

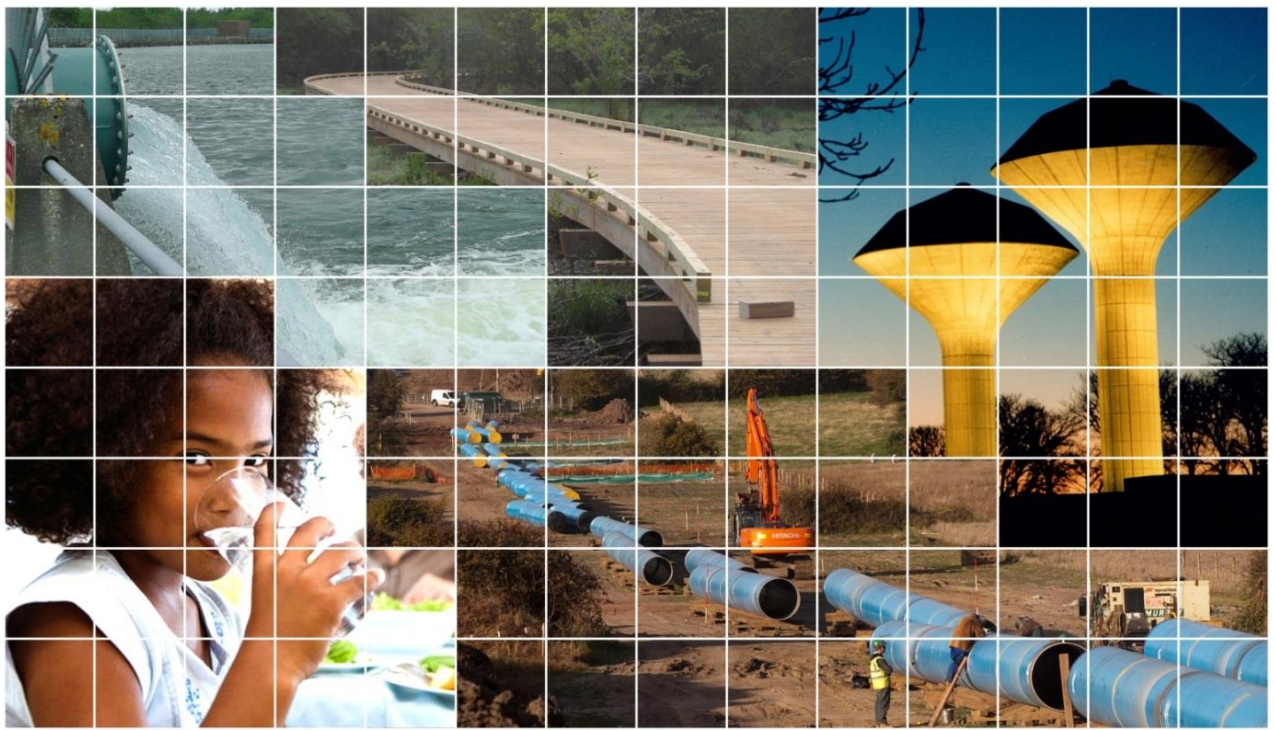
Water Supply Project – Eastern and Midlands Region

Siting of Meteorological Monitoring Masts as part of Water and Hydrographic Sampling Programs (Lough Derg) – Screening for Appropriate Assessment



May 2017

Revision 0



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1

Introduction

Irish Water are undertaking investigations as part of the development of the Water Supply Project-Eastern and Midlands Region (WSP-EMR), which is a strategic national project.

As part of a program of water sampling and hydrographic (bathymetric) survey required to aid in the determination of potential water abstraction locations in the Lough Derg/Parteen Basin area for the Project, two meteorological (Met) monitoring station masts were constructed near to Lough Derg. As these masts have already been constructed this report is retrospectively assessing the siting of these masts (hereafter referred to as the Project) and the potential impacts on the nearby designated sites.

