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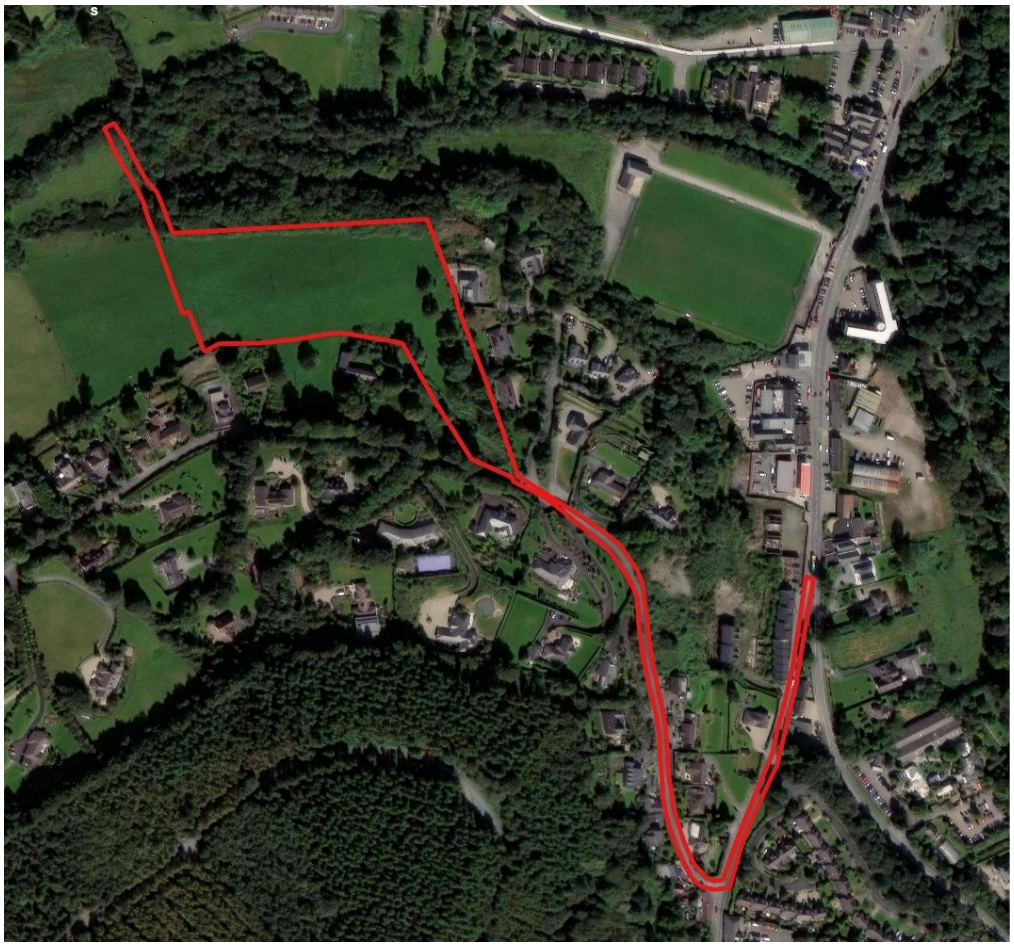
Marine & Environmental Consultancy



# Appropriate Assessment Screening & Natura Impact Statement - Information for a Stage 1 (AA Screening) and Stage 2 (Natura Impact Statement) AA for a Proposed Residential Development at Mountalto, Ashford, Co. Wicklow.



**23rd April 2026**

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**On behalf of:** Tyrrelstown Development Project Ltd.

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| Document Control Sheet | | | |
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| Project | Appropriate Assessment Screening & Natura Impact Statement- Information for a Stage 1 (AA Screening) and Stage 2 (Natura Impact Statement) AA for a proposed residential development at Mountalto, Ashford, Co. Wicklow. | | |
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# Contents

# Introduction

The following Appropriate Assessment Screening and Natura Impact Statement – Information for a Stage 1 (AA Screening) and Stage 2 (Natura Impact Statement) AA has been prepared by **Altemar Ltd.** at the request of Tyrrellstown Development Project Ltd. for a residential development at Mountalto, Ashford, Co. Wicklow. This AA Screening has been updated in response to Point 1 of a Request for Further Information received on planning application ref. no. 25/60881.



An Appropriate Assessment is an assessment of the potential effects of a proposed project or plan, on its own, or in combination with other plans or projects, on one or more European sites. European sites are those sites designated as Special Areas of Conservation (SAC) or Special Protection Areas (SPA).

The AA Screening stage examines the likely significant effects of a plan or project, either on its own, or in combination with other plans and projects, upon a European site and considers whether, on the basis of objective scientific evidence, it can be concluded that there are no likely significant effects on any European site, in view of best scientific knowledge and the conservation objectives of the relevant European sites.

The Natura Impact Statement examines whether the plan or project, either alone, or in combination with other plans and projects, in the view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European sites.

## Altemar Ltd.

Since its inception in 2001, Altemar has been delivering ecological and environmental services to a broad range of clients. Operational areas include residential, infrastructural, renewable, oil & gas, private industry, local authorities, EC projects and State/semi-State Departments. Bryan Deegan is the managing director of Altemar. Bryan is an environmental scientist and marine biologist with 30 years' experience working in Irish terrestrial and aquatic environments, providing services to the State, Semi-State and industry. Bryan Deegan (MCIEEM) holds a MSc in Environmental Science, BSc (Hons.) in Applied Marine Biology, NCEA National Diploma in Applied Aquatic Science and a NCEA National Certificate in Science (Aquaculture). Bryan Deegan reviewed all elements of this Appropriate Assessment Screening and Natura Impact Statement.

# Background to the Appropriate Assessment

The Habitats Directive 92/43/EEC (together with the Birds Directive (2009/147/EC)) forms the cornerstone of Europe's nature conservation policy. The Directive protects over 1000 animals and plant species and over 200 "habitat types" which are of European importance. In the Habitats Directive, Articles 3 to 9 provide the legislative means to protect habitats and species of European Community interest through the establishment and conservation of an EU-wide network of conservation sites (NATURA, 2000). These are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Birds Directive), Article 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment:

*"Any plan or project not directly connected with or necessary to the management of the [NATURA 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implication for the site and subject to the provisions of paragraph 4, the component 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."*

As outlined in "Managing European sites, The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC" (European Commission, 21 November 2018) *"The purpose of the appropriate assessment is to assess the implications of the plan or project in respect of the site's conservation objectives, either individually or in combination with other plans or projects. The conclusions should enable the competent authorities to ascertain whether the plan or project will adversely affect the integrity of the site concerned. The focus of the appropriate*

*assessment is therefore specifically on the species and/or the habitats for which the European site is designated."*

