Carbon Assessment and Carbon Budgets) Section 16.2.4 (Climate Adaptation) Section 16.2.5 (Alignment of the Proposed Project with Climate Legislation)
			Population	Section 17.2.1 (Potential Impact on Local Communities)
			Landscape and Visual	Section 19.2.1 (Potential Impact of the Scale and Nature of the Proposed Project on the Landscape)
			Cumulative Effects and Interactions	Section 24.2.1 (Adequacy of the Cumulative Impact Assessment)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive)
WSP_SUB_17	54	Joe Mayo	Consideration of Reasonable Alternatives	Section 5.2.9 (Alternative Assessment)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.4 (Future Climate Change) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon) Section 11.3.12 (Potential Cumulative Hydrology Impacts and Modelling)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive) Section 26.3.3 (Compliance with Article 4 Requirements) Section 26.3.5 (Assessment Based on UKTAG Methodology) Section 26.3.6 (Reflection of the Water Cycle in the Assessment) Section 26.3.7 (Integrated Catchment Management)
WSP_SUB_18	55	John and Georgina Ringrose	Planning	Section 3.3.7 (Community Benefits Scheme / Funding)
			Project Description	Section 6.2.3 (Monitoring of Water Levels)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.4 (Future Climate Change) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon) Section 11.2.11 (Additional Water-Related Mitigation and Monitoring Measures)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.3.6 (Employment and Economic Benefits)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Landscape and Visual	Section 19.2.3 (Design of the Permanent Infrastructure at the RWI&PS)
WSP_SUB_19	57	John Fingleton	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project)
			Consideration of Reasonable Alternatives	Section 5.2.8 (Alternative Abstraction Location / Shortest Route) Section 5.3.6 (Alternative Design Pipeline Design Measures)
			Project Description	Section 6.3.5 (Use of Gravity Pressure)
WSP_SUB_20	63	Kieran O'Connor	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg) Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
WSP_SUB_21	73	Mattie McGrath TD	Overarching Matters	Section 2.5 (Project Costs / Cost Benefit)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.3 (Groundwater Alternatives)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_22	81	Michael Reidy	Overarching Matters	Section 2.1 (Status of the Regional Water Resources Plan) Section 2.3 (Abstraction Licensing) Section 2.4 (Need for Volume of Water to be Supplied)
			Planning	Section 3.2.2 (Challenging the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)
			Consultation and Communication	Section 4.2.1 (Public Consultation Adequacy) Section 4.3.1 (Future Take Offs)
			Consideration of Reasonable Alternatives	Section 5.2.2 (Alternative Source) Section 5.2.8 (Alternative Abstraction Location / Shortest Route)
			Project Description	Section 6.2.1 (Adequacy of General Design Information) Section 6.3.2 (Adequacy of Design Details on Take Offs) Section 6.3.9 (Availability of Water) Section 6.3.10 (Systemic Vulnerability of the Proposed Project)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.3.2 (Source of water during a drought event)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 11.3.3 (Availability of Water in a Drought) Section 11.3.5 (Test the impact of the abstraction)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_23	82	Michelle Keary	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.7 (Downstream Effects on the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_24	89	Pamela Quirke O'Meara	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_25	93	Richard Cahill	Consideration of Reasonable Alternatives	Section 5.2.7 (Alternative Route(s)) Section 5.2.8 (Alternative Abstraction Location / Shortest Route)
			Project Description	Section 6.2.5 (Adequacy of Designed Storage Capacity)
			Additional Topics	Section 27.1 (Regulatory Compliance)
WSP_SUB_26	94	River Shannon Environmental Protection Alliance Company Ltd	Overarching Matters	Section 2.1 (Status of the Regional Water Resources Plan) Section 2.5 (Project Costs / Cost Benefit) Section 2.6 (Compliance with the Environmental Impact Assessment and Strategic Environmental Assessment Directives)
			Planning	Section 3.2.2 (Challenging the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.3 (Groundwater Alternatives) Section 5.2.4 (Desalination) Section 5.2.6 (Demand Management) Section 5.2.8 (Alternative Abstraction Location / Shortest Route) Section 5.2.9 (Alternative Assessment)
			Project Description	Section 6.3.2 (Adequacy of Design Details on Take Offs) Section 6.3.8 (Risk of Low Flow and Drought Conditions during the Operational Phase)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg) Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage) Section 10.3.12 (Potential Impacts to Littoral and Shoreline Habitats) Section 10.3.13 (Potential Impact of Native Woodland Removal)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.7 (Downstream Effects on the River Shannon) Section 11.2.8 (Upstream Effects on the River Shannon) Section 11.2.9 (Operation of the Model / Management of Water Levels) Section 11.3.6 (Sensitivity Test on Starting Water Level) Section 11.3.7 (How climate change affects the River Shannon Catchment) Section 11.3.10 (Adequacy of Water-Related Mitigation Measures)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Climate	Section 16.2.5 (Alignment of the Proposed Project with Climate Legislation) Section 16.3.2 (Potential Impact of the Proposed Project on Renewable Energy Generation) Section 16.3.4 (Energy Demand and Carbon Emissions)
			Human Health	Section 18.2.2 (Potential Health Impacts Associated with Transport of Drinking Water)
			Natura Impact Statement	Section 25.2.1 (Compliance with the Habitats Directive) Section 25.2.2 (Compliance with the Birds Directive) Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment) Section 25.3.5 (Reliance of the Appropriate Assessment on Average Flow Metrics) Section 25.3.6 (Illegal Development under Natura 2000 Protections) Section 25.3.11 (Demonstration of Ecological Safety)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.3.2 (Reliance of the Assessment on Average Flow Metrics) Section 26.3.3 (Compliance with Article 4 Requirements) Section 26.3.4 (Reliance on Heavily Modified Water Body Designation)
			Additional Topics	Section 27.2 (Risk of Geotechnical Risks due to Water Leaking from Dublin Pipes) Section 27.6 (Carbon from Water Leakage)The Applicant notes that this observation relates to the current operation of the existing Ballymore Eustace WTP in County Kildare and is therefore not within the scope of the response to be provided for issues relating to the SID planning application under consideration by ACP.