In accordance with the EC Habitats Directive 92/43/EEC (hereafter “The Habitats Directive”) which been transposed into Irish law by the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477/2011). The Habitats Directive provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of community interest through the establishment and conservation of an EU-wide network of sites known as the Natura 2000 network (hereafter referred to as European Sites¹). European sites comprise Special Areas of Conservation (SACs²) and Special Protection Areas (SPAs). SACs are designated for their qualifying interest (QI) habitats and/or species while SPAs are designated for their Special Conservation Interests (SCI) bird species.

This Screening for Appropriate Assessment (AA) assesses the effects of the Project on European sites. In particular the Screening assessed the potential for the Project to result in likely significant effects (LSEs) which could lead to potential adverse effects on the integrity of European sites, either alone or in combination with other plans and projects. This AA screening report is provided to inform an application for retention planning for the already constructed meteorological masts.

¹ “European site” replaced the term “Natura 2000 site” under the EU (Environmental Impact Assessment and Habitats) Regulations 2011 S.I. No. 473 of 2011

² There are currently no SACs in Ireland. All remain ‘candidate’ (cSAC) until the European Commission approves and ratifies the final list of cSACs. cSACs are afforded the same protection as SACs. The process of making cSACs SACs by means of Statutory Instrument has begun. While this process is ongoing the term SAC will be used, in conformance with nomenclature used in NPWS databases.

2.1.1 Introduction to Appropriate Assessment

The requirement to carry out an AA comes from Article 6(3) of the Habitats Directive. The first step of the AA process is to carry out a Screening to establish whether, in relation to a particular plan or project, an AA is required. Article 6(3) states:

‘Any plan or project not directly connected with or necessary to the management of the site but likely to have [or capable of having³] 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. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.’

The above requirement has been implemented in the Republic of Ireland by the European Communities (Birds and Natural Habitats) Regulations 2011 S.I 477 of 2011 and the Planning and Development Acts 2000-2010, as amended.

2.1.2 Appropriate Assessment Methodology

The European Commission (2002) and Department of Environment, Heritage and Local Government (2010) have divided the provisions of Article 6 into four “stages” in the AA process. This approach is used industry-wide as standard and is followed in this Screening⁴ for AA. These four stages are as follows:

- **Stage One: Screening (overview)** - This process identifies the likely effects upon a European site from a project or plan, either alone or in combination with other projects or plans, and considers whether these effects are likely [or capable of being] significant. Reasoned application of the Precautionary Principle is fundamental to the Screening Stage (and AA). Where there is evidence of possible effects on a European site(s) from the project, but uncertainty remains, significant effects must be presumed without evidence to the contrary. The project will be “screened-in”, requiring a Stage Two AA. Where there is no evidence of significant effects, and no reasonable scientific doubt remains regarding this judgement, the assessment is stopped, and the project is “screened-out” from further assessment. The broad approach to

³ In accordance with the Opinion of Advocate General Eleanor Sharpston in *Reference for a Preliminary Ruling from the Supreme Court (Ireland)*, Case C-258/11, the term “likely to have a significant effect” in Article 6 (3) was interpreted as “capable of having a significant effect” (i.e. a lower probability is required to trigger Appropriate Assessment).

⁴ Defining AA as Stage 2 of the AA process is, strictly speaking, incorrect. Similarly, screening determines whether an AA should be undertaken, but is not Stage 1 of the process. However the widespread adoption by industry and public authorities of this EC terminology has made it difficult to remove the “stage” concept from reporting without introducing confusion.

undertaking the screening assessment is outlined in Section 2.1.3, while the detailed approach is provided in Section 6.1.