As outlined in the EC guidance document on Article 6(4) (January 2007)[1]:



*"Appropriate assessments of the implications of the plan or project for the site concerned must precede its approval and take into account the cumulative effects which result from the combination of that plan or project with other plans or projects in view of the site's conservation objectives. This implies that all aspects of the plan or project which can, either individually or in combination with other plans or projects, affect those objectives must be identified in the light of the best scientific knowledge in the field.*

*Assessment procedures of plans or projects likely to affect European sites should guarantee full consideration of all elements contributing to the site integrity and to the overall coherence of the network, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and residual impacts. These determine what has to be compensated, both in quality and quantity. Regardless of whether the provisions of Article 6(3) are delivered following existing environmental impact assessment procedures or other specific methods, it must be ensured that:*

- *Article 6(3) assessment results allow full traceability of the decisions eventually made, including the selection of alternatives and any imperative reasons of overriding public interest.*
- *The assessment should include all elements contributing to the site's integrity and to the overall coherence of the network as defined in the site's conservation objectives and Standard Data Form, and be based on best available scientific knowledge in the field. The information required should be updated and could include the following issues:*
    - *Structure and function, and the respective role of the site's ecological assets;*
    - *Area, representativity and conservation status of the priority and nonpriority habitats in the site;*
    - *Population size, degree of isolation, ecotype, genetic pool, age class structure, and conservation status of species under Annex II of the Habitats Directive or Annex I of the Birds Directive present in the site;*
    - *Role of the site within the biographical region and in the coherence of the European network; and,*
    - *Any other ecological assets and functions identified in the site.*
- *It should include a comprehensive identification of all the potential impacts of the plan or project likely to be significant on the site, taking into account cumulative impacts and other impacts likely to arise as a result of the combined action of the plan or project under assessment and other plans or projects.*
- *The assessment under Article 6(3) applies the best available techniques and methods, to estimate the extent of the effects of the plan or project on the biological integrity of the site(s) likely to be damaged.*
- *The assessment provides for the incorporation of the most effective mitigation measures into the plan or project concerned, in order to avoid, reduce or even cancel the negative impacts on the site.*
- *The characterisation of the biological integrity and the impact assessment should be based on the best possible indicators specific to the European assets which must also be useful to monitor the plan or project implementation."*

[1] European Commission. (2007).Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission;

## Stages of the Appropriate Assessment

This Appropriate Assessment screening was undertaken in accordance with the European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (EC, 2001), Part XAB of the Planning and Development Act 2000, as amended, in addition to the December 2009 publication from the Department of Environment, Heritage and Local Government; 'Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities' and the European Communities (Birds and Natural Habitats) Regulations 2011. In order to comply with the above Guidelines and legislation, the Appropriate Assessment process must be structured as follows:



1) Screening stage:
    - Description of plan or project, and local site or plan area characteristics;
    - Identification of relevant European sites, and compilation of information on their qualifying interests and conservation objectives
    - Identification and description of individual in combination effects likely to result from the proposed project;
    - Assessment of the likely significance of the effects identified above. Exclusion of sites where it can be objectively concluded that there will be no likely significant effects; and,

      Conclusions
2) Appropriate Assessment (Natura Impact Statement):
    - Description of the European sites that will be considered further;
    - Identification and description of potential adverse impacts on the conservation objectives of these sites likely to occur from the project or plan; and,
    - Mitigation Measures that will be implemented to avoid, reduce or remedy any such potential adverse impacts
    - Assessment as to whether, following the implementation of the proposed mitigation measures, it can be concluded, beyond all reasonable scientific doubt, that there will be no adverse impact on the integrity of the relevant European Site in light of its conservation objectives"
    - Conclusions.

If it can be demonstrated during the AA screening phase (Stage 1), that the proposed project will not have a significant effect, whether alone or in combination with other plans or projects, on the conservation objectives of a Natura 2000 site, then no further AA (Stage 2) will be required. It is important to note that there is a requirement to apply a precautionary approach to AA screening. Therefore, where effects are possible, certain or unknown at the screening stage, AA will be required.

In addition, it should be noted that Article 6(3) of the Habitats Directive must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an AA of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.

# Stage 1 Screening Assessment

## Management of the Site

The plan or project is not directly connected with, or necessary to, the management of European sites.



## Description of the Proposed Project

Proposed development consisting of 40 dwellings with connection to services, and all ancillary site works including roads, footpaths, public lighting, open space and landscaping at Mountalto, Ashford, Co. Wicklow.

This AA Screening & Natura Impact Statement has been updated to address Point 1 of a Request for Further Information received in response to the planning application ref. 25/60881, which states:

*'It is set out in the NIS that foul drainage from the proposed development will be pumped to the existing public wastewater network near the southeastern boundary where it will be treated under the public network. Therefore, no significant effects on designated sites are foreseen from foul water drainage. However, it is considered that the NIS has not sufficiently assessed the risks associated with a pumping station and it is noted that there are no mitigation measures (overflow rates, alarmed station etc) or management of the pumping station detailed within the NIS. In this regard, it is considered that a revised/updated NIS is required to clarify that the risks associated with the foul pumping station in proximity to the Vartry River which is hydrologically linked to the Murrough Wetlands SAC have been appropriately assessed.'*

The updated pump station design measures, outlined in the 'Drainage' section below have been have been incorporated into this assessment.

The site outline, site location, site layout plan and building elevations are shown in Figures 1-3.

## Landscape

The landscape strategy for the proposed development has been prepared by Greenrooms Design. The proposed planting plan is shown in Figure 4.

## Drainage

An Engineering Planning Report has been prepared by POGA Consulting Engineers for the proposed project. It outlines the following drainage strategy:

***'EXISTING SERVICES***

***2.1 Surface Water***

*The site naturally falls towards the River Vartry, which is located at the North of the site, it is proposed this river will be used as a surface water outfall from the proposed development.*

***2.2 Wastewater***

*The wastewater will be directed to a pumping station located at the northeastern area of the site. From there, it will be pumped through a Ø100mm HDPE rising main to the site entrance. At that point, an extension of approximately 770m will be constructed to connect into the existing wastewater network, in line with the pre-connection feasibility approval received from Uisce Éireann (Irish Water).*

***PROPOSED SURFACE WATER MANAGEMENT***

***Site Control***

*Site control comprises runoff and treatment installations to serve individual developments (or combinations of developments on adjacent sites), using elements such as detention basin, swales, rain garden and tree pits. On this development we are proposing to use an attenuation basin to control the flows to the existing stream.*

***WASTEWATER***

*All wastewater pipes sizes and gradients are designed in accordance with the Department of Environment Recommendation for Site Development Works, Irish Water Standards and the Building Regulations.*