WSP_SUB_27	101	St. Flannans Fishing Club	Overarching Matters	Section 2.5 (Project Costs / Cost Benefit)
			Planning	Section 3.2.2 (Challenging the Need for the Proposed Project) Section 3.3.7 (Community Benefits Scheme / Funding)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.3 (Groundwater Alternatives) Section 5.2.4 (Desalination)
			Project Description	Section 6.2.3 (Monitoring of Water Levels)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg) Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.11 (Additional Water-Related Mitigation and Monitoring Measures)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_28	102	Stefan and Olivia Hahne	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
			Human Health	Section 18.2.1 (Potential General Health Impacts)
WSP_SUB_29	103	Suzanne Noble	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.6 (Demand Management)
			Biodiversity	Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg) Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
			Additional Topics	Section 27.1 (Regulatory Compliance) Section 27.3 (Health Impacts of Lead Pipes)
WSP_SUB_30	104	Terry Forristal	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.4 (Future Climate Change)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
			Human Health	Section 18.2.1 (Potential General Health Impacts) Section 18.3.6 (Potential Health Impacts on Limerick Citizens)
WSP_SUB_31	110	Tony O'Brien	Overarching Matters	Section 2.5 (Project Costs / Cost Benefit)
			Planning	Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions)
			Agriculture	Section 14.2.1 (Disruption to Agriculture and Farmlands) Section 14.2.5 (Potential Sterilisation of Lands and Impacts to Land Use)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_32	113	William Lawrence Hodges	Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.4.3 (Potential Impact of Algal Blooms on Recreation and Amenity)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
WSP_SUB_33	8	Carol-Anne Murphy	Overarching Matters	Section 2.5 (Project Costs / Cost Benefit)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Population	Section 17.2.1 (Potential Impact on Local Communities)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive) Section 26.3.3 (Compliance with Article 4 Requirements)
WSP_SUB_34	10	Castleconnell Boat Club	Consultation and Communication	Section 4.2.1 (Public Consultation Adequacy) Section 4.2.3 (Access to Technical Information)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.3.3 (Potential Impact of the Proposed Project on Limerick Rowing)
WSP_SUB_35	11	Castleconnell River Association	Planning	Section 3.2.3 (Balanced Regional Development)
			Project Description	Section 6.2.3 (Monitoring of Water Levels) Section 6.2.4 (Inclusion of a Storage Reservoir in the Design) Section 6.3.6 (Parteen / Ardnacrusa Barrier System) Section 6.3.9 (Availability of Water)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.3.9 (Potential Impact of the Proposed Water Treatment Plant on Biodiversity)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.3 (Maintaining the Minimum Compensation Flow) Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.11 (Additional Water-Related Mitigation and Monitoring Measures) Section 11.3.1 (Availability of model) Section 11.3.3 (Availability of Water in a Drought)
			Cumulative Effects and Interactions	Section 24.3.1 (Potential Cumulative Impact with the Shannon Fish Passage Study)
			Natura Impact Statement	Section 25.3.2 (In-Combination Assessment with the Fish Passage Project) Section 25.3.8 (Degradation of Wild Salmon Habitat)
WSP_SUB_36	15	Councillor Fiona Bonfield, Alan Kelly TD, Councillor Louise Morgan-Walsh	Overarching Matters	Section 2.5 (Project Costs / Cost Benefit)
			Planning	Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)
WSP_SUB_37	18	Councillor Dr. Phyll Bugler	Overarching Matters	Section 2.6 (Compliance with the Environmental Impact Assessment and Strategic Environmental Assessment Directives)
			Planning	Section 3.2.2 (Challenging the Need for the Proposed Project)
			Consultation and Communication	Section 4.2.2 (Public Participation - Compliance with the Aarhus Directive)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg) Section 10.3.6 (Potential Impact of the Proposed Project on the Mycelium Web)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Climate	Section 16.2.5 (Alignment of the Proposed Project with Climate Legislation)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
			Natura Impact Statement	Section 25.2.1 (Compliance with the Habitats Directive) Section 25.2.2 (Compliance with the Birds Directive)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive)
WSP_SUB_38	19	Councillor Séamie Morris	Overarching Matters	Section 2.1 (Status of the Regional Water Resources Plan) Section 2.5 (Project Costs / Cost Benefit)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Planning	Section 3.2.2 (Challenging the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.3 (Groundwater Alternatives) Section 5.2.4 (Desalination) Section 5.2.6 (Demand Management) Section 5.2.8 (Alternative Abstraction Location / Shortest Route) Section 5.2.9 (Alternative Assessment)
			Project Description	Section 6.3.2 (Adequacy of Design Details on Take Offs) Section 6.3.8 (Risk of Low Flow and Drought Conditions during the Operational Phase)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg) Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage) Section 10.3.12 (Potential Impacts to Littoral and Shoreline Habitats) Section 10.3.13 (Potential Impact of Native Woodland Removal)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.7 (Downstream Effects on the River Shannon) Section 11.2.8 (Upstream Effects on the River Shannon) Section 11.2.9 (Operation of the Model / Management of Water Levels) Section 11.3.6 (Sensitivity Test on Starting Water Level) Section 11.3.7 (How climate change affects the River Shannon Catchment) Section 11.3.10 (Adequacy of Water-Related Mitigation Measures)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)

Response to Submissions Report

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Climate	Section 16.2.5 (Alignment of the Proposed Project with Climate Legislation) Section 16.3.2 (Potential Impact of the Proposed Project on Renewable Energy Generation) Section 16.3.4 (Energy Demand and Carbon Emissions)
			Human Health	Section 18.2.2 (Potential Health Impacts Associated with Transport of Drinking Water)
			Natura Impact Statement	Section 25.2.2 (Compliance with the Birds Directive) Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment) Section 25.3.5 (Reliance of the Appropriate Assessment on Average Flow Metrics) Section 25.3.6 (Illegal Development under Natura 2000 Protections) Section 25.3.11 (Demonstration of Ecological Safety)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.3.2 (Reliance of the Assessment on Average Flow Metrics) Section 26.3.3 (Compliance with Article 4 Requirements) Section 26.3.4 (Reliance on Heavily Modified Water Body Designation)
			Additional Topics	Section 27.2 (Risk of Geotechnical Risks due to Water Leaking from Dublin Pipes) Section 27.6 (Carbon from Water Leakage)
WSP_SUB_39	21	Derg Open Water Swim School and the Swim Group "Lively Wimmin Swimmin"	Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.3.4 (Potential Impact of Algal Blooms on Recreation and Amenity)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.3.3 (Compliance with Article 4 Requirements)
WSP_SUB_40	23	Diarmuid O'Crowley	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.6 (Demand Management)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_41	25	Dublin Chamber	N/A	N/A – no response required
WSP_SUB_42	29	Eileen McNamara	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project)
			Consultation and Communication	Section 4.2.4 (Adequacy of Previous Consultation Responses)
			Consideration of Reasonable Alternatives	Section 5.2.2 (Alternative Source) Section 5.2.7 (Alternative Route(s))
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity)
			Agriculture	Section 14.2.1 (Disruption to Agriculture and Farmlands)
			Cultural Heritage	Section 20.2.1 (Potential Impact on Archaeological and Architectural Heritage within Ireland's Ancient East)
			Risk of Major Accidents and / or Disasters	Section 23.2.2 (Risk of Pipeline Failure)
WSP_SUB_43	32	Environmental Trust Ireland	Project Description	Section 6.2.1 (Adequacy of General Design Information)
WSP_SUB_44	33	Eric Conroy	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.6 (Demand Management)
			Climate	Section 16.2.5 (Alignment of the Proposed Project with Climate Legislation)
WSP_SUB_45	40	Friends of the Irish Environment	Consultation and Communication	Section 4.2.3 (Access to Technical Information)
