



Appropriate Assessment Screening Report

for

Permission for alterations to the existing building and all associated site works at St. Enda's on Sleaty St, Graiguecullen, Co. Carlow

Prepared in conformance with Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, as amended

by

**Dr Douglas McMillan
MIEMA, CEnv, MSB, MIBI, MAEE,
Grad IOSH, Fellow IITD
October 2023**

Report #2023031



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1.0 Introduction

BioLogiQ Solutions was requested to carry out a screening for an appropriate assessment for planning to carry out alterations and extend the existing building at St. Enda's and all associated works for Carlow County Council on Sleaty Street, Graiguecullen, Co. Carlow. This was done using publicly available information from the NPWS, GSI, EPA Maps and 'Catchments' websites and a site visit on 11th October 2023.

2.0 The Appropriate Assessment Process

2.1 Requirements for an assessment under Article 6 of the Habitats Directive

Article 6(3) of Council Directive 2009/147/EC of 21st May, 1992 on the conservation of natural habitats and of wild fauna and flora, states:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.”

2.2 Appropriate Assessment guidance

This assessment is to ensure that the competent authorities agree to the development only after having ascertained that it will not adversely affect the integrity of the site concerned.

The project will involve alterations to the existing building at St. Enda's and all associated works on Sleaty Street, Graiguecullen, Co. Carlow which has been screened to ascertain if it should be subject to an “appropriate assessment” as outlined in the Habitats Directive. To ensure that this was done in accordance with all legal requirements the following guidance documents were consulted:

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities,¹
- Assessment of plans and projects significantly affecting Natura 2000 sites, methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC,²
- EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC.³

In line with the suggested assessment methodology put forward by the Commission, a screening matrix was completed in section 6.0 below.

2.3 Stages in the process

A four stage process is required to complete a full Appropriate Assessment:²

1. *Screening*: identifies the likely impacts upon a Natura 2000 site of a plan, and considers whether these impacts are likely to be significant. It has four steps associated with it:
 - Step One: Management of the site
 - Step Two: Description of the project or plan
 - Step Three: Characteristics of the site
 - Step Four: Assessment of significance
2. *Appropriate Assessment*: consideration of the impact on the integrity of the Natura 2000 site with respect to the site's structure and function and its conservation objectives. This has four steps associated with it:
 - Step One: Information required
 - Step Two: Impact Prediction



- Step Three: Conservation Objectives
 - Step Four: Mitigation Measures
3. *Assessment of alternative solutions*: examines alternative ways of achieving the objectives of the plan that avoid adverse impacts on the integrity of the Natura 2000 site. This has two steps associated with it:
- Step One: Identifying alternative solutions
 - Step Two: Assessing alternative solutions
4. *The “IRPI” test (Imperative Reasons of Over-riding Public Interest)*: Stage 4 is the main derogation process of Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project that will have adverse effects on the integrity of a Natura 2000 site to proceed in cases where it has been established that no less damaging alternative solution exists.

Stages 1 and 2 deal with the main assessment requirements specified in Article 6(3). The first stage involves gathering evidence and screening for likely impacts. This screening process determines whether a plan option is likely to have a significant effect on a European site and hence whether the subsequent steps of the AA are required. If no significant effects are identified, no further steps need to be taken in terms of AA. However, where such effects seem likely, ‘full’ AA of the plan (or specific elements of it) or project will be necessary. If insufficient information is available to make a clear judgment, the ‘precautionary principle’ – in line with the ‘spirit’ of the Habitats Directive - should be followed. This process will often establish mitigation measures or alternatives, which can offset all significant adverse effects and enable the plan or project to go forward. Where this is not the case, more stringent measures will need to be considered.

Stages 3 and 4 are only undertaken if it cannot be stated with certainty that the development will not have any significant effect on the Natura 2000 sites in question. This report describes the assessment and testing required for the Stage 1 Screening process to comply with Article 6(3) obligations and Planning Authorities guidance.



3.0 Description of Project

This involves alterations to an existing building at St. Enda's on Sleaty Street, Graiguecullen, Co. Carlow (see Appendices 1 to 2). Figure 1 shows the front of the building. Water will be provided and sewage treated by the town sewerage systems.



Figure 1. View of St. Enda's from Sleaty Road.



4.0 Identification of relevant Natura 2000 sites

4.1 Designated sites in the vicinity of the project

This involves alterations and extension of an existing building and all associated site works on a 0.028 hectare site on Sleaty Street, Graiguecullen, Co. Carlow (see Appendices 1 to 3). The Barrow_160 (WaterBody Code: IE_SE_14B012460) which forms part of the Barrow River (Special Area of Conservation (SAC)) is situated about 110 metres south-east of the proposed development and the Barrow River SAC and a tributary of the Barrow_160 are about 40 metres due east of the development. However, this tributary is piped so will not be impacted.

Consequently, the Source-Pathway-Receptor (SPR) distance to the Barrow River SAC is about 0.11 kilometres (see Figure 3).

The Slaney River SAC (site code 000781) is located at a distance of about 11 km east of the site. However, it was considered that ‘no pathway’ exists by which the proposed development could impact upon this SAC so it has been screened out for an Appropriate Assessment.