- **Stage Two: Appropriate Assessment** – The competent authority then considers the effect of the project or plan on the integrity of the European site(s), with respect to the site structure and function and its conservation objectives either alone or in combination with other projects or plans. Where adverse effects are identified, mitigation measures are proposed as appropriate to avoid effects. For projects, Stage Two of the AA process is documented within a Natura Impact Statement (NIS). This is provided to the competent authority by the applicant, to facilitate an informed assessment of the project.
- **Stage Three: Assessment of alternative solutions** - The process of examining alternative ways to complete the project and avoid adverse effects to the integrity of any European sites is likely to have been incorporated into Stages One and Two of the AA process. However, alternatives will be revisited at this stage. In the event that two (or more) alternative projects or plans are being developed, AAs will be undertaken for all.
- **Stage Four: Assessment where no alternative solutions exist and where adverse effects remain** - Stage Four is highly unlikely to be required. Implementation of mitigation under Stage 2 and/or use of alternatives under Stage 3 are preferable options to Stage Four.

2.1.3 Screening Methodology

This screening was informed by a desk study of all relevant environmental information and involved the following steps (broadly based on EC, 2000⁵):

1. Determining whether the project or plan (in this instance the constructed masts) is directly connected with or necessary to the management of the site (In this case it is not);
2. Describing the project (see Section 3);
3. Assessing the baseline environment (Section 4) to identify the relevant European site(s) which may be potentially affected (Section 6); and
4. Assessing the significance of any effects on relevant European site(s) (see Section 6).

The approach to completing steps 3 and 4 is expanded upon in Section 6. The AA Screening process was undertaken in accordance with the following guidance:

- *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (Department of Environment, Heritage and Local Government (DEHLG, 2010);
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (EC Environment Directorate-General, 2000);
- *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* (The European Commission (EC), 2002); and

⁵ EC (2000). Managing Natura 2000 sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC.

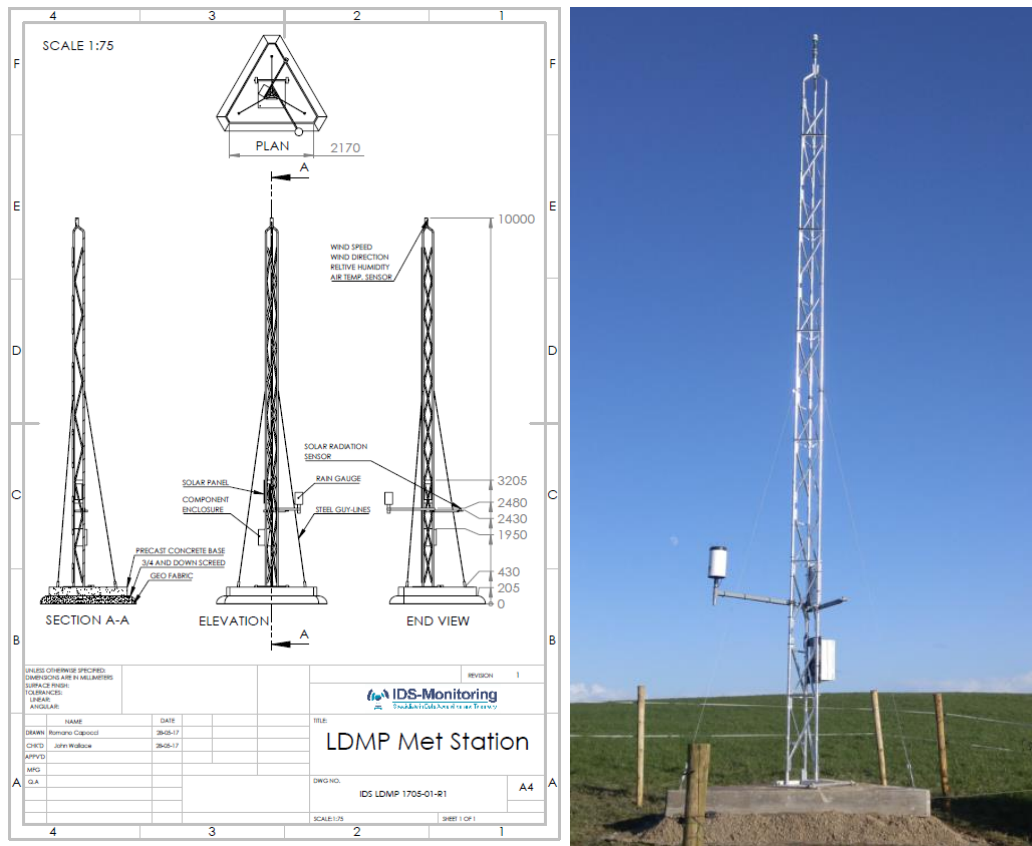
- Findings from the *International Workshops on Appropriate Assessment* in Oxford (2011), and Mikolov (Anon, 2013⁶).