			Consideration of Reasonable Alternatives	Section 5.2.6 (Demand Management) Section 5.2.9 (Alternative Assessment)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Biodiversity	Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage) Section 10.3.7 (Fish Survey of Parteen Reservoir) Section 10.3.8 (Adequacy of the Ecological Assessment for the Shannon) Section 10.3.11 (Adequacy of Ecology Surveys)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.7 (Downstream Effects on the River Shannon) Section 11.3.4 (Interaction between regulated flows and Abstraction volumes) Section 11.3.12 (Potential Cumulative Hydrology Impacts and Modelling)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.3.3 (Receiving Wastewater Capacity)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment) Section 25.3.5 (Reliance of the Appropriate Assessment on Average Flow Metrics) Section 25.3.7 (Impingement Mortality and Entrainment Characterisation Study) Section 25.3.9 (Description of Common Tern in the Natura Impact Statement) Section 25.3.10 (Potential Implications of Inter-Basin Water Transfers)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive) Section 26.3.1 (Receiving Wastewater Capacity Assessment Under the Water Framework Directive) Section 26.3.2 (Reliance of the Assessment on Average Flow Metrics) Section 26.3.3 (Compliance with Article 4 Requirements) Section 26.3.5 (Assessment Based on UKTAG Methodology) Section 26.3.6 (Reflection of the Water Cycle in the Assessment) Section 26.3.7 (Integrated Catchment Management)
WSP_SUB_46	41	Futureproof Clare Environmental CLG	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.5 (Rainwater Harvesting and Greywater Reuse) Section 5.2.6 (Demand Management)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Biodiversity	Section 10.2.2 (Potential Biodiversity Impacts to the River Shannon) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.4 (Future Climate Change)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Population	Section 17.3.2 (Potential Recreation and Tourism Impacts of Reduction in Fish Stock) Section 17.3.4 (Potential Impact of Algal Blooms on Recreation and Amenity)
			Cultural Heritage	Section 20.2.2 (Potential Impact on the Cultural Significance of the Shannon)
			Cumulative Effects and Interactions	Section 24.3.2 (Cumulative Impact Assessment of Other Developments in the Shannon Area)
			Natura Impact Statement	Section 25.2.1 (Compliance with the Habitats Directive)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive)
WSP_SUB_47	42	Garrett O'Neill	Water (Modelling)	Section 11.3.8 (Compatibility of the Proposed Project with Ardnacrusha Dam)
WSP_SUB_48	43	Garrett Reil and Cliona Geary	Overarching Matters	Section 2.5 (Project Costs / Cost Benefit) Section 2.8 (Mitigation Measures in the Environmental Impact Assessment Report and the Natura Impact Statement)
			Planning	Section 3.2.3 (Balanced Regional Development) Section 3.3.4 (Best Practice in Urban Water Resource Management)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.3 (Groundwater Alternatives) Section 5.2.4 (Desalination) Section 5.2.6 (Demand Management) Section 5.2.9 (Alternative Assessment)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon) Section 11.3.9 (Requirement for a Mechanism to Cap or Reduce Abstraction)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Soils, Geology and Hydrogeology	Section 13.2.1 (Potential Soils Impacts)
			Agriculture	Section 14.2.1 (Disruption to Agriculture and Farmlands) Section 14.2.2 (Potential Loss of Agricultural Access) Section 14.2.6 (Potential Land Impacts)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
			Cumulative Effects and Interactions	Section 24.3.1 (Potential Cumulative Impact with the Shannon Fish Passage Study)
			Natura Impact Statement	Section 25.2.1 (Compliance with the Habitats Directive) Section 25.3.2 (In-Combination Assessment with the Fish Passage Project)

Response to Submissions Report

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.3.3 (Compliance with Article 4 Requirements)
WSP_SUB_49	47	Irish Business and Employers Confederation (IBEC)	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project)
WSP_SUB_50	49	James Crowley	Planning	Section 3.2.2 (Challenging the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.3 (Groundwater Alternatives) Section 5.2.6 (Demand Management)
			Project Description	Section 6.3.10 (Systemic Vulnerability of the Proposed Project)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.3.8 (Adequacy of the Ecological Assessment for the Shannon)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.3.11 (Operational Regime)
			Water (General)	Section 12.2.5 (Flood Risk)
			Climate	Section 16.3.3 (Embodied Carbon)
			Cultural Heritage	Section 20.2.2 (Potential Impact on the Cultural Significance of the Shannon)
			Cumulative Effects and Interactions	Section 24.3.1 (Potential Cumulative Impact with the Shannon Fish Passage Study)
			Natura Impact Statement	Section 25.3.2 (In-Combination Assessment with the Fish Passage Project)
WSP_SUB_51	56	John Baker	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.5 (Rainwater Harvesting and Greywater Reuse) Section 5.2.6 (Demand Management)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
WSP_SUB_52	60	John Sadlier	Consultation and Communication	Section 4.2.1 (Public Consultation Adequacy)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Noise and Vibration	Section 8.3.3 (Potential Operational Noise Impacts from the Water Treatment Plant)
			Air Quality	Section 15.2.1 (Potential for Odour Impacts)
WSP_SUB_53	62	Keith Ball	Consideration of Reasonable Alternatives	Section 5.2.2 (Alternative Source)
			Project Description	Section 6.3.10 (Systemic Vulnerability of the Proposed Project)
WSP_SUB_54	65	Killaloe Ballina District Angler's Association	Overarching Matters	Section 2.3 (Abstraction Licensing) Section 2.8 (Mitigation Measures in the Environmental Impact Assessment Report and the Natura Impact Statement)
			Planning	Section 3.3.7 (Community Benefits Scheme / Funding)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Project Description	Section 6.2.3 (Monitoring of Water Levels)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage) Section 10.3.13 (Potential Impact of Native Woodland Removal) Section 10.3.15 (Recommended Conditions)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.11 (Additional Water-Related Mitigation and Monitoring Measures)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Natura Impact Statement	Section 25.2.1 (Compliance with the Habitats Directive)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.3.3 (Compliance with Article 4 Requirements)
WSP_SUB_55	67	Laura Kavanagh	Biodiversity	Section 10.3.12 (Potential Impacts to Littoral and Shoreline Habitats) Section 10.3.14 (Site-Specific Ecological Impact Assessment)
			Water (Modelling)	Section 11.2.4 (Future Climate Change)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 11.2.9 (Operation of the Model / Management of Water Levels)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment) Section 25.3.3 (Assessment of Hydrologically Connected European Sites) Section 25.3.4 (Adequacy of Mitigation Measures) Section 25.3.5 (Reliance of the Appropriate Assessment on Average Flow Metrics)
WSP_SUB_56	70	Lough Derg Mermaids	Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.2.2 (Potential Biodiversity Impacts to the River Shannon) Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.4 (Future Climate Change) Section 11.3.12 (Potential Cumulative Hydrology Impacts and Modelling)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Cumulative Effects and Interactions	Section 24.2.1 (Adequacy of the Cumulative Impact Assessment)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive)
WSP_SUB_57	71	Lucy Murphy	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 11.2.4 (Future Climate Change)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.3.4 (Potential Impact of Algal Blooms on Recreation and Amenity)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
WSP_SUB_58	74	McKeogh's Hardware Ltd.	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction)
			Biodiversity	Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
WSP_SUB_59	75	Melina Sharp and Michael Eversen	Planning	Section 3.2.2 (Challenging the Need for the Proposed Project)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.5 (Rainwater Harvesting and Greywater Reuse) Section 5.2.6 (Demand Management)
			Biodiversity	Section 10.2.2 (Potential Biodiversity Impacts to the River Shannon)
			Climate	Section 16.2.5 (Alignment of the Proposed Project with Climate Legislation)
WSP_SUB_60	78	Michael Barker and Company	Planning	Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.5 (Rainwater Harvesting and Greywater Reuse) Section 5.2.6 (Demand Management)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.2.2 (Potential Biodiversity Impacts to the River Shannon) Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.5 (Increase in periods of droughts under future climate change scenarios)

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WSP_SUB_61	83	Michelle McNamara	Overarching Matters	Section 2.8 (Mitigation Measures in the Environmental Impact Assessment Report and the Natura Impact Statement)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.3.9 (Requirement for a Mechanism to Cap or Reduce Abstraction)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive)
WSP_SUB_62	84	Mountshannon Community Council	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.6 (Demand Management)
			Biodiversity	Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.3.12 (Potential Cumulative Hydrology Impacts and Modelling)
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Climate	Section 16.2.3 (Lifecycle Carbon Assessment and Carbon Budgets) Section (Alignment of the Proposed Project with Climate Legislation)
			Population	Section 17.3.1 (Potential Economic Impact on Mountshannon)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)
			Cumulative Effects and Interactions	Section 24.2.1 (Adequacy of the Cumulative Impact Assessment)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.3.3 (Compliance with Article 4 Requirements)