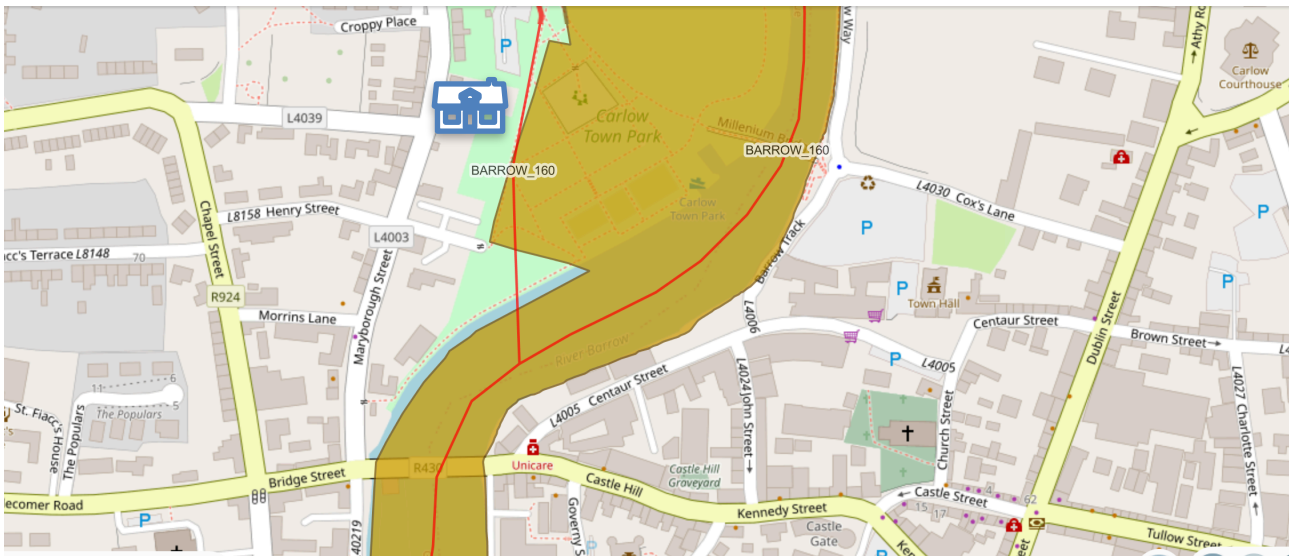


Figure 3. Location of Barrow_160 with respect to project site (marked as blue & white house in middle of image).

4.3 Characteristics of the River Barrow & River Nore SAC 002162

Site Name: River Barrow & River Nore SAC⁴

Site Code: 002162

Description: This site consists of the freshwater stretches of the Barrow/Nore River catchments as far upstream as the Slieve Bloom Mountains and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford. The larger of the many tributaries include the Lerr, Fushoge, Mountain, Aughavaud, Owenass, Boherbaun and Stradbally Rivers of the Barrow. Both rivers rise in the Old



Red Sandstone of the Slieve Bloom Mountains before passing through a band of Carboniferous shales and sandstones. The upper reaches of the Barrow runs through limestone. The middle reaches and many of the eastern tributaries, sourced in the Blackstairs Mountains, run through Leinster Granite. The southern end, runs over intrusive rocks poor in silica.

Qualifying interests: The site is a candidate SAC selected for alluvial wet woodlands and petrifying springs, priority habitats on Annex I of the E.U. Habitats Directive. The site is also selected as a candidate SAC for old oak woodlands, floating river vegetation, estuary, tidal mudflats, *Salicornia* mudflats, Atlantic salt meadows, Mediterranean salt meadows, dry heath and eutrophic tall herbs, all habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Sea Lamprey (*Petromyzon marinus*), River Lamprey, (*Lampetra fluviatilis*), Brook Lamprey (*Lampetra planeri*), Freshwater Pearl Mussel (*Margaritifera margaritifera*), Nore Freshwater Pearl Mussel (*Margaritifera m. durrovensis*), Freshwater crayfish (*Austropotamobius pallipes*), Twaite Shad (*Alosa fallax fallax*), Atlantic Salmon (*Salmo salar*), Otter (*Lutra lutra*), Desmoulin’s Whorl Snail (*Vertigo moulinsiana*) and the Killarney Fern (*Trichomanes speciosum*).

Notable features (near development): n/a

Conservation objectives: These are as follows:⁵

- To maintain or restore the favourable conservation status of the Annex I habitats and Annex II species of community interest listed above.
- To maintain the extent, species richness and biodiversity of the entire site.
- To establish effective liaison and co-operation with landowners, legal users and relevant authorities.

Conservation objectives for qualifying interests:^{5,6}

The species of qualifying interest that could be potentially present in the adjacent river and impacted by the development have been identified as: Sea, Brook and River lamprey^{5,6} (*Petromyzon marinus*, *Lampetra planeri* and *L. fluviatilis*), Atlantic salmon (*Salmo salar*), White-clawed crayfish (*Austrapotamobius pallipes*) and Otter (*Lutra lutra*).

These species of qualifying interests have been screened out as they are *outside the zone of influence* of the project (see Table in Appendix 3).⁷

Information on qualifying interests⁷ adjacent to project is listed below in the Table in Appendix 4 i.e. conservation objectives, threats and pressure, key environmental conditions and potential impacts from the development.

There are no habitats of qualifying interest that could be impacted by the development.



5.0 Assessment of Likely Effects

5.1 Desktop survey

The ‘Catchments’ website which supports the River Basin Management Plan documentation in relation to Ireland’s River Basin Districts was consulted to establish the water quality for the Barrow_160 River (WaterBody Code: IE_SE_14B012460).⁸

The full report details that at the time of surveying the Barrow_160 had ‘Moderate’ water quality (out of five status classes: High, Good, Moderate, Poor, Bad) based on its ecological status. These classes correspond to the Q-rating system which would give it a Q₃ rating. It is also highlighted as being ‘At Risk’ of not meeting WFD objectives.