*The nearest viable wastewater pipe for connecting into the existing network is located near the southwestern boundary of the site, with an invert level of approximately 54.40m AOD.*

*A gravity connection to this pipe was considered, but it was deemed unfeasible due to sit levels. Instead, the wastewater will be directed to a pumping station positioned at the northeastern area of the site. From there, flows will be pumped through a Ø100mm HDPE rising main to the site entrance. At that point, a further extension of approximately 770m will be constructed to connect into the existing wastewater network, in accordance with the pre-connection feasibility approval issued by Uisce Éireann (Irish Water) — see Appendix J.*



*The proposed foul pumping station has been designed in accordance with the requirements of the Code of Practice for Wastewater Infrastructure by Uisce Éireann (Irish Water) and incorporates appropriate operational and environmental measures. The pumping station is classified as a Type 3 station in accordance with the Code of Practice, with an overall installed power capacity of less than 20 kW. The pumping station will provide 2 pumps on a duty and duty assist basis. Having two pumps will help ensure continuity of service even if one pumps fails under normal and peak flow conditions. In the event of either or both pump failure or power outage, the wet well and overflow tank is sized to provide a minimum of 24-hour emergency storage capacity. The pumping station will be fully automated and equipped with a telemetry-based alarm system to provide real-time monitoring and fault notification, enabling prompt operational response and maintenance. This robust design is intended to eliminate the likelihood of overflow affecting the River Vartry.'*

A flood-risk assessment was undertaken as part of the Engineering Planning Report., which concluded with the following:

***FLUVIAL FLOODING***

*There is no source of flooding predicted in the vicinity of the site from a search done of few past flood events occurring around the surrounding area, however we would classify the risk of flooding as low. Please refer to Fig.1 for flood events around the subject site.*

***PLUVIAL FLOODING***

*Based on the latest available data from the Flood Map search, it has been noted that Ashford is still under review, and no pluvial flooding is currently indicated in the area. However, for the purposes of this assessment, Poga has referred to the Strategic Drainage Study (GDSDS) to ensure that appropriate measures are in place.*

*Additionally, the River Quality Protection and River Regime Protection criteria have been met, with the required interception and treatment volumes being provided within the area. Given these considerations, we would classify the risk of pluvial flooding in Ashford as low.*

***COSTAL FLOODING***

*The subject site is located over 6km inland from a coastline. Therefore, there are no Coastal Flood Extents shown on the area. This confirms the subject site is situated in Flood Zone C in regard to Coastal Flooding. Given the distance to the coast and the elevation of the site (56m AOD) it is the opinion of POGA Consulting Engineers that the risk of coastal flooding is very low."*

The proposed drainage layout is demonstrated in Figure 5. The pump station layout details are included in Appendix I.