WSP_SUB_63	91	Port Omna Beo	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.6 (Demand Management)

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			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg) Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)
WSP_SUB_64	92	Portumna and District Angling and Boating Association	Overarching Matters	Section 2.8 (Mitigation Measures in the Environmental Impact Assessment Report and the Natura Impact Statement)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
WSP_SUB_65	96	Samuel Norris	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.3 (Groundwater Alternatives) Section 5.2.5 (Rainwater Harvesting and Greywater Reuse) Section 5.2.6 (Demand Management)
			Project Description	Section 6.3.8 (Risk of Low Flow and Drought Conditions during the Operational Phase) Section 6.3.10 (Systemic Vulnerability of the Proposed Project)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.3.5 (Potential Impact of the Proposed Project on Fish Migration and Passage) Section 10.3.15 (Recommended Conditions)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.3.12 (Potential Cumulative Hydrology Impacts and Modelling)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation)
			Agriculture	Section 14.2.1 (Disruption to Agriculture and Farmlands) Section 14.2.4 (The following submissions raised concerns about the potential for the spread of disease across agricultural land as a result of the construction of the Proposed Project:Risk of Spread of Disease Across Agricultural Land) Section 14.2.6 (Potential Land Impacts) Section 14.3.13 (Cumulative Impact of All Construction Elements on Landowner Lands)
			Population	Section 17.2.1 (Potential Impact on Local Communities)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
			Risk of Major Accidents and/or Disasters	Section 23.2.1 (Risk of Spread of Disease Along the Proposed Pipeline Route)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment) Section 25.3.12 (Existing Flow Modification and Interaction with Ardnacrusha Hydroelectric Operation)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive)
WSP_SUB_66	97	Sarah Conroy	Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive)
WSP_SUB_67	99	Senator Dee Ryan	Planning	Section 3.2.3 (Balanced Regional Development)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions)
			Climate	Section 16.3.2 (Potential Impact of the Proposed Project on Renewable Energy Generation)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.3.5 (Potential Impact of the Proposed Project on the Economic Development of Limerick)
WSP_SUB_68	106	The Local Authority Waters Programme (LAWPRO)	Project Description	Section 6.4.14 (Request for Further Investigation of Mitigation for Leakage)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.3.8 (Adequacy of the Ecological Assessment for the Shannon)
			Water (Modelling)	Section 11.2.4 (Future Climate Change) Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.7 (Downstream Effects on the River Shannon)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water (General)	Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)
WSP_SUB_69	107	The Lough Derg Anglers Association	Overarching Matters	Section 2.3 (Abstraction Licensing) Section 2.8 (Mitigation Measures in the Environmental Impact Assessment Report and the Natura Impact Statement)
			Planning	Section 3.3.7 (Community Benefits Scheme / Funding)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Project Description	Section 6.2.3 (Monitoring of Water Levels)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.3.15 (Recommended Conditions)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon) Section 11.2.11 (Additional Water-Related Mitigation and Monitoring Measures)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Natura Impact Statement	Section 25.3.1 (Adequacy of the Findings of the Appropriate Assessment)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.3.3 (Compliance with Article 4 Requirements)
WSP_SUB_70	109	Tom and Mary Scully	Consideration of Reasonable Alternatives	Section 5.2.9 (Alternative Assessment)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Climate	Section 16.2.5 (Alignment of the Proposed Project with Climate Legislation)
WSP_SUB_71	3	Ballymore Eustace Trout and Salmon Anglers Association	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Project Description	Section 6.3.7 (Chemicals at the Proposed Water Treatment Plant) Section 6.3.11 (Recommended Conditions)
			Air Quality	Section 15.2.1 (Potential for Odour Impacts) Section 15.3.3 (Potential Odour Impacts Resulting from the Transport of Wastewater)
			Resource and Waste Management	Section 22.2.1 (Management of Waste at the Proposed Water Treatment Plant)
			Additional Topics	Section 27.5 (Ballymore Eustace Water Treatment Plant)
WSP_SUB_72	7	Carol Killeen	Overarching Matters	Section 2.8 (Mitigation Measures in the Environmental Impact Assessment Report and the Natura Impact Statement)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.9 (Alternative Assessment)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns) Section 9.2.3 (Disruption to Local Communities) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.2.5 (Potential Impacts of Algal Bloom in Lough Derg)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.4 (Future Climate Change) Section 11.2.5 (Increase in periods of droughts under future climate change scenarios) Section 11.2.10 (Potential Impact of the Proposed Project on Resilience of the River Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.3 (Potential for Reduced Water Levels to Result in Pollution Concentration and Algae Growth)

Response to Submissions Report

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities) Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.3.4 (Potential Impact of Algal Blooms on Recreation and Amenity)
			Human Health	Section 18.3.4 (Algal Blooms and Health Impacts)
WSP_SUB_73	30	EirGrid	Material Assets	Section 21.4.2 (Interactions and Recommended Conditions for Planning)
WSP_SUB_74	58	John Hensey	Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Noise and Vibration	Section 8.3.1 (Potential Construction Noise Impacts at Specific Landowner Lands)
			Traffic and Transport	Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase)
			Landscape and Visual	Section 19.3.1 (Potential Visual Impacts on Specific Landowner Lands)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access) Section 14.3.3 (Adequacy of Impact Assessment on Farming Enterprises) Section 14.3.13 (Cumulative Impact of All Construction Elements on Landowner Lands)
			Air Quality	Section 15.3.1 (Potential Construction Dust Impacts on Specific Landowner Lands)
WSP_SUB_75	66	Laois County Council	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)
WSP_SUB_76	76	Melissa Anne Kenny	Planning	Section 3.2.3 (Balanced Regional Development)
			Consultation and Communication	Section 4.2.1 (Public Consultation Adequacy)
			Consideration of Reasonable Alternatives	Section 5.3.5 (Alternative Location for Water Treatment Plant)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project) Section 8.3.4 (Potential Operational Noise Impacts from the Break Pressure Tank)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.2.2 (General Safety Concerns)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic) Section 9.3.3 (Potential Impact of the Construction of the Break Pressure Tank on Traffic)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.2.4 (Potential Impact of Leakages during the Operational Phase on Biodiversity)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.4 (Potential Impact of Leakages during the Operational Phase on Water)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access) Section 14.3.4 (Potential Impact on Equine Stock / Enterprise)
			Air Quality	Section 15.2.1 (Potential for Odour Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities)
			Human Health	Section 18.2.1 (Potential General Health Impacts)
			Landscape and Visual	Section 19.2.1 (Potential Impact of the Scale and Nature of the Proposed Project on the Landscape) Section 19.2.2 (Adequacy of Proposed Screening and Buffer Zones for the Proposed Project)
			Risk of Major Accidents and Disasters	Section 23.3.1 (Risk of Infrastructure Failures)
WSP_SUB_77	100	Shane Mathews	Overarching Matters	Section 2.5 (Project Costs / Cost Benefit)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.4 (Desalination) Section 5.2.5 (Rainwater Harvesting and Greywater Reuse) Section 5.2.6 (Demand Management) Section 5.2.9 (Alternative Assessment)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Soils, Geology and Hydrogeology	Section 13.2.2 (Potential for Contamination of Water Sources from Mines)
			Agriculture	Section 14.2.4 (The following submissions raised concerns about the potential for the spread of disease across agricultural land as a result of the construction of the Proposed Project: Risk of Spread of Disease Across Agricultural Land)
			Human Health	Section 18.3.3 (Potential Health Impacts Associated with Flood Events in the Shannon Basin)
WSP_SUB_78	112	Waterways Ireland*	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)
			Population	Section 17.4.1 (Navigation Assessment for Lough Derg)
			Material Assets	Section 21.4.2 (Interactions and Recommended Conditions for Planning)