5.2 Field survey and findings

GSI online mapping indicates the soil is ‘Urban’ and ‘Alluvial (mineral)’ over ‘Visean limestone & calcareous shale’ bedrock. The site is classed as being a Regionally Important Aquifer (Regionally Important Aquifer - Karstified (diffuse)) (Rkd)) and as having a High (H) groundwater vulnerability.

A site visit was carried out on 11th October 2023 to identify species found onsite. As per Fossitt⁹ the site is principally lawn with characteristics of ‘Dry meadows & grassy verges’ (GS2) with ‘Flower beds and borders’ (BC4) and ‘Buildings & artificial surfaces’ (BL3). The lawn is principally Mat-grass (*Nardus stricta*) with some Creeping bent (*Agrostis stolonifera*), Cock’s-foot (*Dactylis glomerata*), Couch-grass (*Elymus repens*), False oat-grass (*Arrhenatherium elatius*) and Yorkshire fog (*Holcus lanatus*) and the herbaceous species, Black medick (*Medicago lupulina*), Creeping and Meadow buttercup (*Ranunculus repens* & *R. acris*), Creeping cinquefoil (*Potentilla reptans*), Germander speedwell (*Veronica chamaedrys*), Hawkweed (*Hieracium* sp.), Imperforate St. John’s Wort (*Hypericum maculatum*), Ragwort (*Senecio jacobea*), Ribwort plantain (*Plantago lanceolata*), White Clover (*Trifolium repens*) and Yarrow (*Achillea millefolium*). The hardstanding area includes Briar (*Rubus fruticosus* agg.), Buddleia (*Buddleia davidii*), Canadian fleabane (*Conyza canadensis*), Cleavers (*Galium aparine*), Common mallow (*Malus sylvestris*), Dandelion (*Taraxacum officinale* agg.), Hawkbit (*Hieracium* sp.), Groundsel (*Senecio vulgaris*), Red Valerian (*Centranthus ruber*), Sow-thistle (*Sonchus* sp.) Willowherb (*Epilobium* sp.) and various garden flowers i.e. Opium poppy, Snapdragon etc. The flower bed adjacent to the house includes various garden flowers (Bellflower, Cranesbill, Dahlia, Hollyhock, Lupin, Monbrietia, etc.) and shrubs (Cotoneaster horizontalis, Fuschia, Hydrangea, Rose). The garden is very diverse and will be left untouched.

5.3 Other developments

There have been six other developments approved in the Sleaty Street area in the last fifteen years.

| File number | Date application finalised | Development description |
|-------------|----------------------------|--|
| 22153 | Finalised 30/06/2022 | 2 no. velux windows at first floor level to the front façade of existing dwelling and all associated site works |
| 20355 | Finalised 24/03/2021 | The construction of a one & half storey style extension to the rear of the dwelling in addition to 2 no. roof windows to the front and all associated site development works |



| | | |
|-------|-------------------------|---|
| 208 | Finalised 14/04/2020 | The re-configuration of existing pitches to allow for (a) permission for astro pitch facility and associated fencing (b) 5 No. ball nets 7m high around pitches (c) Walking track 500 metres in length around pitches with stone surface (d) 14 No. 18m high floodlights around main pitch and training pitch |
| 18445 | Finalised 06/11/2019 | For the construction of a single storey side and rear dressing room and storage room, extension to existing single storey detached dressing room building and all associated site works |
| 17172 | Finalised 22/01/2018 | The part demolition and refurbishment of the existing residential property and the provision of a two storey extension to the rear of the property and all associated site works |
| 1750 | Finalised 22/04/2017 | Retention permission (REF. No. 11/6407) of an existing 36 metre high telecommunications support structure with wind turbine giving an overall height of 41.55 metres, carrying antennae, link dishes, telecommunications equipment containers and cabinets |

5.4 Screening Matrix

The completed EC screening matrix is as follows:

Brief description of the project or plan: See section 3.0 above

Brief description of the Natura 2000 site: See section 4.0 above

| | |
|---|---|
| <i>Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.</i> | The project involves alterations to an existing building (with 132.58 m ² groundfloor footprint) and all associated site works and all associated site works on a site of 0.028 hectares (0.069 acres) which if inadequately carried out could result in groundwater pollution |
| <i>Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of:</i> | |
| Size and scale | Refurbishments to existing building with 138.58 m ² groundfloor footprint (situated on approx. 0.028 hectare site) |
| Land-take | There is no land-take from any protected area |
| Distance from the Natura 2000 site or key features of the site | 110 metres northwest of the Barrow_160 River (& 40 metres west of the Barrow River SAC) |
| Resource requirements (water abstraction etc.) | No resources are required from the SAC |
| Emissions (disposal to land, water or air) | Fuels or oils used during construction could leach to groundwater which is of moderate vulnerability. Any fuel or oil-containing equipment (generators etc.) should be bunded and a spill response plan in place |
| Excavation requirements | The project will involve no excavation or clearance of garden areas |