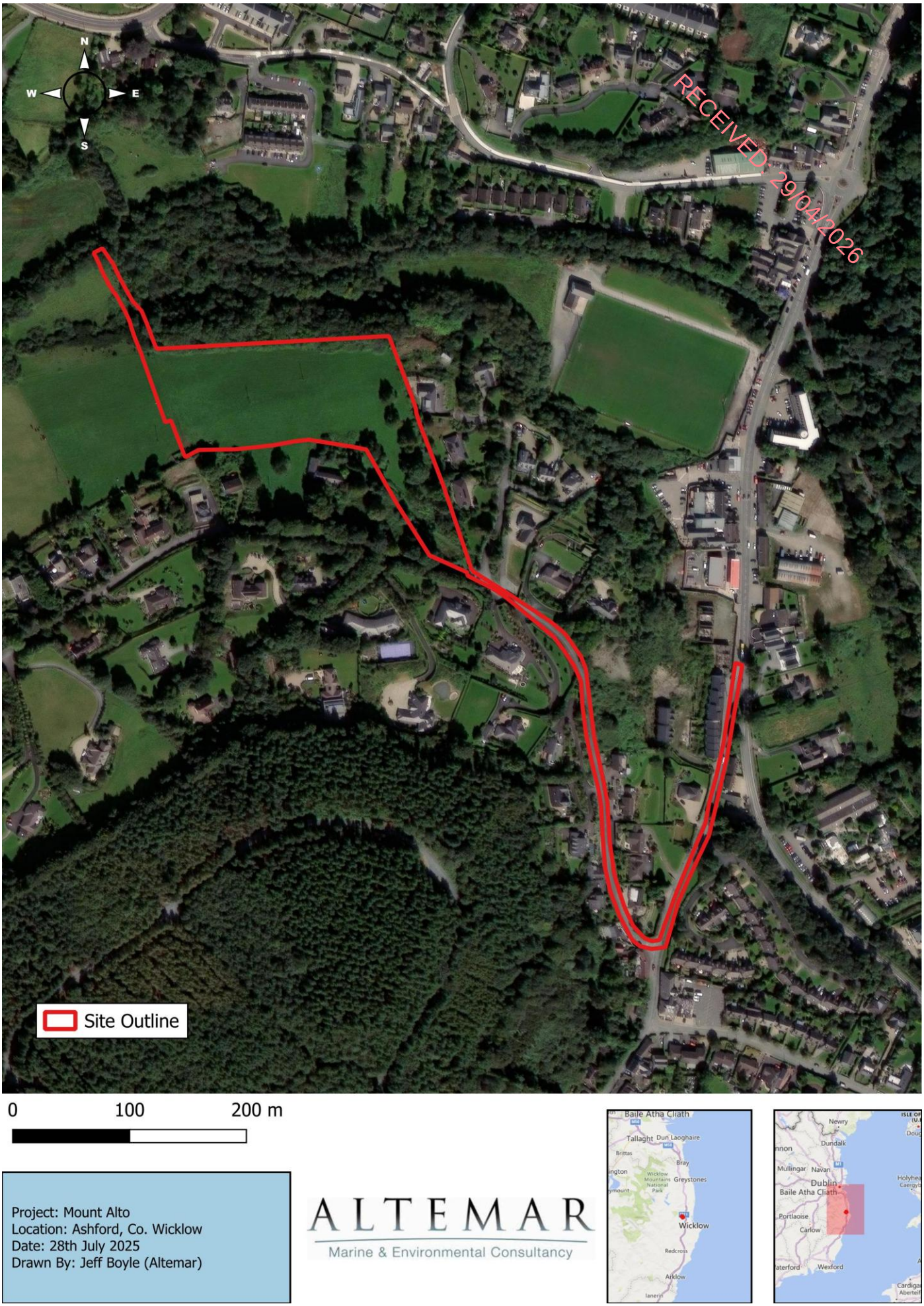



*Figure 1. Site outline*


*Figure 2. Site outline*

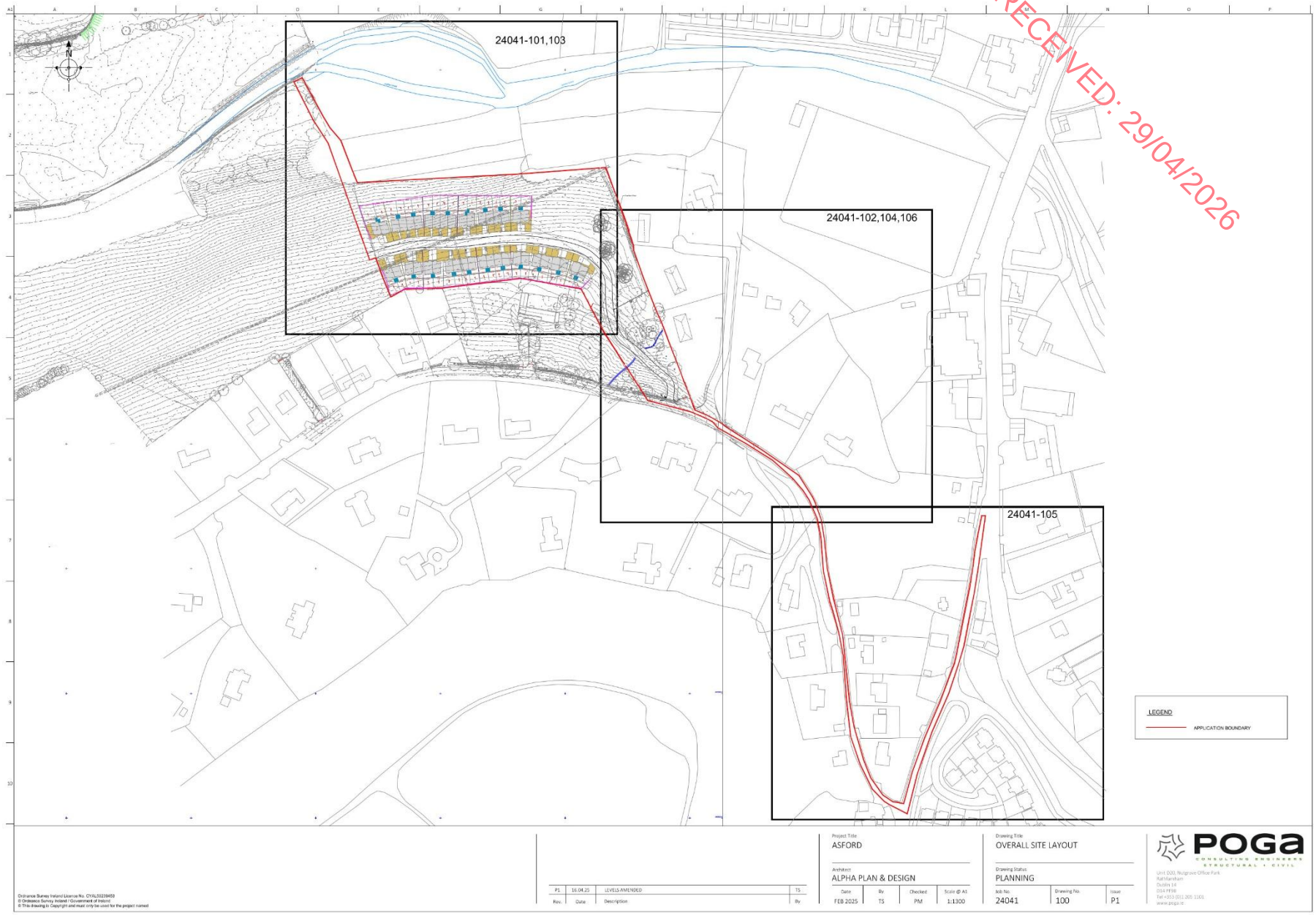



*Figure 3. Overall site layout plan*


*Figure 4. Proposed landscape masterplan and planting plan*

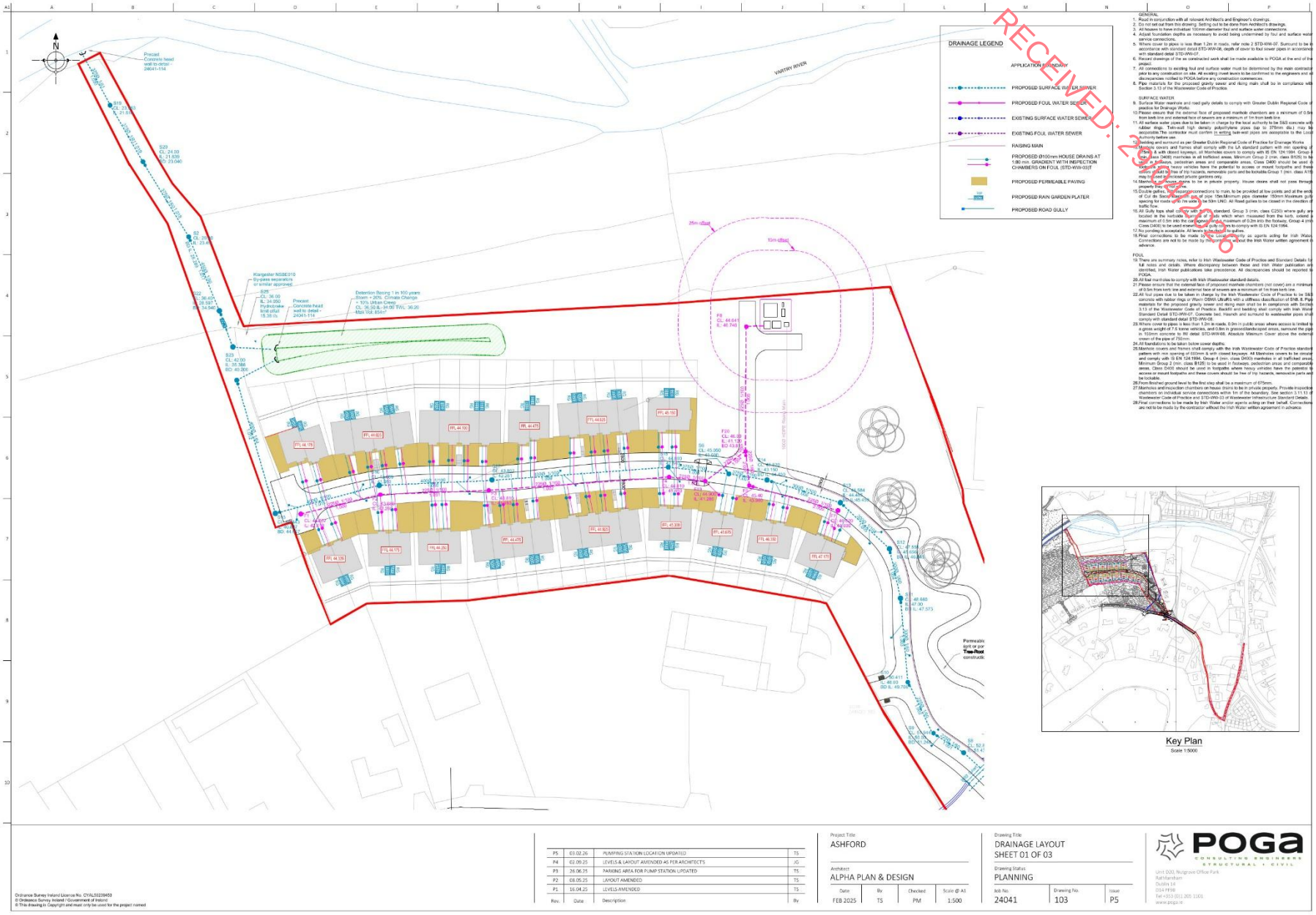





*Figure 5. Proposed drainage layout*

## Identification of Relevant European Sites

The proposed development site is not located within a European site. As outlined in 'OPR Practice Note PN01; Appropriate Assessment Screening for Development Management' by the Office of the Planning Regulator (2021) "*The zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework and not by arbitrary distances (such as 15 km)*."



A key factor in the consideration as to whether a particular European site is likely to be affected by the proposed development is its distance from the development location. It is generally, but not necessarily, the case that the greater the distance from the plan or project the smaller the likelihood of impacts. In this case, the nearest European sites to the proposed development are The Murrough Wetlands SAC (3km) and The Murrough SPA (3.2km). The nearest waterbody is the Vartry River located approximately 60m north of the main works area of the site, at its closest point.

After onsite attenuation and SuDS measures, it is proposed to discharge surface water to the Vartry River located to the north of the site as shown in Figure 8. This River flows approximately 4.2km east to its outfall at the Murrough Wetlands SAC and The Murrough SPA. It is therefore considered that there is a direct hydrological connection between the proposed development works and these Natura 2000 sites. In the absence of mitigation measures, there is the potential for dust, silt, petrochemicals and pollutants to enter the Vartry River during construction works, and contaminated surface water discharge during operational phases of the proposed development, which may impact upon designated downstream sites at The Murrough. As the main works area of the site is c. 60m from the watercourse, and drainage works are required at the Vartry River including the installation of a headwall, in the absence of mitigation measures, there is the potential for water quality impacts on the Vartry River which could significantly affect downstream designated sites during the construction and operational phases of development.

Foul drainage from the proposed development will be directed to a pumping station positioned at the northeastern area of the site and thereafter will be pumped to the existing public wastewater network near the southeastern boundary where it will be treated under the public network. The proposed foul pumping station has been designed in accordance with the requirements of the Code of Practice for Wastewater Infrastructure by Uisce Éireann (Irish Water) and incorporates appropriate operational and environmental measures. As outlined in the Engineering Planning Report by Poga Consulting Engineers:

'*The pumping station will provide 2 pumps on a duty and duty assist basis. Having two pumps will help ensure continuity of service even if one pumps fails under normal and peak flow conditions. In the event of either or both pump failure or power outage, the wet well and overflow tank is sized to provide a minimum of 24-hour emergency storage capacity. The pumping station will be fully automated and equipped with a telemetry-based alarm system to provide real-time monitoring and fault notification, enabling prompt operational response and maintenance. This robust design is intended to eliminate the likelihood of overflow affecting the River Vartry.*' Therefore, no significant effects on designated sites are foreseen from foul water drainage.