6 Anon. (2013). Conclusions of the International Workshop on Appropriate Assessment held in Mikolov, Czech Republic, 4th October 2013 “ Appropriate Assessment as a Vehicle for Better Acceptance of Natura 2000 Network”. Summary document of Conference Proceedings available from conference organisers.

3 Description of Works

This Screening for AA evaluates the potential impact of the siting of two meteorological monitoring station masts on adjacent European designated sites. The two masts were erected near the shores of Lough Derg on the 17th February 2016.

Each mast consists of a lattice tower standing approximately 10m high (Graphic 1) and installed using pre-cast block. A brief description of each mast location follows.



Graphic 1: LDMP Met Station

The Northern Met Mast is located in an agricultural field approximately 250m from the south-eastern shore of Lough Derg (Graphic 2) within the townland of Drominagh in County Tipperary. The mast is located approximately 15m west of an existing building. The location is in close proximity to but outside of any designated sites. The mast is approximately 200m from the boundary of Lough Derg (Shannon SPA), and 250m from the boundary of Lough Derg North-East Shore SAC. Figure 1 shows all European sites within 15km of the Northern Met Mast.



Graphic 2: Northern Met Mast location 15m from an existing building in Drominagh townland.

The Southern Met Mast is located within an agricultural field in close proximity to the northern bank of Lough Derg (Graphic 3). The location of the mast is outside any designated sites, being approximately 90m from Lough Derg (Shannon) SPA. It is located approximately 130m from the shore of Lough Derg within the townland of Meelick in County Clare. Figure 2 shows all European sites within 15km of the Southern Met Mast.



Graphic 3: Southern Met Mast location on northern bank of Lough Derg in Meelick townland

3.1.1 General Good Practice for Pollution and Invasive Species Control

The following good practice working measures were specified in the contract documents for the appointed contractor to ensure the protection of nearby European sites during works.

Pollution control: The specifications included a suite of clauses that were contractually binding on the appointed contractor to remove any risk of a pollution incident. These were as follows:

- The works *“shall be restricted to the best possible environmental option and shall include contingency plans and environmental procedures to minimise damage caused by anchoring, accidents, spillages or other unforeseen event”*;
- *“Method Statements shall be submitted in full to the Employers Representative for review and approval two weeks prior to the commencement of the Works on site.”*;
- *“The Contractor shall take all necessary precautions to ensure that no pollution discharge either of solid or liquid material is made to any watercourses or to the lake and that no work carried out in any watercourse or in the lake is done in such a manner as to cause pollution”*;
- *“The contractor shall prevent by his operation pollution of land, ditches, streams, rivers, drains, beaches, watercourses, lakes and the like and prevent erosion of their beds or banks”*;
- *“The Contractor shall ensure that all fuel or lubricating oils stored in bulk on the site are located as far as reasonably possible from any watercourse and that such stores are covered and surrounded with an effective bund capable of holding the full contents of the store, and shall be kept locked when not in use”*;
- *“The Contractor shall locate equipment using fuel oil as far away as reasonably possible from any watercourse and shall surround them with an oil-absorbent material to contain spills or leaks”*;
- *“Any refuelling or lubricating activities should be completed in manner that avoids/minimises the risk of spillages to the environment, and suitable spill kits should be at hand during any procedures”*; and
- *“On completion of the Works all apparatus, plant, tools, offices, sheds, surplus materials, rubbish and temporary erections or works of any kind shall be removed from the site by the Contractor”*..