| | |
|---|--|
| Transportation requirements | The building materials required for the development will be transported along existing road networks |
| Duration of construction, operation, decommissioning, etc. | Construction work is expected to last about 6 months |
| Other | n/a |
| <i>Describe any likely changes to the site arising as a result of:</i> | |
| Reduction of habitat area | There will be no reduction in habitat area |
| Disturbance to key species | There will be no disturbance to key species |
| Habitat or species fragmentation | There will be no habitat or species fragmentation |
| Reduction in species density | There will be no reduction in species density |
| Changes in key indicators of conservation value (water quality etc.) | There will be no change in key conservation indicators |
| Climate change | The site is highly likely to be affected by future increased flooding risk |
| <i>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</i> | |
| Interference with the key relationships that define the structure of the site | None |
| Interference with the key relationships that define the function of the site | None |
| <i>Provide indicators of significance as a result of the identification of effects set out above in terms of:</i> | |
| Loss (of habitat) | No loss of SAC habitat will occur |
| Fragmentation (of habitats or species) | No fragmentation will occur |
| Disruption | There should be no disruption to habitat |
| Disturbance | There should be no disturbance to aquatic species |
| Changes to key elements of the site (e.g. water quality etc.) | No change to key elements of the site is predicted |
| No effects have been identified so no indicators are required. | |



Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.

There are no likely significant impacts. There is no uncertainty attached to any impact magnitude



6.0 Screening statement

6.1 Finding of No Significant Effects report matrix

| | | | |
|---|---|---|--|
| <i>Name of project or plan</i> | | Alterations to existing building (132.58 m ² groundfloor footprint) and all associated site works on a site of 0.028 hectares (0.069 acres) on Sleaty Street, Graiguecullen, Co. Carlow | |
| <i>Name and location of Natura 2000 site</i> | | River Barrow SAC | |
| <i>Description of the project or plan</i> | | Alteration to existing building (with a 132.58 m ² groundfloor footprint) and all associated site works on a site of approx. 0.028 ha | |
| <i>Is the project or plan directly connected with or necessary to the management of the site (provide details)?</i> | | No | |
| <i>Are there other projects or plans that together with the project or plan being assessed could affect the site (provide details)?</i> | | Six other developments on Sleaty Street in the last fifteen years (see 5.3 above) | |
| The assessment of significance of effects | | | |
| <i>Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site</i> | | There are no likely significant impacts subject to implementation of the controls outlined above and summarised below | |
| <i>Explain why these effects are not considered significant</i> | | <p><u>Biodiversity loss</u>: little ecological value in build area</p> <p><u>Disturbance (noise & vibration)</u>: n/a, >110 metres from Barrow_160; daytime working hours</p> <p><u>Earthworks</u>: main pollutants are silt and dust but mainly interior works sited >110 metres from Barrow_160 with enclosing walls, intervening park and riparian vegetation</p> <p><u>Build</u>: main pollutants are concrete water, fuel and oil spills to ground water but standard construction practices will provide sufficient controls to prevent any impact</p> <p><u>Waste</u>: good waste management as per Waste Management Act 1996</p> <p><u>Surfacewater runoff</u>: collected to stormwater drainage system</p> <p><u>Wastewater</u>: collected to town sewerage system</p> | |
| <i>List of agencies consulted: provide contact name and telephone or e-mail address</i> | | Manager, Development Application Unit, Department of Agriculture, Heritage & the Gaeltacht manager.Dau@ahg.gov.ie Orla Barrett, Carlow County Council obarrett@carlowcoco.ie | |
| Data collected to carry out the assessment | | | |
| <i>Who carried out the assessment?</i> | <i>Sources of data</i> | <i>Level of assessment completed</i> | <i>Where can the full results of the assessment be accessed and reviewed?</i> |
| Dr Douglas McMillan, BioLogiQ Solutions | Publicly available information on NPWS, GSI, EPA Maps and 'Catchments' websites | Stage 1 screening which involved a desktop study using existing information from the relevant state authorities and a site visit carried out on 11 th October 2023 | This can be viewed at Carlow County Council's Planning Department, Dublin Rd, Carlow |



7.0 Conclusions and recommendations

The project has undergone the AA screening process and it has been concluded that there will be no significant effects on the water quality of the Barrow_160 River, or any impacts on the conservation objectives of the species or habitats of qualifying interest of the River Barrow SAC.

Consequently, the proposed development does not require an appropriate assessment as the construction is unlikely to have a significant effect on the closest Natura 2000 site.