In the interest of carrying out a thorough assessment in line with both the Habitats Directive, and the precautionary principle, the ZoI was expanded for this assessment to include designated sites within 15km of the proposed development site, and sites beyond 15km with the potential for a hydrological connection. This was done in the interest of ensuring that any pathways, however indirect or remote, were considered. The Natura 2000 sites within 15km are seen in Figures 6 & 7. Watercourses and Natura 2000 sites proximate to the proposed development are demonstrated in Figures 8 - 10. All Natura 2000 sites within 15km are listed in Table 1. The conservation objectives, qualifying interests, and the potential impact of the development on each European site and qualifying interest, are outlined in Table 2. There is no direct or indirect pathway to Natura 2000 sites beyond 15km given the extensive marine environment between the River Vartry's outfall at the Murrough and marine-based designated sites, and the significant level of hydrological dispersion which would occur between any contamination event within the proposed development site and the Irish Sea. No European Sites beyond 15km could be impacted by the proposed development.

*Table 1. Natura 2000 sites within 15km*

| European Site | Distance | Direct Pathway |
|---|---|---|
| The Murrough Wetlands SAC | 3 km | Yes |
| Deputy's Pass Nature Reserve SAC | 7 km | No |
| Vale of Clara (Rathdrum Wood) SAC | 8.3 km | No |
| Wicklow Reef SAC | 8.5 km | No |
| Wicklow Mountains SAC | 9.7 km | No |
| Carriggower Bog SAC | 10.6 km | No |
| Magherabeg Dunes SAC | 10.6 km | No |
| Glen of the Downs SAC | 13 km | No |
| Buckroney-Brittas Dunes and Fen SAC | 13.3 km | No |
| | | |
| The Murrough SPA | 3.2 km | Yes |
| Wicklow Head SPA | 7.3 km | No |
| Wicklow Mountains SPA | 11.5 km | No |



*Table 2. Initial screening of European sites within 15km and European sites beyond 15km with potential of hydrological connection to the proposed development*

| European Site Code | Name | Screened IN/OUT | Details/Reason |
|---|---|---|---|
| **Special Areas of Conservation** | | | |
| IE002249 | The Murrough Wetlands SAC | **IN** | **Conservation Objectives**<br>To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.<br><br>**Qualifying Interests**<br>Annual vegetation of drift lines [1210]<br>Perennial vegetation of stony banks [1220]<br>Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]<br>Mediterranean salt meadows (*Juncetalia maritimi*) [1410]<br>Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210]<br>Alkaline fens [7230]<br><br>**Potential Impact**<br>The proposed development site is locaed approximately 3km from this SAC. There is a direct connection between the proposed development site and this SAC via surface water drainage to the Vartry River. This river flows approximately 4.2 km east to its outfall at The Murrough Wetlands SAC.<br><br>In the absence of mitigation measures, there is the potential for dust, silt, petrochemicals and pollutants to enter the Vartry River during construction works, and contaminated surface water discharge during operational phases of the proposed development, which may impact upon designated downstream sites at The Murrough. As the main works area of the site is c. 60m from the watercourse, and drainage works are required at the Vartry River including the installation of a headwall, in the absence of mitigation measures, there is the potential for water quality impacts on the Vartry River which could significantly affect downstream designated sites during the construction and operational phases of development. |