4**Description of Relevant Baseline Environment****4.1.1 Sources informing the Baseline Description**

The baseline environment of the site for the Project as it related to European sites was analysed using the key sources below:

- Ordnance Survey Ireland mapping and aerial photography available from www.osi.ie;
- Information on land zonings and land-use plans available from the Department of the Environment, Community and Local Government at www.myplan.ie; and
- Lough Derg (Shannon) SPA, Site Synopsis⁷.
- Mapping of European site boundaries, Conservation Objectives and habitat /species distributions from NPWS online at www.npws.ie.

4.1.2 Baseline Description

The following baseline data was relevant to the identification of any source-pathway-receptor relationships between the works and any European sites.

4.1.3 Lough Derg and the River Shannon

The locations of the Met masts are shown in Graphics 2 and 3 above. The masts are located near the banks of the large shallow alkaline Lough Derg which straddles the boundaries of counties Galway (to the northwest), Tipperary (to the east), and Clare (to the west).

The lough is fed primarily by the River Shannon at its northern end near Portumna, which exits the lake at its southern end, and meets the sea in the Shannon estuary southwest of Limerick City. Lough Derg is also fed by several other key tributaries around its shores, including the Nenagh, Woodford, Ballyfinboy, Scariff and Crow Rivers.

The margins of Lough Derg are shallow, allowing opportunities for plant colonisation (including several invasive aquatic species). The shoreline is predominantly lined by reed and rush beds beside small settlements, pastures and woods.

⁷ NPWS (2014). Lough Derg (Shannon) SPA, Site Synopsis.

5

Consultation

A meeting was held between Jacobs Tobin, Irish Water the NPWS District Conservation Officer, NPWS Head of Ecological Assessment, and NPWS Divisional Ecologist on the 1st May 2014 to discuss the overall Water Supply Project. The specifics of the water quality and bathymetric surveys were not discussed, but the NPWS' comment on the AA for the overall project are applicable, namely that AA needs to clearly assess the significance of the effects on European sites, based on objective and scientific information [be] well-referenced and substantiated, and address the issue of cumulative effects and alternatives.

Several Conservation Rangers of the National Parks & Wildlife Service (NPWS) with responsibility for different areas of Lough Derg were contacted by phone in early June 2014 for local site-specific knowledge not contained within the available designated site documentation. In particular, the distribution of QI habitats and species and/or SCI bird species for European sites, and any known threats or pressures were discussed. Consultation with the NPWS will be ongoing throughout the Water Supply Project

6

Screening Assessment – Methodology for Identification of Relevant Sites

6.1 Identifying Relationships between the Works and any ‘Relevant’ European sites

A standard source-pathway-receptor conceptual model was used to identify a preliminary list of ‘relevant’ European sites (i.e. those which could be potentially affected). This conceptual model is a standard tool in environmental assessment⁸. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no likelihood for the effect to occur. In the context of the proposed works, the model comprises:

- **Source (s)** – e.g. construction of mast
- **Pathway (s)** – e.g. noise from construction works and construction workers
- **Receptor (s)** – e.g. disturbance to SCI bird populations of European sites.

The model was focused solely on the habitats and species for which sites were designated. If any relevant sites were identified, the pathways required assessment of whether effects would be “likely” and/or “significant”.

Where uncertainty existed due to data gaps, the precautionary principle prevailed. To account for far-field effects and/or more subtle indirect effects, Jacobs Tobin ecological expertise was applied to an examination of known threats and ecological requirements of qualifying ecological features⁹.

The duration of the works and their associated effects was also a key consideration, in particular because the European Court of Justice has recently ruled—albeit in specific reference to priority habitats—that effects to site integrity must be “lasting”¹⁰.

6.2 Proximity of European sites and their QI/SCI

Of primary importance for an analysis of effects is the location, proximity and the nature of the works in proximity to European sites. Given the minor and temporary nature of the works associated with constructing the masts and the distance of the works from the nearest waterbody (90m from Lough Derg shore) pollution impacts on waterbodies are not considered a potential risk and are not considered further in the assessment.