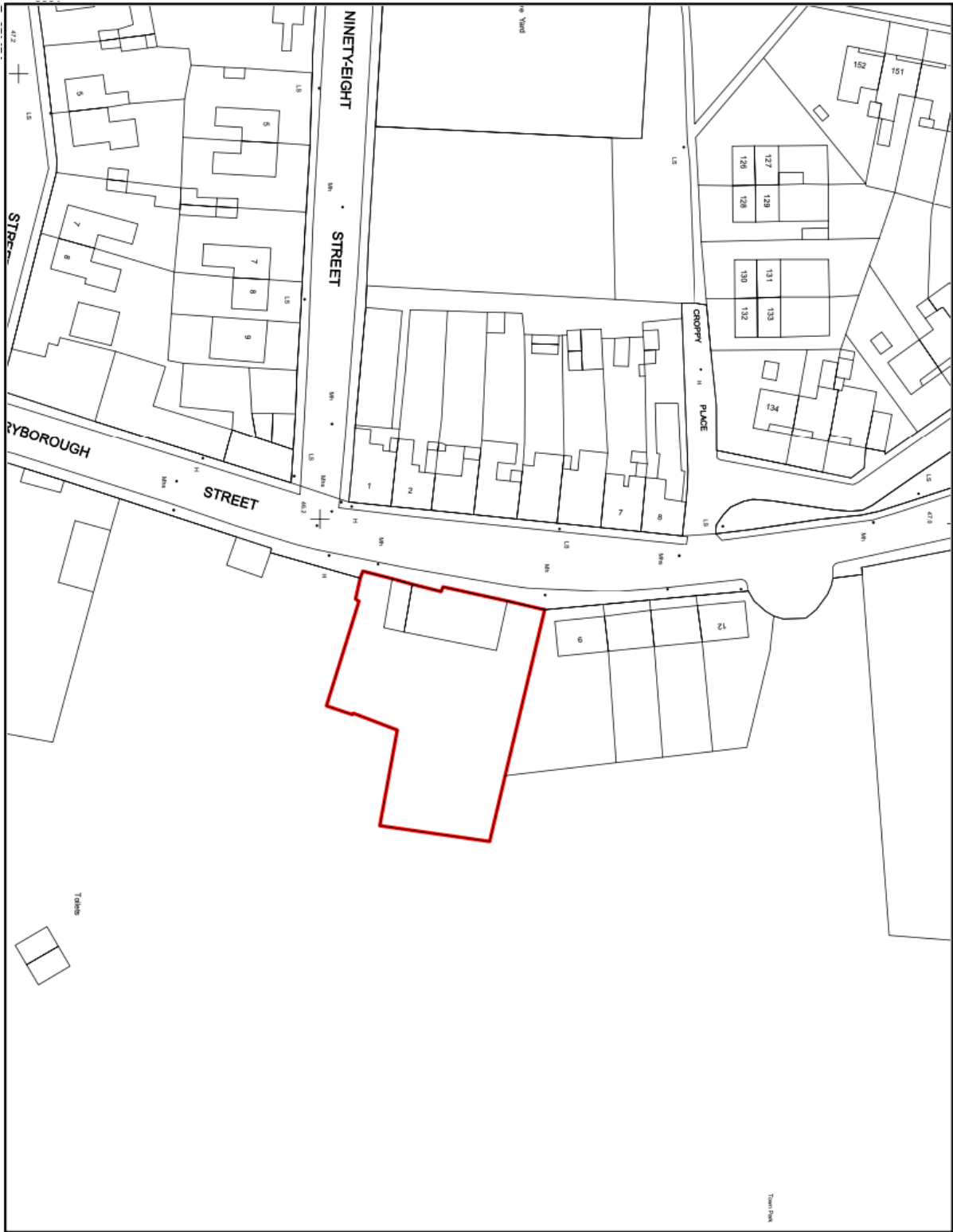


8.0 References

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2. Environment DG (EC). 2002. Assessment of plans and projects significantly affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities.
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6. Central Fisheries Board. 2006. The status and distribution of lamprey in the River Barrow SAC. Irish Wildlife Manuals No. 21.
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8. Catchments.ie. 2023. Data Page for Barrow_160, Waterbody Code IE_SE_14B012460 (https://www.catchments.ie/d_a_t_a/?_gl=1*_ib0ny*_ga*MTcxMjY0NjEzOC4xNjk1NjQzOTc1*_ga_TPK2CK9KEX*MTY5NzAwMTgyMy4xMi4wLjE2OTcwMDE4MjMuMC4wLjA.#/waterbody/IE_SE_14B012460?_k=7f3stk).
9. Fossitt, J.A. 2000. A Guide to Habitats in Ireland. Heritage Council of Ireland, Dublin.