| European Site Code | Name | Screened IN/OUT | Details/Reason |
|---|---|---|---|
| | | | Out of an abundance of caution, and in the absence of mitigation, it is considered that there is the potential for significant downstream effects on the qualifying interests of The Murrough Wetlands SAC via this direct hydrological pathway.<br>Foul drainage from the proposed development will be directed to a pumping station positioned at the northeastern area of the site and thereafter will be pumped to the existing public wastewater network near the southeastern boundary where it will be treated under the public network. The pump station has been desinged with management measures including two pumps in the case of one pump failure, in addition to a wet well and overflow tank which will provide emergency storage capacity. The pump station will also be equipped with an alarm system, enabling prompt operational response in the event of a fault. Therefore, in the absence of mitigation, foul drainage from the site will not significantly affect the qualifying interests of this SAC.<br>Mitigation measures are required to protect the qualifying interests of this SAC due to the direct hydrological pathway via surface water drainage.<br>**Stage 2 AA (NIS) is Required.** |
| IE000717 | Deputy's Pass Nature Reserve SAC | **OUT** | **Conservation Objectives**<br>The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.<br>**Qualifying Interests**<br>Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]<br>**Potential Impact**<br>The proposed development is located approximately 7km from this SAC. There is no direct or indirect pathway from the site to this SAC.<br>No potential impact is foreseen. The construction and operation of the proposed development will not impact on the conservation interests of the site.<br>**No significant effects are likely.** |
| IE000733 | Vale of Clara (Rathdrum Wood) SAC | **OUT** | **Conservation Objectives**<br>The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.<br>**Qualifying Interests**<br>Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]<br>**Potential Impact**<br>The proposed development is located approximately 8.3km from this SAC. There is no direct or indirect pathway from the site to this SAC.<br>No potential impact is foreseen. The construction and operation of the proposed development will not impact on the conservation interests of the site.<br>**No significant effects are likely.** |

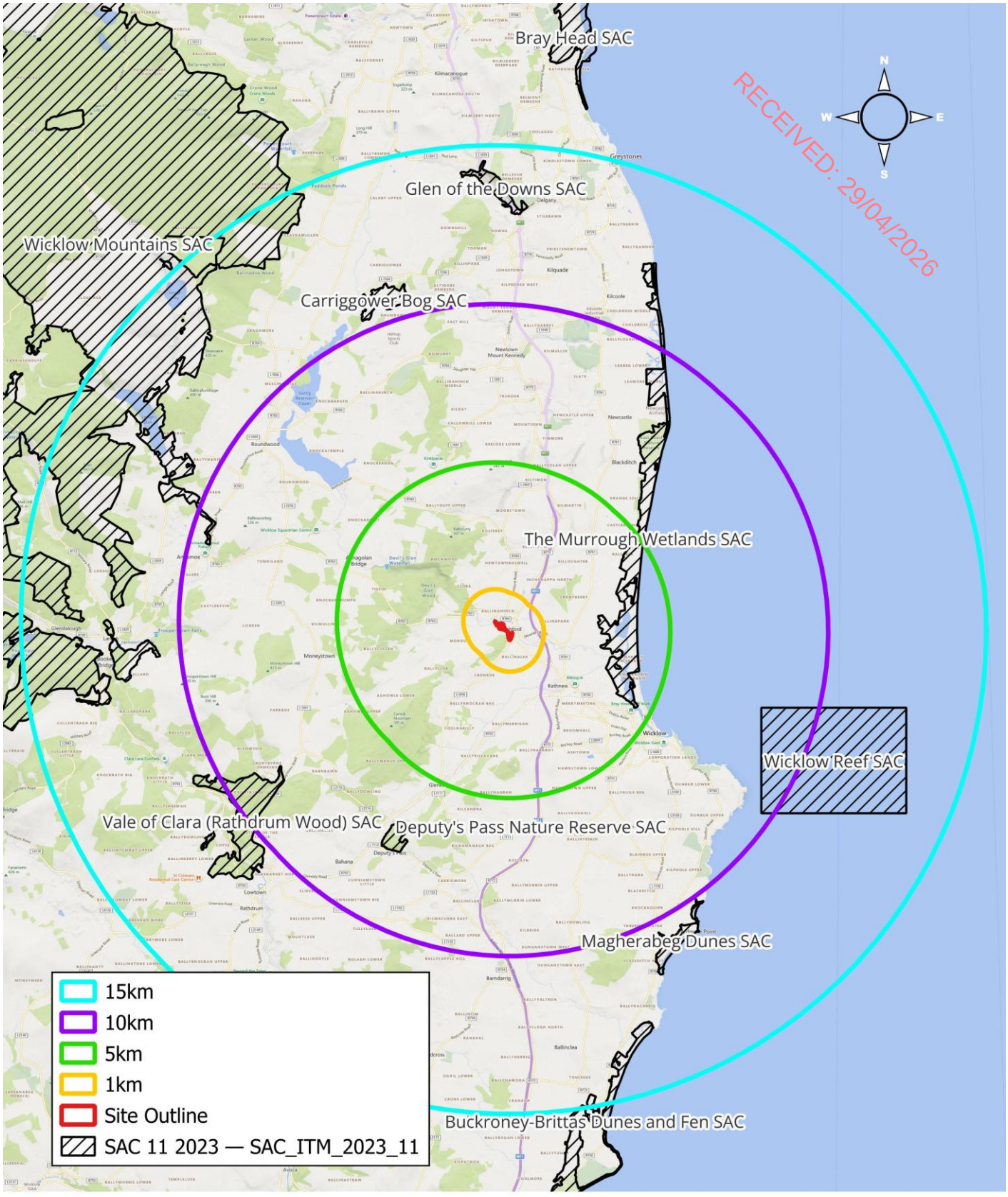
| European Site Code | Name | Screened IN/OUT | Details/Reason |
|---|---|---|---|
| IE002274 | Wicklow Reef SAC | **OUT** | **Conservation Objectives**<br>The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.<br><br>**Qualifying Interests**<br>Reefs [1170]<br><br>**Potential Impact**<br>The proposed development is located approximately 8.5km from this SAC. There is no direct pathway from the site to this SAC.<br><br>There is a tenuous indirect pathway from the proposed development site to this SAC via surface water drainage to the Vartry River during operation and construction.<br><br>However, given the minimum distrance from the proposed development site to this SAC (8.5km) and the extensive marine environment between the River Vartry's outfall and this SAC, any pollutants, dust or silt laden run off will be dispersed, diluted, and ultimately settle within the River Vartry and marine environment at Wicklow Harbour.<br><br>Foul drainage from the proposed development will be directed to a pumping station positioned at the northeastern area of the site and thereafter will be pumped to the existing public wastewater network near the southeastern boundary where it will be treated under the public network. The pump station has been desinged with management measures including two pumps in the case of one pump failure, in addition to a wet well and overflow tank which will provide emergency storage capacity. The pump station will also be equipped with an alarm system, enabling prompt operational response in the event of a fault.<br><br>In the absence of mitigation, foul drainage from the site will not significantly affect the qualifying interests of this SAC.<br><br>No potential impact is foreseen. There is no direct pathway from the site to the SAC. The construction and operation of the proposed development will not impact on the conservation interests of the site.<br><br>**No significant effects are likely.** |
| IE002122 | Wicklow Mountains SAC | **OUT** | **Conservation Objectives**<br>The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.<br><br>**Qualifying Interests**<br>Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110]<br>Natural dystrophic lakes and ponds [3160]<br>Northern Atlantic wet heaths with *Erica tetralix* [4010]<br>European dry heaths [4030]<br>Alpine and Boreal heaths [4060]<br>Calaminarian grasslands of the *Violetalia calaminariae* [6130] |