WSP_SUB_79	35	Failte Ireland*	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.4.2 (Considerations for Tourism Assessment) Section 17.4.3 (Absence of Tourism-Related Strategies and Policies)
			Landscape and Visual	Section 19.4.1 (Protection of the Irish Landscape)
WSP_SUB_80	2	An Taisce*	Overarching Matters	Section 2.2 (Population Growth Forecast)
			Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.6 (Demand Management)
			Project Description	Section 6.4.8 (Power Purchase Agreement)
			Biodiversity	Section 10.4.1 (Assessment of Abstraction from the Parteen Basin) Section 10.4.2 (Adequacy of Fish Surveys) Section 10.4.3 (Mitigation Measures / Survey Conditions) Section 10.4.5 (Assessment Against Various Climate Change Scenarios) Section 10.4.20 (Community Benefits Scheme and Biodiversity Conservation) Section 10.4.21 (Avoiding Impacts to Wetlands and Bogs)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water (General)	Section 12.4.4 (Mitigation Measures for Watercourse Crossings) Section 12.4.5 (Potential Surface Water Runoff Impacts)
			Soils, Geology and Hydrogeology	Section 13.4.1 (Potential for Soil Erosion Impacts)
			Risk of Major Accidents and / or Disasters	Section 23.4.1 (Risk of Infrastructure Failures)
			Natura Impact Statement	Section 25.4.1 (Ecological Adequacy of the Existing Regime) Section 25.4.3 (Compliance with Article 10 of the Habitats Directive)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.4.1 (Assessment Against Various Climate Change Scenarios) Section 26.4.5 (Compliance of the Flow with the Water Framework Directive)
WSP_SUB_81	4	Brian Farrell	Material Assets	Section 21.3.2 (Potential Impact on Cushaling Wind Farm)
			Cumulative Effects and Interactions	Section 22.4.3.3 (Potential Cumulative Impact with Cushaling Wind Farm)
WSP_SUB_82	16	Councillor Rita McInerney	Planning	Section 3.2.3 (Balanced Regional Development)
			Consideration of Reasonable Alternatives	Section 5.2.9 (Alternative Assessment)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.4 (Future Climate Change)
WSP_SUB_83	22	National Parks and Wildlife Service (NPWS) - Development Applications Unit (DAU)*	Overarching Matters	Section 2.9 (Consent Condition)
			Biodiversity	Section 10.4.3 (Mitigation Measures / Survey Conditions) Section 10.4.9 (Potential Impact of the Proposed Project on Otter) Section 10.4.10 (Potential for Disturbance Impacts on Whooper Swans) Section 10.4.11 (Potential Impact of the Proposed Project on Bat Species) Section 10.4.12 (Potential Impact of the Proposed Project on Marsh Fritillary) Section 10.4.13 (Potential Impact of the Proposed Project on Hen Harrier) Section 10.4.14 (Potential Impact of the Proposed Project on Molluscs) Section 10.4.15 (Determining Ecological Significant Effects) Section 10.4.16 (Proposed Abstraction and Treatment) Section 10.4.17 (Proposed New Water Treatment Plant Access Road) Section 10.4.18 (Barriers to Connectivity: Salmon and Lamprey Species)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 10.4.19 (Potential Disturbance Effect on Wintering Waterfowl in Parteen Basin)
			Water (Modelling)	Section 11.4.6 (Cumulative Effects in the Hydrological Model) Section 11.4.7 (Verification of maximum water abstraction rates)
			Cultural Heritage	Section 20.4.4 (Adequacy of Archaeological Surveys / Proposed Conditions)
			Natura Impact Statement	Section 25.4.2 (Assessment of Potential Impacts on White-Clawed Crayfish) Section 25.4.4 (Potential Impacts on Alkaline Fen Habitat) Section 25.4.5 (Effects on River Little Brosna Callows SPA) Section 25.4.6 (Effects on Severe Drought Low Water Level Duration in Designated Sites) Section 25.4.7 (In-Combination Effects in the Hydrological Model)
WSP_SUB_84	27	Eamonn Dooley	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project)
			Consideration of Reasonable Alternatives	Section 5.3.3 (Alternative Design on Specific Landowner Lands)
			Construction and Commissioning	Section 7.3.2 (Duration of Construction Elements on Specific Landowner Lands) Section 7.3.4 (Acquisition of Construction Compound Areas on Specific Landowner Lands)
			Agriculture	Section 14.3.2 (Potential Impact of Acquisition on Future Development on Specific Landowner Lands) Section 14.3.5 (Potential Impact of Temporary Acquisition on Farming Enterprise) Section 14.3.6 (Potential Impact on Receiving Funding / Payments)
WSP_SUB_85	31	Environmental Protection Agency (EPA)*	Overarching Matters	Section 2.3 (Abstraction Licensing)
WSP_SUB_86	38	Fintan Dunne	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project)
			Consideration of Reasonable Alternatives	Section 5.3.3 (Alternative Design on Specific Landowner Lands)
			Construction and Commissioning	Section 7.3.2 (Duration of Construction Elements on Specific Landowner Lands) Section 7.3.4 (Acquisition of Construction Compound Areas on Specific Landowner Lands) Section 7.3.5 (Proposed Construction Compound Design)
			Agriculture	Section 14.3.5 (Potential Impact of Temporary Acquisition on Farming Enterprise) Section 14.3.6 (Potential Impact on Receiving Funding / Payments)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 14.3.7 (Land Condition Post-Construction)
WSP_SUB_87	44	Geological Survey of Ireland (GSI)	Soils, Geology and Hydrogeology	Section 13.4.2 (Updated Data Sources) Section 13.4.3 (Request for Future Data)
WSP_SUB_88	48	Inland Fisheries Ireland (IFI)*	Project Description	Section 6.4.1 (Future Amendments to Abstraction) Section 6.4.4 (Sustainability of the Proposed Pipeline) Section 6.4.5 (Decommissioning of Water Treatment Plants)
			Construction and Commissioning	Section 7.4.1 (Testing and Commissioning)
			Biodiversity	Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.4.3 (Mitigation Measures / Survey Conditions) Section 10.4.6 (Potential Fisheries Impacts) Section 10.4.7 (Existing and Future Pressures on Special Conservation Areas Linked to Abstraction) Section 10.4.8 (Potential Downstream Effects of the Proposed Project on Tailrace / Old Channel)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.7 (Downstream Effects on the River Shannon) Section 11.2.8 (Upstream Effects on the River Shannon) Section 11.4.2 (Modelling of Potential Fisheries Impacts)
			Water (General)	Section 12.4.2 (Risk of Potential Impacts to Watercourses due to Required Watercourse Crossings) Section 12.4.3 (Risk of Pollution to Kilmastulla River) Section 12.4.4 (Mitigation Measures for Watercourse Crossings)
			Resource and Waste Management	Section 22.2.1 (Management of Waste at the Proposed Water Treatment Plant)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.4.2 (Adequacy of the Water Framework Directive Assessment for Potential Impacts on Fish) Section 26.4.3 (Transfer of Water Between River Catchments and Article 4(8) Basin Integrity)
WSP_SUB_89	50	James Cullen Senior	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.3.1 (Planning Drawings)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Project Description	Section 6.3.3 (Design Change Requests on Specific Landowner Lands) Section 6.3.4 (Potential Safety Impact of Proposed Layby at Landowner Property Access)
			Construction and Commissioning	Section 7.3.2 (Duration of Construction Elements on Specific Landowner Lands) Section 7.3.5 (Proposed Construction Compound Design)
			Agriculture	Section 14.2.1 (Disruption to Agriculture and Farmlands) Section 14.3.5 (Potential Impact of Temporary Acquisition on Farming Enterprise) Section 14.3.6 (Potential Impact on Receiving Funding / Payments)
WSP_SUB_90	51	James Waldron (Corr Property Consultants on behalf of)	Consideration of Reasonable Alternatives	Section 5.3.1 (Alternative Route Option on Specific Landowner Lands)
			Project Description	Section 6.3.1 (Adequacy of Design Details on Landowner Lands)
			Noise and Vibration	Section 8.3.1 (Potential Construction Noise Impacts at Specific Landowner Lands)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity)
			Soils, Geology and Hydrogeology	Section 13.3.1 (Potential Impacts on Peatland on Specific Landholdings)
			Agriculture	Section 14.3.3 (Adequacy of Impact Assessment on Farming Enterprises) Section 14.3.4 (Potential Impact on Equine Stock / Enterprise) Section 14.3.8 (Risks Associated with Pipeline Routing)
			Air Quality	Section 15.3.1 (Potential Construction Dust Impacts on Specific Landowner Lands)
WSP_SUB_91	52	James Waldron (McEnteggert Consultancy on behalf of)	Planning	Section 3.3.6 (Inclusion on the Compulsory Purchase Order Schedule)
			Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Consideration of Reasonable Alternatives	Section 5.3.1 (Alternative Route Option on Specific Landowner Lands) Section 5.3.4 (Electricity Supply Design Alternative on Specific Landowner Lands)
			Traffic and Transport	Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase)
			Soils, Geology and Hydrogeology	Section 13.3.2 (Potential Soil Compaction Impacts on Specific Landholdings)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access) Section 14.3.3 (Adequacy of Impact Assessment on Farming Enterprises) Section 14.3.4 (Potential Impact on Equine Stock / Enterprise)

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Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 14.3.14 (Potential Impacts on Land Drainage on Specific Landholdings)
WSP_SUB_92	61	Judith Kohler	Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Consideration of Reasonable Alternatives	Section 5.3.1 (Alternative Route Option on Specific Landowner Lands)