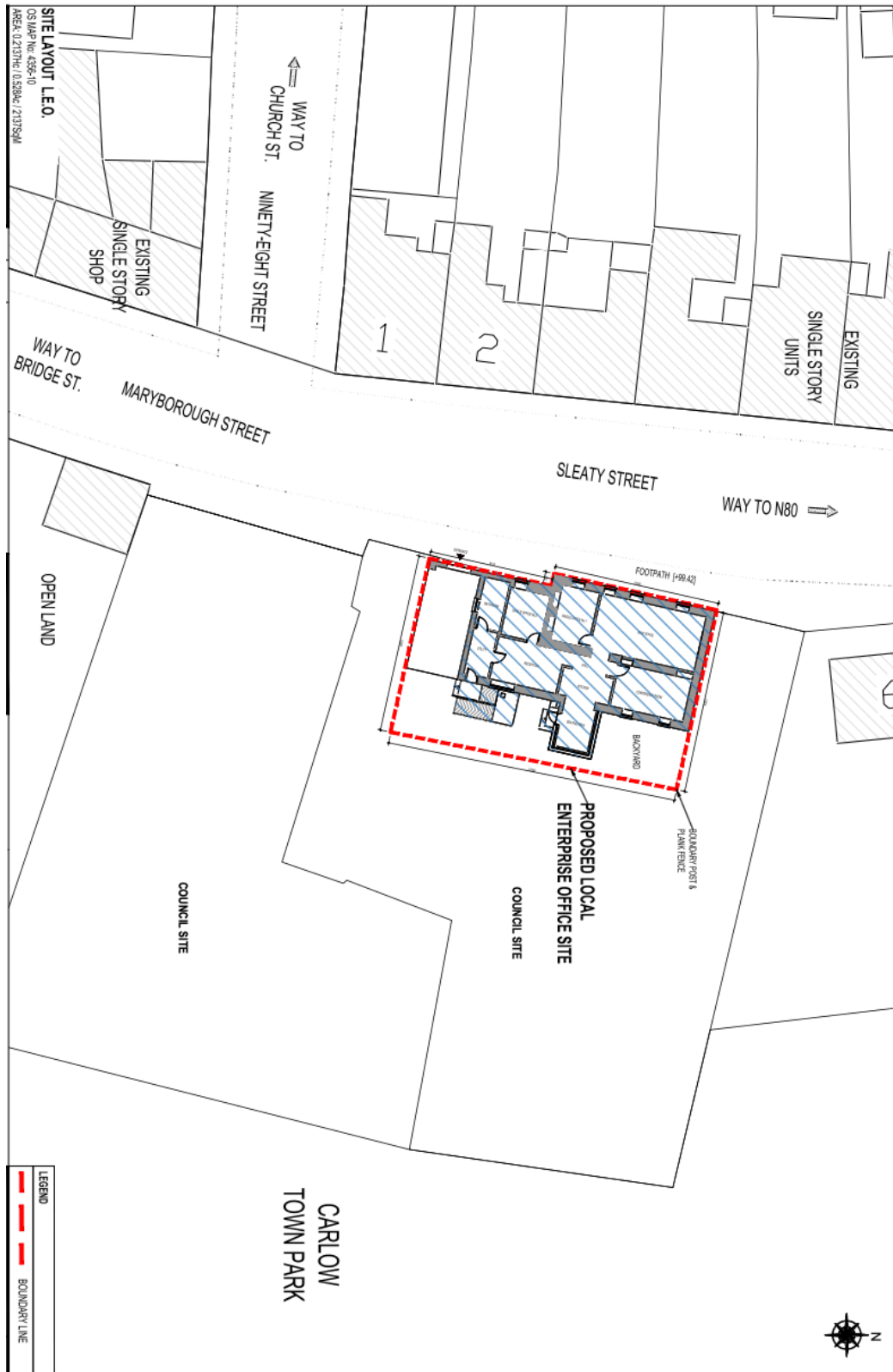


APPENDIX 1. Rural Place Map.





APPENDIX 2. Site Layout.





APPENDIX 3. Screening of Barrow River qualifying interests.⁸

| <i>Qualifying interests</i> | <i>Location in the Natura 2000 site relative to Application Site</i> | <i>Potential for impacts from the development</i> | <i>Screened in / out</i> |
|--|--|---|--------------------------|
| SPECIES | | | |
| Sea lamprey (n2K species code [1096]) | Barrow_River_160 (main channel) | Silt, dust, concrete water, fuels and oils can impact water bodies but the works will be sited over 100 metres away from the Barrow_160 with enclosing walls and intervening park and riparian vegetation so there is no pathway by which these can reach the river | Out |
| River lamprey (<i>Lampetra planeri</i>) (n2K species code [1099]) | Barrow_160 | Silt, dust, concrete water, fuels and oils can impact water bodies but the works will be sited over 100 metres away from the Barrow_160 with enclosing walls and intervening park and riparian vegetation so there is no pathway by which these can reach the river | Out |
| Brook lamprey (<i>Lampetra fluviatilis</i>) (n2K species code [1096]) | Barrow_160 | Silt, dust, concrete water, fuels and oils can impact water bodies but the works will be sited over 100 metres away from the Barrow_160 with enclosing walls and intervening park and riparian vegetation so there is no pathway by which these can reach the river | Out |
| Atlantic salmon (<i>Salmo salar</i>) (n2K species code [1106]) | Barrow_160 | Silt, dust, concrete water, fuels and oils can impact water bodies but the works will be sited over 100 metres away from the Barrow_160 with enclosing walls and intervening park and riparian vegetation so there is no pathway by which these can reach the river | Out |
| Otter (<i>Lutra lutra</i>) (n2K species code [1355]) | Barrow_160 | Silt, dust, concrete water, fuels and oils can impact water bodies but the works will be sited over 100 metres away from the Barrow_160 with enclosing walls and intervening park and riparian vegetation so there is no pathway by which these can reach the river | Out |
| White-clawed crayfish (<i>Austropotamobius pallipes</i>) (n2K species code [1092]) | Barrow_160 (although believed to be now absent due to crayfish plague) | Silt, dust, concrete water, fuels and oils can impact water bodies but the works will be sited over 100 metres away from the Barrow_160 with enclosing walls and intervening park and riparian vegetation so there is no pathway by which these can reach the river | Out |
| Twaite shad (<i>Alosa fallax</i>) (n2K species code [1103]) | No shad recorded above St. Mullins | N/a | Out |
| Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>) (n2K species code [1016]) | Terrestrial habitat - no foreseeable pathway to receptor | N/a | Out |
| Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) (n2K species code [1029]) | No sites on Barrow River | N/a | Out |
| Nore freshwater pearl mussel (<i>Margaritifera durrovensis</i>) (n2K species code [1990]) | No sites on Barrow River | N/a | Out |
| Killarney Fern (<i>Trichomanes speciosum</i>) (n2K species code [1103]) | Terrestrial habitat - no foreseeable pathway to receptor | N/a | Out |