⁸See for example, the methodology employed by the Environmental Protection Agency to assess waste disposal sites (EPA, 2007) and in groundwater monitoring (Daly, 2004).

⁹ Threats and underlying ecological requirements sourced from NPWS (2013), other published sources, and Jacobs’ professional judgement as appropriate.

¹⁰ Judgment Of The European Court (Third Chamber) on 11 April 2013 in Case C-258/11 (REQUEST for a preliminary ruling under Article 267 TFEU from the Supreme Court (Ireland)) in relation to Peter Sweetman, Ireland, Attorney General, Minister for the Environment, Heritage and Local Government v An Bord Pleanála, para 46 (and others).

Figure 1 illustrates all sites within 15km of the Northern Met Mast and Figure 2 all sites within 15km of the Southern Mast as per Irish departmental guidance¹¹. Sites within 15km are also listed in Table 6.1.

Table 6.1 All European sites within 15km of the masts at Lough Derg

| Site Name and Code | Qualifying Interests (Summarised) | Distance from North Mast | Distance from South Mast |
|---|---|--------------------------|--------------------------|
| Special Protection Areas | | | |
| Lough Derg (Shannon) SPA [4058] | Breeding great cormorant <i>Phalacrocorax carbo</i> and common tern <i>Sterna hirundo</i> , wintering ducks, wetlands. | 200m | 90m |
| Middle Shannon Callows SPA [4096] | Breeding corncrake <i>Crex crex</i> , wintering waders, ducks, gulls, whooper swan <i>Cygnus cygnus</i> , wetlands. | 4.7km | 19.8km |
| Slieve Aughty Mountains SPA [4168] | Breeding hen harrier <i>Circus cyaneus</i> and merlin <i>Falco columbarius</i> . | 7.3km | 2.5km |
| Special Areas of Conservation | | | |
| Lough Derg, North-east Shore SAC [002241] | Heaths, calcareous grassland, limestone pavement, alluvial and yew forests. | 130m | 6km |
| Lower River Shannon cSAC [2165] | Freshwater pearl mussel <i>Margaritifera margaritifera</i> , three lamprey species, bottle-nosed dolphin <i>Tursiops truncatus</i> , otter <i>Lutra lutra</i> , wet grasslands, alluvial forests, floating river vegetation, estuarine, coastal, and marine habitats. | 29.5km | 14.7km |
| River Shannon Callows cSAC [216] | Otter, wet grasslands, meadows, limestone pavement, alluvial forests. | 4.7km | 19.8km |
| Barroughter Bog cSAC [231] | Raised bog habitats. | 4.9km | 15.7km |
| SlieveBernagh Bog cSAC [2312] | Heath and blanket bog. | 26.8km | 12.2km |
| Cloonmoylan Bog cSAC [248] | Raised bog habitats. | 4.5km | 12.4km |
| Kilcarren-Firville Bog cSAC [647] | Raised bog habitats. | 8.7km | 22.3km |
| Rosturra Wood cSAC [1313] | Oakwoods. | 7.4km | 14km |
| Pollanknockaun cSAC [319] | Oakwoods. | 8.5km | 14.4km |
| Derrycrag Wood Nature Reserve cSAC [261] | Oakwoods. | 8.5km | 12km |
| Loughatorick South Bog cSAC [308]0 | Blank bog habitat. | 13.8km | 7km |
| Liskeenan Fen cSAC [1683] | Fen. | 12.3km | 23.7km |
| Ardralgue Bog cSAC [2356] | Raised bog habitat. | 13.4km | 22.4km |
| Redwood Bog cSAC [2353] | Raised bog habitat. | 14.2km | 29.2km |

6.3 Relevant European Sites

¹¹ Source: DEHLG, 2010.

Relevant sites are listed in Table 6.2 below. For these sites potential source-pathway-receptor relationships between the Project and any QIs/SCIs were initially identified. Following on from this the potential source-pathway-receptor relationships were assessed in further detailed to identify any potential for LSEs on these relevant European sites. No potential for LSEs were identified and the rationale explained in Section 6.2.1.