			Project Description	Section 6.3.1 (Adequacy of Design Details on Landowner Lands)
			Construction and Commissioning	Section 7.3.1 (Proposed Construction Access)
			Traffic and Transport	Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.3.2 (Potential Biodiversity Impact of Hedgerow Removal on Specific Landowner Lands)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Soils, Geology and Hydrogeology	Section 13.2.1 (Potential Soils Impacts)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access) Section 14.3.1 (Potential Impact of Construction Dust on Specific Landowner Lands) Section 14.3.2 (Potential Impact of Acquisition on Future Development on Specific Landowner Lands) Section 14.3.14 (Potential Impacts on Land Drainage on Specific Landholdings)
			Air Quality	Section 15.3.1 (Potential Construction Dust Impacts on Specific Landowner Lands)
WSP_SUB_93	80	Michael McKeogh	Climate	Section 16.2.1 (Potential Climate Impacts) Section 16.2.2 (Potential Climate Impact from Hedgerow / Tree Removal)
			Planning	Section 3.2.3 (Balanced Regional Development)
			Consultation and Communication	Section 4.2.1 (Public Consultation Adequacy)
			Consideration of Reasonable Alternatives	Section 5.3.5 (Alternative Location for Water Treatment Plant)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project) Section 8.3.3 (Potential Operational Noise Impacts from the Water Treatment Plant)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 9.2.2 (General Safety Concerns) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.2.6 (Suitability of the Existing Road Network to Accommodate Construction Traffic) Section 9.3.2 (Potential Impact of the Construction and Operation of the Water Treatment Plant on Traffic)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.3.9 (Potential Impact of the Proposed Water Treatment Plant on Biodiversity)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water)
			Soils, Geology and Hydrogeology	Section 13.2.3 (Potential for Contamination of Soils during the Operational Phase)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access) Section 14.3.9 (Permanent Loss of Agricultural Land)
			Air Quality	Section 15.2.1 (Potential for Odour Impacts)
			Population	Section 17.2.1 (Potential Impact on Local Communities)
			Human Health	Section 18.2.1 (Potential General Health Impacts)
			Landscape and Visual	Section 19.2.1 (Potential Impact of the Scale and Nature of the Proposed Project on the Landscape) Section 19.2.2 (Adequacy of Proposed Screening and Buffer Zones for the Proposed Project)
WSP_SUB_94	85	Health Service Executive (HSE) - National Office for Environmental Health Services*	Overarching Matters	Section 2.3 (Abstraction Licensing)
			Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.4.5 (Community Benefit Scheme)
			Construction and Commissioning	Section 7.4.2 (Recommended Construction Phase Conditions)
			Noise and Vibration	Section 8.4.1 (Potential Noise Impacts at Peamount Hospital)
			Air Quality	Section 15.4.1 (Potential Dust Impacts at Peamount Hospital)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Human Health	Section 18.3.2 (Potential Health Impacts on Patients at Peamount Hospital) Section 18.4.1 (Food Premises)
			Landscape and Visual	Section 19.3.1 (Potential Visual Impacts on Specific Landowner Lands)
WSP_SUB_95	86	National Transport Authority (NTA)	Material Assets	Section 21.3.1 (Recommended Conditions for Planning)
WSP_SUB_96	88	Office of Public Works (OPW)*	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project)
			Project Description	Section 6.4.3 (Architectural Design)
			Water (General)	Section 12.4.1 (Flood Data)
			Cultural Heritage	Section 20.4.1 (Potential Impact to National Monuments at Ashley Park and Ardcroney)
WSP_SUB_97	98	Seamus Cullen	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.3.2 (Consideration of Planning Requirements for Proposed Access)
			Consideration of Reasonable Alternatives	Section 5.3.2 (Alternative Access on Specific Landowner Lands)
			Project Description	Section 6.3.3 (Design Change Requests on Specific Landowner Lands) Section 6.3.4 (Potential Safety Impact of Proposed Layby at Landowner Property Access)
			Traffic	Section 9.2.2 (General Safety Concerns) Section 9.2.4 (Impacts on Agricultural Access and Farm Operations During the Construction Phase) Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points)
			Agriculture	Section 14.2.2 (Potential Loss of Agricultural Access)
WSP_SUB_98	105	The Heritage Council*	Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project)
			Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Biodiversity	Section 10.2.6 (Potential for Aquatic Habitat Loss or Damage) Section 10.4.3 (Mitigation Measures / Survey Conditions) Section 10.4.4 (Geographical Value Ascribed to Habitats)
			Water (Modelling)	Section 11.4.4 (Recommended Planning Conditions)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Landscape and Visual	Section 19.4.2 (Screening Planting) Section 19.4.3 (Site-Specific Design)
			Cultural Heritage	Section 20.4.2 (Geophysical Surveying and LiDAR Data) Section 20.4.3 (Recommended Conditions)
WSP_SUB_99	111	Transport Infrastructure Ireland (TII)*	Overarching Matters	Section 2.9 (Consent Condition)
			Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.4.1 (Planning Policy Compliance)
			Project Description	Section 6.4.10 (Adequacy of Design Information Regarding the Strategic Road Network)
			Construction and Commissioning	Section 7.4.9 (Adequacy of Design Information Regarding Temporary Access to the Strategic Road Network)
			Traffic and Transport	Section 9.4.1 (Traffic Management Plan (TMP)) Section 9.4.2 (Road Safety Audits)
			Material Assets	Section 21.4.1 (Impact on the Strategic Road Network)
WSP_SUB_100	1	A.M.R Limited	Planning	Section 3.3.5 (Statutory Basis for Abstraction and Acquisition on Landowner Lands)
			Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Project Description	Section 6.2.1 (Adequacy of General Design Information)
			Agriculture	Section 14.3.3 (Adequacy of Impact Assessment on Farming Enterprises)
WSP_SUB_101	28	Edward Frayne	Planning	Section 3.2.2 (Challenging the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.2.2 (Potential Biodiversity Impacts to the River Shannon) Section 10.3.2 (Potential Biodiversity Impact of Hedgerow Removal on Specific Landowner Lands)
			Soils, Geology and Hydrogeology	Section 13.2.1 (Potential Soils Impacts)
			Agriculture	Section 14.2.1 (Disruption to Agriculture and Farmlands) Section 14.2.3 (Potential Security Impacts for Landowners)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 14.3.14 (Potential Impacts on Land Drainage on Specific Landholdings)
			Climate	Section 16.2.2 (Potential Climate Impact from Hedgerow / Tree Removal) Section 16.3.1 (Inadequate Assessment of Carbon Dioxide Release due to Mass Soil Excavation)
WSP_SUB_102	39	Fonsell Ltd	Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Consideration of Reasonable Alternatives	Section 5.3.1 (Alternative Route Option on Specific Landowner Lands)
			Construction and Commissioning	Section 7.3.2 (Duration of Construction Elements on Specific Landowner Lands) Section 7.3.3 (Construction Working Area on Specific Landowner Lands)
			Project Description	Section 6.2.1 (Adequacy of General Design Information) Section 6.3.1 (Adequacy of Design Details on Landowner Lands)
			Agriculture	Section 14.3.2 (Potential Impact of Acquisition on Future Development on Specific Landowner Lands)
WSP_SUB_103	59	John Quinn and Sandra Frayne	Planning	Section 3.3.5 (Statutory Basis for Abstraction and Acquisition on Landowner Lands)
			Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Project Description	Section 6.3.3 (Design Change Requests on Specific Landowner Lands)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project) Section 8.3.1 (Potential Construction Noise Impacts at Specific Landowner Lands)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.3.1 (Potential Biodiversity Impact of New Stream Crossing on Specific Landowner Lands) Section 10.3.2 (Potential Biodiversity Impact of Hedgerow Removal on Specific Landowner Lands) Section 10.3.3 (Biodiversity Surveys on Landowner Lands) Section 10.3.4 (Potential Washout Impact of the Proposed Project on the Lyreen River)
			Water (General)	Section 12.3.1 (Potential Water Impact of New Stream Crossing on Landowner Lands) Section 12.3.2 (Potential Washout Impact of the Proposed Project on the Lyreen River)
			Agriculture	Section 14.3.4 (Potential Impact on Equine Stock / Enterprise) Section 14.3.10 (Impact of Hedgerow / Tree Boundary Removal on Livestock)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 14.3.12 (Impact of Proposed New Stream Crossings During Construction) Section 14.3.14 (Potential Impacts on Land Drainage on Specific Landholdings)
			Climate	Section 16.2.2 (Potential Climate Impact from Hedgerow / Tree Removal)
			Cultural Heritage	Section 20.3.1 (Archaeological Surveys on Specific Landowner Lands)
WSP_SUB_104	90	Peamount Healthcare	Consultation and Communication	Section 4.2.4 (Adequacy of Previous Consultation Responses)
			Consideration of Reasonable Alternatives	Section 5.3.2 (Alternative Access on Specific Landowner Lands)
			Project Description	Section 6.3.3 (Design Change Requests on Specific Landowner Lands)
			Noise and Vibration	Section 8.3.2 (Potential Noise and Vibration Impacts from the TPR on Peamount Hospital)