| European Site Code | Name | Screened IN/OUT | Details/Reason |
|---|---|---|---|
| | | | Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230]<br>Blanket bogs (* if active bog) [7130]<br>Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110]<br>Calcareous rocky slopes with chasmophytic vegetation [8210]<br>Siliceous rocky slopes with chasmophytic vegetation [8220]<br>Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]<br>Otter *(Lutra lutra*) [1355]<br><br>**Potential Impact**<br>The proposed development is located approximately 9.7km from this SAC. There is no direct or indirect pathway from the site to this SAC.<br><br>No potential impact is foreseen. The construction and operation of the proposed development will not impact on the conservation interests of the site.<br><br>**No significant effects are likely.** |
| IE000716 | Carriggower Bog SAC | **OUT** | **Conservation Objectives**<br>The maintenance of habitats and species within European sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.<br><br>**Qualifying Interests**<br>Transition mires and quaking bogs [7140]<br><br>**Potential Impact**<br>The proposed development is located approximately 10.6km from this SAC. There is no direct or indirect pathway from the site to this SAC.<br><br>No potential impact is foreseen. The construction and operation of the proposed development will not impact on the conservation interests of the site.<br><br>**No significant effects are likely.** |
| IE001766 | Magherabeg Dunes SAC | **OUT** | **Conservation Objectives**<br>To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.<br><br>**Qualifying Interests**<br>Annual vegetation of drift lines [1210]<br>Embryonic shifting dunes [2110]<br>Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]<br>Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]<br>Petrifying springs with tufa formation (Cratoneurion) [7220]<br><br>**Potential Impact**<br>The proposed development is located approximately 10.6km from this SAC. There is no direct or indirect pathway from the site to this SAC.<br><br>No potential impact is foreseen. The construction and operation of the proposed development will not impact on the conservation interests of the site.<br><br>**No significant effects are likely.** |

| European Site Code | Name | Screened IN/OUT | Details/Reason |
|---|---|---|---|
| IE000719 | Glen of the Downs SAC | **OUT** | **Conservation Objectives**<br>The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.<br>**Qualifying Interests**<br>Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]<br><br>**Potential Impact**<br>The proposed development is located approximately 13km from this SAC. There is no direct or indirect pathway from the site to this SAC.<br><br>No potential impact is foreseen. The construction and operation of the proposed development will not impact on the conservation interests of the site.<br><br>**No significant effects are likely.** |
| IE000729 | Buckroney-Brittas Dunes and Fen SAC | | **Conservation Objectives**<br>The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.<br>**Qualifying Interests**<br>Annual vegetation of drift lines [1210]<br>Perennial vegetation of stony banks [1220]<br>Mediterranean salt meadows (Juncetalia maritimi) [1410]<br>Embryonic shifting dunes [2110]<br>Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]<br>Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]<br>Atlantic decalcified fixed dunes (Calluno-Ulicetea) [2150]<br>Dunes with Salix repens ssp. argentea (Salicion arenariae) [2170]<br>Humid dune slacks [2190]<br>Alkaline fens [7230]<br><br>**Potential Impact**<br>The proposed development is located approximately 13.3 km from this SAC. There is no direct or indirect pathway from the site to this SAC.<br><br>No potential impact is foreseen. The construction and operation of the proposed development will not impact on the conservation interests of the site.<br><br>**No significant effects are likely.** |
| **Special Protection Areas** | | | |
| IE004186 | The Murrough SPA | **IN** | **Conservation Objectives**<br>To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.<br><br>To maintain or restore the favourable conservation condition of the wetland habitat at The Murrough SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.<br><br>**Qualifying Interests**<br>Red-throated Diver (*Gavia stellata*) [A001]<br>Greylag Goose (*Anser anser*) [A043] |

| European Site Code | Name | Screened IN/OUT | Details/Reason |
|---|---|---|---|
| | | | Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]<br>Wigeon (*Anas penelope*) [A050]<br>Teal (*Anas crecca*) [A052]<br>Black-headed Gull (*Chroicocephalus ridibundus*) [A179]<br>Herring Gull (*Larus argentatus*) [A184]<br>Little Tern (*Sterna albifrons*) [A195]<br>Wetland and Waterbirds [A999]<br><br>**Potential Impact**<br>The proposed development site is locaed approximately 3.2km form this SPA. There is a direct connection between the proposed works and development site and this SPA via surface water drainage to the Vartry River. This river flows approximately 4.2 km east to its outfall at The Murrough SPA.<br><br>In the absence of mitigation measures, there is the potential for dust, silt, petrochemicals and pollutants to enter the Vartry River during construction works, and contaminated surface water discharge during operational phases of the proposed development, which may impact upon designated downstream sites at The Murrough. As the main works area of the site is c. 60m from the watercourse, and drainage works are required at the Vartry River including the installation of a headwall, in the absence of mitigation measures, there is the potential for water quality impacts on the Vartry River which could significantly affect downstream designated sites during the construction and operational phases of development.<br><br>Out of an abundance of caution, and in the absence of mitigation, it is considered that there is the potential for significant downstream effects on the qualifying interests of The Murrough SPA via this direct hydrological pathway.<br><br>Foul drainage from the proposed development will be directed to a pumping station positioned at the northeastern area of the site and thereafter will be pumped to the existing public wastewater network near the southeastern boundary where it will be treated under the public network. The pump station has been desinged with management measures including two pumps in the case of one pump failure, in addition to a wet well and overflow tank which will provide emergency storage capacity. The pump station will also be equipped with an alarm system, enabling prompt operational response in the case of a fault.<br><br>Therefore, in the absence of mitigation, foul drainage from the site will not significantly affect the qualifying interests of this SPA.<br>Given the distance between the subject site and this SPA (c. 3.2km), no significant effects on QI species of this SPA are foreseen from noise or vibration during the construction phase of development.<br><br>Mitigation measures are required to protect the qualifying interests of this SPA due to the direct hydrological pathway via surface water drainage.<br><br>**Stage 2 AA (NIS) is Required.** |
| IE004127 | Wicklow Head SPA | **OUT** | **Conservation Objectives**<br>To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.<br><br>**Qualifying Interests** |