| HABITATS | | | |
|--|--|---|-----|
| Alluvial woodland (n2K habitat code 91E0)* | Terrestrial habitat - no foreseeable pathway to receptor | N/a | Out |
| Hydrophilous tall herb communities (n2K habitat code 6430) | Terrestrial habitat - no foreseeable pathway to receptor | N/a | Out |
| Floating river vegetation (n2K habitat code 3260) | Barrow_160 channel | Silt, dust, concrete water, fuels and oils can impact water bodies but the works will be sited over 100 metres away from the Barrow_160 with enclosing walls and intervening park and riparian vegetation so there is no pathway by which these can reach the river | Out |
| Dry heath (n2K habitat code 4030) | Terrestrial habitat - no direct pathway to receptor | N/a | Out |
| Petrifying springs* (n2K habitat code 7220) | Terrestrial habitat - no direct pathway to receptor | N/a | Out |
| Old oak woodlands (n2K habitat code 91A0) | Terrestrial habitat - no direct pathway to receptor | N/a | Out |
| Estuaries (n2K habitat code 1130) | >15km downstream of site | N/a | Out |
| Tidal mudflats and sandflats (n2K habitat code 1140) | >15km downstream of site | N/a | Out |
| Reefs (n2K habitat code 1170) | >15km downstream of site | N/a | Out |
| <i>Salicornia</i> mud (n2K habitat code 1310) | >15km downstream of site | N/a | Out |
| Atlantic salt meadows (n2K habitat code 1330) | >15km downstream of site | N/a | Out |
| Mediterranean salt meadows (n2K habitat code 1330) | >15km downstream of site | N/a | Out |



APPENDIX 4. Screening of qualifying interests, threats, pressures and potential impacts from the development.⁸

| <i>Conservation Objectives of Qualifying interests (2011)</i> | <i>Threats and Pressures (NPWS, 2019)⁸</i> | <i>Key Environmental Conditions</i> | <i>Potential Impacts from the Development</i> |
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| <p>Atlantic salmon (<i>Salmo salar</i>) (n2K species code [1106])</p> <ul style="list-style-type: none"> • maintain access to 100% of river channels down to second-order accessible from the estuary (i.e., free of artificial barriers); • consistently exceeding the Conservation Limit for each system; • maintaining salmon fry abundance catchment-wide (set at 17 fry/5 min sampling by electrofishing); • preventing any significant decline in out-migrating smolt abundance; • preventing any decline in number and distribution of spawning redds; • ensuring a minimum EPA Q value of Q₄ at all EPA-sampled sites. | <ul style="list-style-type: none"> • A26 Agricultural activities generating diffuse pollution to surface or ground waters (H) • G19 Other impacts from marine aquaculture, including infrastructure (H) • K05 Physical alteration of water bodies (H) • J01 Mixed source pollution to surface and ground waters (limnic and terrestrial) (H) • A25 Agricultural activities generating point source pollution to surface or ground waters (M) • B23 Forestry activities generating pollution to surface or ground waters (M) • D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M) • G11 Illegal harvesting, collecting and taking (M) • G20 Abstraction of water, flow diversion, dams and other modifications of hydrological conditions for freshwater aquaculture (M) • L06 Interspecific relations (competition, predation, parasitism, pathogens) (M) • N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (H) • B23 Forestry activities generating pollution to surface or ground waters (M) • F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M) • F28 Modification of flooding regimes, flood protection for residential or recreational development (M) • G11 Illegal harvesting, collecting and taking (M) • I02 Other invasive species (other than species of Union concern) (M) | <p>Adult salmon require well-oxygenated gravelled areas for spawning in the main channels and tributaries of rivers.</p> <p>A minimum EPA Q value of Q₄ is required for salmon parr.</p> | <p>Potential impacts from the project arise from:</p> <ul style="list-style-type: none"> • Clearance of rubble and vegetation may generate dust, • noise and vibration disturbance, • waste management (e.g. waste fuels and oils), • preparation of concrete for foundations etc. may generate concrete water, • spills of fuels or oils from equipment. |
| <p>Otter (<i>Lutra lutra</i>) (n2K species code [1355])</p> <ul style="list-style-type: none"> • maintain populations across its current range; • no decline in extent of terrestrial habitat (i.e., 64.7 ha above high water mark and 453.4 ha along river banks / around ponds); • no decline in extent of freshwater (river) habitat (i.e., 264.1 km in length); • no decrease in couching sites and holts; • no decrease in available fish biomass in kilograms; • no increase in barriers to connectivity. | <ul style="list-style-type: none"> • Roadkill is considered a Medium pressure; • Entanglement in fixed fishing nets (e.g. tangle nets) and pots (e.g. fyke nets / lobster pots) is also a concern; • Diffuse and point-source pollution of waters is likely to impact otters indirectly at the local level through changes to prey abundance. | <p>Otters have two basic requirements: aquatic prey and safe refuges where they can rest.</p> | <p>Potential impacts from the project arise from:</p> <ul style="list-style-type: none"> • Clearance of rubble and vegetation may generate dust, • noise and vibration disturbance, • waste management (e.g. waste fuels and oils), • preparation of concrete for foundations etc. may generate concrete water, • spills of fuels or oils from equipment. |