			Traffic and Transport	Section 9.2.5 (Site Access Arrangements and Potential Conflicts with Existing Access Points) Section 9.3.1 (Potential Traffic Impacts at Peamount Hospital)
			Air Quality	Section 15.3.2 (Potential Construction Dust Impacts on Peamount Hospital)
			Human Health	Section 18.3.1 (Mis-Classification of Sensitive Health Receptors) Section 18.3.2 (Potential Health Impacts on Patients at Peamount Hospital)
			Landscape and Visual	Section 19.3.1 (Potential Visual Impacts on Specific Landowner Lands)
			Cultural Heritage	Section 20.3.1 (Archaeological Surveys on Specific Landowner Lands)
WSP_SUB_105	95	Robert Frayne	Planning	Section 3.3.5 (Statutory Basis for Abstraction and Acquisition on Landowner Lands)
			Consultation and Communication	Section 4.2.5 (Landowner-Specific Engagement)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project) Section 8.3.1 (Potential Construction Noise Impacts at Specific Landowner Lands)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.3.2 (Potential Biodiversity Impact of Hedgerow Removal on Specific Landowner Lands) Section 10.3.4 (Potential Washout Impact of the Proposed Project on the Lyreen River)
			Water (General)	Section 12.3.2 (Potential Washout Impact of the Proposed Project on the Lyreen River)

Response to Submissions Report

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Agriculture	Section 14.3.4 (Potential Impact on Equine Stock / Enterprise) Section 14.3.10 (Impact of Hedgerow / Tree Boundary Removal on Livestock) Section 14.3.12 (Impact of Proposed New Stream Crossings During Construction) Section 14.3.14 (Potential Impacts on Land Drainage on Specific Landholdings)
			Climate	Section 16.2.2 (Potential Climate Impact from Hedgerow / Tree Removal)
WSP_SUB_106	68	Liam Minehan	Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source)
			Biodiversity	Section 10.2.2 (Potential Biodiversity Impacts to the River Shannon)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions)
WSP_SUB_107	72	Mark Kinsella	Planning	Section 3.3.3 (Notification of Planning)
			Agriculture	Section 14.3.11 (Disproportionate Interference of the Proposed Project on Farmland)
WSP_SUB_108	77	Michael and Mary Kinsella	Planning	Section 3.3.3 (Notification of Planning)
			Agriculture	Section 14.3.2 (Potential Impact of Acquisition on Future Development on Specific Landowner Lands) Section 14.3.9 (Permanent Loss of Agricultural Land)
WSP_SUB_109	79	Michael Hoey	Additional Topics	Section 27.1 (Regulatory Compliance)
WSP_SUB_110	14	Clare County Council*	Overarching Matters	Section 2.3 (Abstraction Licensing) Section 2.7 (Environmental Impact Assessment Process Procedural Risks)
			Planning	Section 3.2.3 (Balanced Regional Development) Section 3.4.5 (Community Benefit Scheme)
			Consultation and Communication	Section 4.2.2 (Public Participation - Compliance with the Aarhus Directive)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.5 (Rainwater Harvesting and Greywater Reuse) Section 5.2.6 (Demand Management)
			Biodiversity	Section 10.4.5 (Assessment Against Various Climate Change Scenarios) Section 10.4.23 (Reliance on Outdated Ecological Survey Data)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.3 (Maintaining the Minimum Compensation Flow) Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.7 (Downstream Effects on the River Shannon) Section 11.2.8 (Upstream Effects on the River Shannon)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.4.6 (Landscape Abstraction Impacts and Changes to Seasonal Flow)
			Climate	Section 16.2.5 (Alignment of the Proposed Project with Climate Legislation) Section 16.3.4 (Energy Demand and Carbon Emissions) Section 16.4.1 (Potential Peatland Carbon Impacts)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon)
			Natura Impact Statement	Section 25.2.1 (Compliance with the Habitats Directive) Section 25.2.2 (Compliance with the Birds Directive) Section 25.4.8 (Consideration of Baseline Conditions for the Conservation Objectives of the Lower River Shannon SAC) Section 25.4.9 (Errors in Appropriate Assessment Methodology) Section 25.4.10 (Potential Impacts on Wetlands and Raised Bogs) Section 25.4.11 (Cumulative Hydrological Pressures and Migratory Fish) Section 25.4.12 (Precautionary Principle) Section 25.4.21 (Compliance of the Natura Impact Statement)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive) Section 26.3.2 (Reliance of the Assessment on Average Flow Metrics) Section 26.3.3 (Compliance with Article 4 Requirements) Section 26.4.5 (Compliance of the Flow with the Water Framework Directive)
WSP_SUB_111	64	Kildare County Council*	Overarching Matters	Section 2.9 (Consent Condition)
			Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.4.5 (Community Benefit Scheme) Section 3.4.6 (Biodiversity Net Gain Policy)
			Project Description	Section 6.4.6 (Adequacy of Design Detail Provided for County Kildare)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Noise and Vibration	Section 8.4.2 (Planning Conditions Specific to the Kildare County Council Area)
			Traffic and Transport	Section 9.4.2 (Road Safety Audits) Section 9.4.3 (Planning Conditions Specific to the Kildare County Council Area)
			Biodiversity	Section 10.4.22 (Assessment of County Wetland Sites in Kildare and Compliance with the Kildare County Development Plan Policies and Objectives) Section 10.4.23 (Reliance on Outdated Ecological Survey Data) Section 10.4.24 (Biodiversity Net Gain) Section 10.4.25 (Planning Conditions Specific to the Kildare County Council Area)
			Water (General)	Section 12.4.7 (Planning Conditions Specific to the Kildare County Council Area)
			Air Quality	Section 15.4.2 (Planning Conditions Specific to the Kildare County Council Area)
			Cultural Heritage	Section 20.4.5 (Planning Conditions Specific to the Kildare County Council Area)
			Resource and Waste Management	Section 22.3.1 (Planning Conditions Specific to the Kildare County Council Area)
WSP_SUB_112	69	Limerick City and County Council*	Overarching Matters	Section 2.3 (Abstraction Licensing) Section 2.5 (Project Costs / Cost Benefit)
			Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development)Section 3.3.3 (Notification of Planning) Section 3.4.1 (Planning Policy Compliance) Section 3.4.2 (Security of Supply) Section 3.4.5 (Community Benefit Scheme)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.4 (Desalination) Section 5.4.2 (Alternative Regional Development)
			Project Description	Section 6.2.2 (Capacity of the Proposed Pipeline) Section 6.4.2 (Future Expansion and Increased Abstraction) Section 6.4.7 (Storage Capacity at the Proposed Termination Point Reservoir)
			Traffic and Transport	Section 9.4.4 (Planning Conditions Specific to the Limerick Country Council Area)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Biodiversity	Section 10.2.2 (Potential Biodiversity Impacts to the River Shannon) Section 10.2.3 (Potential Impact of the Proposed Abstraction on Habitats and Species) Section 10.4.26 (Potential Impact on Restoring Fish Passage) Section 10.4.27 (Potential Impact of the Proposed Project on Fish)
			Water (Modelling)	Section 11.2.1 (Assessment of Low Flow and Drought Conditions) Section 11.2.2 (Reduction in the Flow Down the Old River Shannon) Section 11.2.3 (Maintaining the Minimum Compensation Flow) Section 11.2.4 (Future Climate Change) Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.2.7 (Downstream Effects on the River Shannon) Section 11.2.11 (Additional Water-Related Mitigation and Monitoring Measures) Section 11.4.3 (Water Abstraction – Adaptive Management)
			Water (General)	Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.4.8 (Planning Conditions Specific to the Limerick Country Council Area)
			Climate	Section 16.3.2 (Potential Impact of the Proposed Project on Renewable Energy Generation)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.3.2 (Potential Recreation and Tourism Impacts of Reduction in Fish Stock)
			Material Assets	Section 21.4.4 (Potential Impact to the Shannon Estuary and Port)
			Cumulative Effects and Interactions	Section 24.3.1 (Potential Cumulative Impact with the Shannon Fish Passage Study)
			Natura Impact Statement	Section 25.4.11 (Cumulative Hydrological Pressures and Migratory Fish) Section 25.4.13 (Potential Impact on Special Conservation Areas and Special Protection Areas in Limerick) Section 25.4.15 (Potential Hydrological or Ecological Interactions with Other Designated Sites) Section 25.4.16 (Adequacy of Abstraction-Related Assessments for Limerick) Section 25.4.17 (Pathways for Invasive Species Introduction or Pathogen Transfer) Section 25.4.18 (Compliance of the Flow with the Habitats Directive)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive) Section 26.4.4 (Compliance of the Proposed Abstraction with the Water Framework Directive) Section 26.4.5 (Compliance of the Flow with the Water Framework Directive)
WSP_SUB_113	87	Offaly County Council*	Overarching Matters	Section 2.8 (Mitigation Measures in the Environmental Impact Assessment Report and the Natura Impact Statement) Section 2.9 (Consent Condition) Section 2.10 (Statutory Consents)
			Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.4.3 (Future Take Offs) Section 3.4.4 (Development Contributions and Bonds) Section 3.4.5 (Community Benefit Scheme)
			Consultation and Communication	Section 4.4.1 (Project Management)
			Construction and Commissioning	Section 7.4.3 (Construction Disturbance in County Offaly)
			Noise and Vibration	Section 8.4.3 (Planning Conditions Specific to the Offaly County Council Area)