Table 6.2 Relevant European Sites and potential Source-Pathway-Relationships with the Project

| Site and Code | Qualifying Interests potentially affected | Distance | Potential Source-Pathway-Receptor Relationship requiring further assessment | Potential for LSE |
|---------------------------------|--|----------|---|-------------------|
| Lough Derg (Shannon) SPA [4058] | <ul style="list-style-type: none"> • Great cormorant <i>Phalacrocorax carbo</i> [breeding] • Tufted duck <i>Aythya fuligula</i> [wintering] • Goldeneye <i>Bucephala clangula</i> [wintering] • Common tern <i>Sterna hirundo</i> [breeding] • Wetlands | 90-200m | Disturbance to wintering/ breeding birds during construction of met masts | No |
| River Shannon Callows SAC [216] | <ul style="list-style-type: none"> • Otter, wet grasslands, meadows, limestone pavement, alluvial forestsb | 4.7km | Disturbance to otter during construction of met masts | No |

6.4 Rationale for exclusion of other Source-Pathway-Receptors Relationships

Habitat Loss

The met masts required greenfield excavation, being constructed in grassland habitat. There was no pathway for habitat loss of QI from any relevant sites because the locations of the masts are outside of the designated sites and away from the shore of Lough Derg SAC and over 4km from the River Shannon Callows SAC. There was no potential for direct interaction with the waters of Lough Derg at either of the mast locations (as described in Section 6.1.2 above). There was no risk of habitat damage posed by the mast locations or access routes to these locations because they were all accessible by existing tracks, roadways or across fields that would have no potential to support QI habitats.

Invasive Species and Pollution

There was no pathway for QI habitats or species to be affected by pollution or invasive species because the locations of the masts are within agricultural fields outside of the designated sites, with no direct link between the mast locations and the European sites. The masts are located away from the shore of the lake meaning that the risk of transmission of invasive species or pollution was minimal. There were measures in place (see Section 3.1.1) to control any spillages during erection of the masts. The measures were put in place to prevent new introductions of

invasive plants to European sites and removed the likelihood of a spill incident pouring of concrete for installation of equipment.

Disturbance to SCI birds and otter

There was no pathway for SCI breeding birds (common tern and great cormorant) to be affected by the works because the works (installation of the masts) were undertaken in February outside the bird breeding season (March – August inclusive). Affects to otter were also ruled out given that there was no potential for loss of suitable resting sites/ habitat in the vicinity of the masts and all accesses were mainly along existing hardstanding. Lough Derg is important for a range of waterfowl species, including nationally important wintering populations of tufted duck and goldeneye. Both of these SCI species are water dwelling species which feed on invertebrates, mostly crustaceans, but also molluscs and occasionally small fish. These species would not be associated with habitats within which the masts were constructed. Furthermore given the short term nature of the construction works (one day) and the distance of the mast locations from the lake shore disturbance impacts on these species were considered not significant.

6.4.1 Potential for Likely Significant Effects

Only 'Relevant' sites and QIs potentially linked to the proposed Project by a source-pathway-receptor required further analysis to determine if the identified pathway could result in LSE. Following further analysis of the potential source-pathway-receptor links no potential for LSE on any SCI bird species or QI habitat/species was identified for the proposed Project as outlined in Section 6.3 above.

6.4.2 In-combination Effects

Where a source-pathway-receptor is likely to result in LSE from a given project the potential for in-combination effects with other plans and projects has to be examined. No potential for LSE were identified and therefore there is no potential for in-combination effects.

7 Screening Conclusion & Statement

The Project is not connected with or necessary to the management of any European sites.

No potential for LSE on European sites from the Project were identified. There is no potential for the Project, either alone, or in-combination with other plans or projects to result in adverse effects on the integrity of the European sites considered in this assessment. In accordance with Article 6(3) of the Habitats Directive, an AA is therefore not required.