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| <p>Sea lamprey (<i>Petromyzon marinus</i>) (n2K species code [1095])</p> <ul style="list-style-type: none"> maintaining accessibility from estuary to greater than 75% of main stem length of rivers accessible from estuary; ensuring at least three age/size groups are present; ensuring mean catchment juvenile density of at least 1/ m²; preventing any decline in the extent and distribution of spawning beds; maintaining more than 50% sampling sites positive. | <ul style="list-style-type: none"> D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (H) N03 Increases or changes in precipitation due to climate change (H) A19 Application of natural fertilisers on agricultural land (M) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) G01 Marine fish and shellfish harvesting (professional, recreational) causing reduction of species/prey populations (M) Xo Threats and pressures from outside the Member State (M) N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M) N02 Droughts and decreases in precipitation due to climate change (M) | <p>There are two optimal habitat requirements for sea lamprey including adult spawning and larval nursery habitat. Spawning activity is found in gravelled areas of main-stem SAC rivers with a moderate gradient and water velocity. Larval habitat consists of fine-grained areas of sediment in areas of deposition and of reduced velocity.</p> <p>Egg laying follows nest excavation and the resulting larvae, called ammocoetes, hatch out within days. These swim or drift downstream to areas of fine sediment into which they can burrow. The ammocoete is a filter feeder and retains its burrowing habit in fine-grained sediment over a period of years.</p> <p>Transformation to the young adult stage occurs in late summer and the juvenile sea lamprey can be found migrating downriver to estuarine waters and the open sea in late autumn – winter.</p> | <p>Potential impacts from the project arise from:</p> <ul style="list-style-type: none"> Clearance of rubble and vegetation may generate dust, noise and vibration disturbance, waste management (e.g. waste fuels and oils), preparation of concrete for foundations etc. may generate concrete water, spills of fuels or oils from equipment. |
| <p>River lamprey (<i>Lampetra planeri</i>) (n2K species code [1099])</p> <ul style="list-style-type: none"> maintaining accessibility from estuary to greater than 75% of main stem and major tributaries down to second order (i.e. free of artificial barriers); ensuring at least three age/size groups are present; ensuring mean catchment juvenile density of at least 2/ m²; preventing any decline in the extent and distribution of spawning beds; maintaining the availability of juvenile habitat at more than 50% sampling sites as a minimum. | <ul style="list-style-type: none"> A19 Application of natural fertilisers on agricultural land (M) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) B09 Clear-cutting, removal of all trees (M) D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M) F11 Pollution to surface or ground water due to urban run-offs (M) F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M) N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M) N02 Droughts and decreases in precipitation due to climate change (M) | <p>Adult river lamprey migrate upstream from estuaries during the winter months to spawn in the spring. They require access to spawning grounds in the main channels and tributaries of rivers.</p> <p>Clean gravels and adequate flow conditions are a requirement for spawning.</p> <p>Upon hatching, larvae migrate to more still-water sections of river where they burrow into fine sediment deposits.</p> | <p>Potential impacts from the project arise from:</p> <ul style="list-style-type: none"> Demolition work may generate dust, Clearance of rubble and vegetation may generate dust, noise and vibration disturbance, waste management (e.g. waste fuels and oils), preparation of concrete for foundations etc. may generate concrete water, spills of fuels or oils from equipment. generate silt runoff and dust, noise and vibration disturbance, waste management (e.g. waste fuels and oils), preparation of concrete for foundations etc. may generate concrete water, spills of fuels or oils from equipment. |



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| <p>Brook lamprey (<i>Lampetra fluviatilis</i>) (n2K species code [1096])</p> <ul style="list-style-type: none"> maintaining access to all watercourses down to first order streams (i.e., free of artificial barriers); ensuring at least three age/size groups are present; ensuring mean catchment juvenile density of at least 2/ m²; preventing any decline in the extent and distribution of spawning beds; maintaining the availability of juvenile habitat at more than 50% sampling sites as a minimum. | <ul style="list-style-type: none"> A19 Application of natural fertilisers on agricultural land (M) A20 Application of synthetic (mineral) fertilisers on agricultural land (M) A31 Drainage for use as agricultural land (M) B09 Clear-cutting, removal of all trees (M) D02 Hydropower (dams, weirs, run-off-the-river), including infrastructure (M) F11 Pollution to surface or ground water due to urban run-offs (M) F12 Discharge of urban waste water (excluding storm overflows and/or urban run-offs) generating pollution to surface or ground water (M) N01 Temperature changes (e.g. rise of temperature & extremes) due to climate change (M) N02 Droughts and decreases in precipitation due to climate change (M) | <p>Adult brook lamprey require well-oxygenated gravelled areas for spawning in the main channels and tributaries of rivers.</p> <p>Nursery habitat in the form of fine sands/silts in depositional areas is required for the larval life stage.</p> | <p>Potential impacts from the project arise from:</p> <ul style="list-style-type: none"> Clearance of rubble and vegetation may generate dust, noise and vibration disturbance, waste management (e.g. waste fuels and oils), preparation of concrete for foundations etc. may generate concrete water, spills of fuels or oils from equipment. |
| <p>White-clawed crayfish (<i>Austropotamobius pallipes</i>) (n2K species code [1355])</p> <ul style="list-style-type: none"> no reduction from baseline occurrence throughout most of SAC; presence of juveniles and/or females with eggs in at least 50% of positive samples; no presence of alien crayfish species; no instances of disease; at least Q₃₋₄ at all sites sampled by EPA; no decline in heterogeneity or habitat quality. | <ul style="list-style-type: none"> I05 Plant and animal diseases, pathogens and pests (M) I01 Invasive alien species of Union concern (H) | <p>Optimal habitat for the species encompasses streams, small rivers and lakes and requires refuge areas e.g. banks of streams into which animals can burrow, around bridges, in stable beds of cobbles and stones and amongst tree roots and beds of aquatic vegetation. Calcium is essential for the species to create its exoskeleton and so it is rarely found in water below a pH of 7. It is not tolerant of high water temperatures above 20°C. The species is omnivorous.</p> | <p>Potential impacts from the project arise from:</p> <ul style="list-style-type: none"> Clearance of rubble and vegetation may generate dust, noise and vibration disturbance, waste management (e.g. waste fuels and oils), preparation of concrete for foundations etc. may generate concrete water, spills of fuels or oils from equipment. |