			Traffic and Transport	Section 9.4.5 (Planning Conditions Specific to the Offaly Country Council Area)
			Biodiversity	Section 10.4.11 (Potential Impact of the Proposed Project on Bat Species) Section 10.4.28 (Permanent Loss of Badger Setts) Section 10.4.29 (Consideration of Invasive Species) Section 10.4.30 (Planning Conditions Specific to the Offaly Country Council Area)
			Water (Modelling)	Section 12.4.9 (Planning Conditions Specific to the Offaly Country Council Area)
			Water (General)	Section 12.4.9 (Planning Conditions Specific to the Offaly Country Council Area)
			Soils, Geology and Hydrogeology	Section 13.4.4 (Potential Impact on Group Water Schemes)
			Agriculture	Section 14.2.4 (The following submissions raised concerns about the potential for the spread of disease across agricultural land as a result of the construction of the Proposed Project: Risk of Spread of Disease Across Agricultural Land)
			Air Quality	Section 15.4.3 (Planning Conditions Specific to the Offaly County Council Area)
			Cultural Heritage	Section 20.4.6 (Planning Conditions Specific to the Offaly Country Council Area)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Material Assets	Section 21.4.3 (Potential Impact on the Structural Integrity of County Offaly's Road Network) Section 21.4.5 (Planning Conditions Specific to the Offaly County Council Area)
			Resource and Waste Management	Section 22.3.2 (Planning Conditions Specific to the Offaly County Council Area)
			Cumulative Effects and Interactions	Section 24.4.1 (Status of Other Projects)
			Natura Impact Statement	Section 25.4.14 (Mitigation Measures)
WSP_SUB_114	108	Tipperary County Council* / ***	Overarching Matters	Section 2.3 (Abstraction Licensing) Section 2.5 (Project Costs / Cost Benefit) Section 2.8 (Mitigation Measures in the Environmental Impact Assessment Report and the Natura Impact Statement) Section 2.9 (Consent Condition)
			Planning	Section 3.2.1 (Support / Acknowledgement for the Need for the Proposed Project) Section 3.2.2 (Challenging the Need for the Proposed Project) Section 3.2.3 (Balanced Regional Development) Section 3.4.1 (Planning Policy Compliance) Section 3.4.4 (Development Contributions and Bonds) Section 3.4.5 (Community Benefit Scheme)
			Consideration of Reasonable Alternatives	Section 5.2.1 (Leakage Reduction) Section 5.2.2 (Alternative Source) Section 5.2.3 (Groundwater Alternatives) Section 5.2.4 (Desalination) Section 5.2.5 (Rainwater Harvesting and Greywater Reuse) Section 5.2.6 (Demand Management) Section 5.2.7 (Alternative Route(s)) Section 5.2.9 (Alternative Assessment) Section 5.4.1 (An Fórum Uisce Internal Review on the Eastern Midlands Water Supply Project 2019) Section 5.4.3 (Alternative Access to the Construction Compound at Lisgarraiff)
			Project Description	Section 6.4.9 (Access Design and Sightlines) Section 6.4.11 (Wastewater Infrastructure)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 6.4.12 (Adequacy of Information Regarding the Depth of the Proposed Pipeline) Section 6.4.13 (Supply of Raw Water from Ardnacrusha Dam) Section 6.4.14 (Request for Further Investigation of Mitigation for Leakage) Section 6.4.15 (Recommended Planning Conditions from Tipperary County Council)
			Construction and Commissioning	Section 7.4.4 (Reinstatement and Security of Temporary Construction Compounds) Section 7.4.5 (Recommended Construction Phase Conditions from Tipperary County Council) Section 7.4.6 (Clarification on Response Plan for Leakages) Section 7.4.7 (Adequacy of Mitigation Measures in the Construction Environmental Management Plan) Section 7.4.8 (Excessive Land-Take at the Water Treatment Plant Site)
			Noise and Vibration	Section 8.2.1 (General Noise Impacts Associated with the Proposed Project) Section 8.4.4 (Planning Conditions Specific to the Tipperary County Council Area)
			Traffic and Transport	Section 9.2.1 (General Construction Traffic Impacts) Section 9.4.6 (Potential Traffic Impacts in the Tipperary Country Council Area) Section 9.4.7 (Planning Conditions Specific to the Tipperary Country Council Area)
			Biodiversity	Section 10.2.1 (Potential Impact of the Proposed Project on Biodiversity) Section 10.2.2 (Potential Biodiversity Impacts to the River Shannon) Section 10.3.8 (Adequacy of the Ecological Assessment for the Shannon) Section 10.3.12 (Potential Impacts to Littoral and Shoreline Habitats) Section 10.4.11 (Potential Impact of the Proposed Project on Bat Species) Section 10.4.27 (Potential Impact of the Proposed Project on Fish) Section 10.4.28 (Permanent Loss of Badger Setts) Section 10.4.31 (Water Modelling and Ecological Assessment) Section 10.4.32 (Assessment of Groundwater Dependent Terrestrial Ecosystems) Section 10.4.33 (Impact of Aquatic Invasive Species on Native Fauna) Section 10.4.34 (Potential Effect of Chlorine on Sensitive Receptors) Section 10.4.35 (Recommended Planning Conditions from Tipperary County Council) Section 10.4.36 (Restoring the Lower River Shannon SAC)
			Water (Modelling)	Section 11.2.4 (Future Climate Change) Section 11.2.1 (Assessment of Low Flow and Drought Conditions)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
				Section 11.2.6 (Whether Environmental Recovery may be Constrained) Section 11.4.1 (Availability of water in a drought) Section 11.4.3 (Water Abstraction – Adaptive Management) Section 11.4.4 (Recommended Planning Conditions) Section 11.4.5 (Assimilative Capacity for the Lower Shannon)
			Water (General)	Section 12.2.1 (Potential Impact of the Proposed Project on Water) Section 12.2.2 (Compliance of the Proposed Project with Water-Related Legislation) Section 12.4.10 (Flood Risk and Mitigation) Section 12.4.11 (Adequacy of Mitigation Measures)
			Soils, Geology and Hydrogeology	Section 13.2.1 (Potential Soils Impacts) Section 13.4.513.4.5 (Disruption to Groundwater Flow and Quality from Dewatering and Contamination Risks)
			Agriculture	Section 14.2.1 (Disruption to Agriculture and Farmlands) Section 14.2.4 (The following submissions raised concerns about the potential for the spread of disease across agricultural land as a result of the construction of the Proposed Project: Risk of Spread of Disease Across Agricultural Land) Section 14.2.5 (Potential Sterilisation of Lands and Impacts to Land Use) Section 14.3.7 (Land Condition Post-Construction) Section 14.3.14 (Potential Impacts on Land Drainage on Specific Landholdings)
			Air Quality	Section 15.2.2 (General Construction Dust Impacts)
			Climate	Section 16.2.5 (Alignment of the Proposed Project with Climate Legislation) Section 16.4.2 (Carbon Emissions Assessment)
			Population	Section 17.2.2 (Potential Impact on Local Tourism and Amenity Impacts of the Proposed Project on Lough Derg and the Lower River Shannon) Section 17.4.4 (Potential Tourism Impacts at Lough Derg / Parteen Basin)
			Human Health	Section 18.3.5 (Potential for Trihalomethane in Drinking Water)
			Landscape and Visual	Section 19.4.4 (Potential Visual Impacts from the RWI&PS)
			Cultural Heritage	Section 20.4.7 (Planning Conditions Specific to the Tipperary Country Council Area)
			Material Assets	Section 21.4.6 (Planning Conditions Specific to the Tipperary County Council Area)

Unique ID	ACP Reference Number**	Name of Individual or Organisation	Topics Raised (as per Structure of this Report)	Responses Provided in the Following Sections of this Report
			Resource and Waste Management	Section 22.3.3 (Planning Conditions Specific to the Tipperary County Council Area)
			Cumulative Effects and Interactions	Section 24.3.1 (Potential Cumulative Impact with the Shannon Fish Passage Study) Section 24.4.2 (Cumulative Impacts with ESB at Parteen Basin)
			Natura Impact Statement	Section 25.4.19 (Determination of the Risk of Impact on Lower Shannon Special Conservation Area) Section 25.4.20 (Assessment of Direct Effects of Abstraction on European Sites) Section 25.4.21 (Compliance of the Natura Impact Statement)
			Water Status Impact Assessment Report (Water Framework Directive)	Section 26.2.1 (Compliance with the Water Framework Directive) Section 26.3.326.3.3 (Compliance with Article 4 Requirements) Section 26.3.4 (Reliance on Heavily Modified Water Body Designation) Section 26.3.5 (Assessment Based on UKTAG Methodology) Section 26.4.3 (Transfer of Water Between River Catchments and Article 4(8) Basin Integrity) Section 26.4.4 (Compliance of the Proposed Abstraction with the Water Framework Directive)
			Additional Topics	Section 27.2 (Risk of Geotechnical Risks due to Water Leaking from Dublin Pipes) Section 27.4 (Compliance with the Environmental Liability Directive and Article 191(2) of Treaty on the Functioning of the European Union)
* Indicates that this submission is by a Prescribed Body ** As per ACP Letter dated 09 April 2026 *** The appendices attached to the Tipperary Count Councill submission contained submissions from the following observers: Mattie McGrath TD (see WSP_SUB_21), Pamela Quirke O'Meara (see WSP_SUB_24), River Shannon Environmental Protection Alliance Company (see WSP_SUB_26), Councillor Fiona Bonfield, Tipperary County Council, Alan Kelly TD, Councillor Louise Morgan-Walsh (see WSP_SUB_36), Councillor Dr. Phyll Bugler (see WSP_SUB_37), Councillor Séamie Morris (see WSP_SUB_38) and Friends of the Irish Environment (see WSP_SUB_45). Please note that the responses for the issues raised by these observers are dealt with under the respective individual observer and not the Tipperary County Council response.				