Figure 1 European Sites within 15km of Northern Met Mast

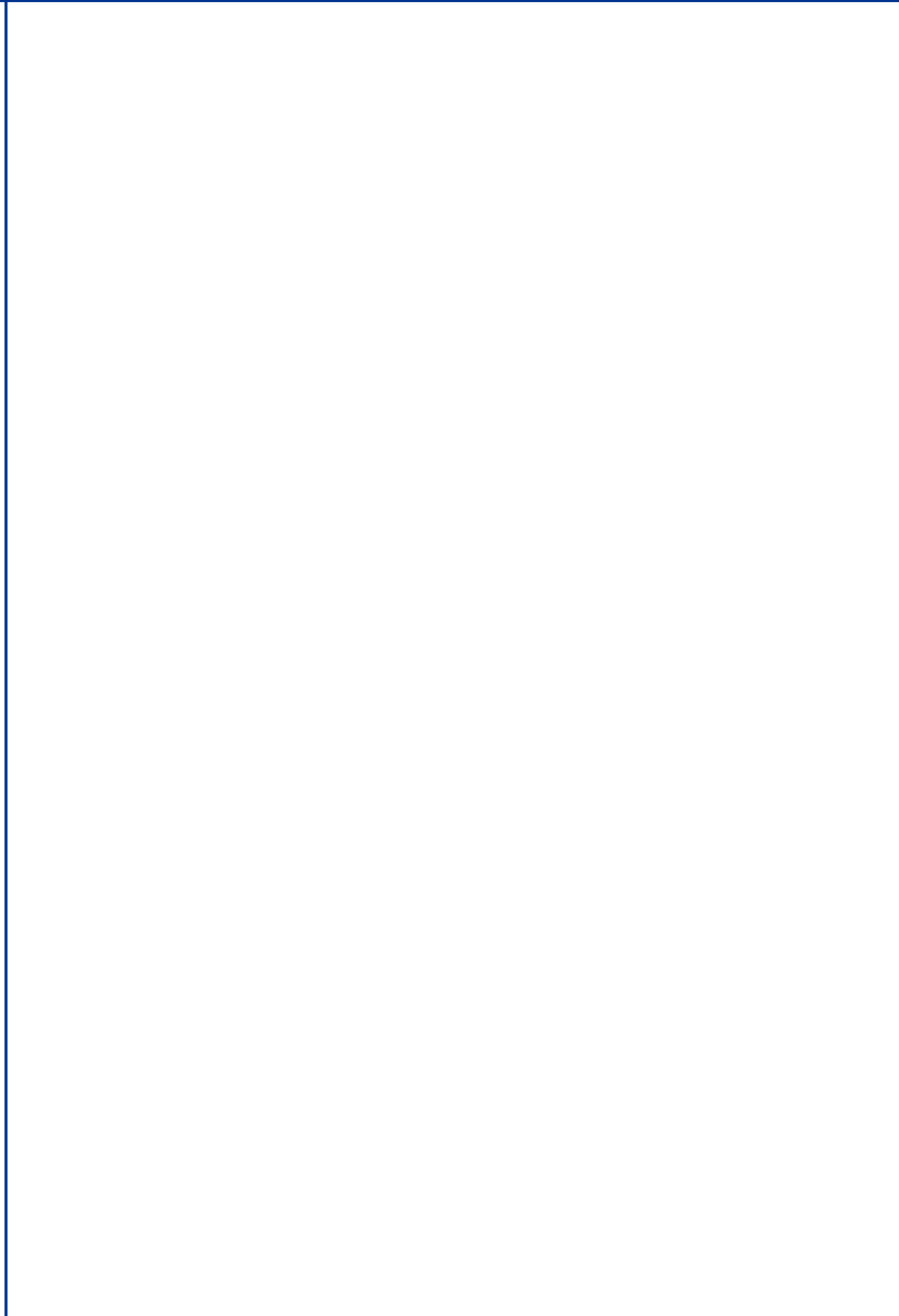


Figure 2 European Sites within 15km of Southern Met Mast