| European Site Code | Name | Screened IN/OUT | Details/Reason |
|---|---|---|---|
| | | | Kittiwake (Rissa tridactyla) [A188]<br><br>**Potential Impact**<br>The proposed development is located approximately 7.3km from this SPA. There is no direct pathway from the site to this SPA.<br><br>There is an indirect pathway from the proposed development site to this SPA via surface water drainage to the Vartry River during operation and construction.<br><br>However, given the minimum distrance from the proposed development site to this SAC (7.3km) and the substantial marine environment between the River Vartry's outfall and this SPA, any pollutants, dust or silt laden run off will be dispersed, diluted, and ultimately settle within the River Vartry and marine environment at Wicklow Harbour.<br><br>Foul drainage from the proposed development will be directed to a pumping station positioned at the northeastern area of the site and thereafter will be pumped to the existing public wastewater network near the southeastern boundary where it will be treated under the public network. The pump station has been desinged with management measures including two pumps in the case of one pump failure, in addition to a wet well and overflow tank which will provide emergency storage capacity. The pump station will also be equipped with an alarm system, enabling prompt operational response in the case of a fault.<br><br>In the absence of mitigation, no significant effects on the qualifying interests of this SPA are likely.<br><br>**No significant effects likely.** |
| IE004040 | Wicklow Mountains SPA | **OUT** | **Conservation Objectives**<br>To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.<br><br>**Qualifying Interests**<br>*Falco colombarius* (Merlin) [A098]<br>*Falco peregrinus* (Peregrine) [A103]<br><br>**Potential Impact**<br>The proposed development site is located 11.5 km from this SPA. There is no direct or indirect pathway between the subject site and this SPA.<br><br>No potential impact is foreseen. There is no direct or indirect pathway from this site to the SPA. The construction and operation of the proposed development will not impact on the conservation interests of the site.<br><br>**No significant effects likely.** |




Project: Mountalto
Location: Ashford, Co. Wicklow
Date: 25th August 2025
Drawn by: Jeff Boyle (Altemar)

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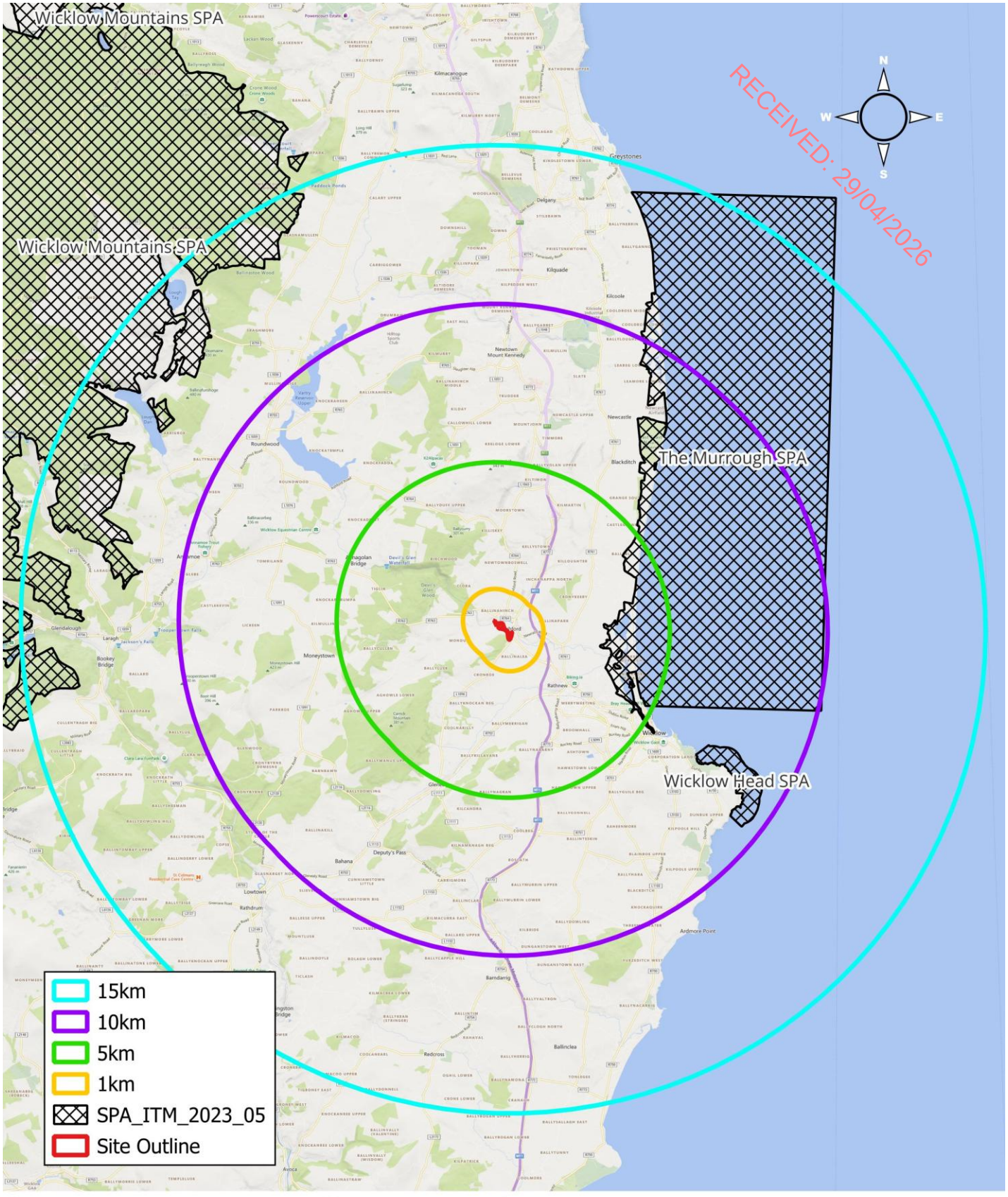
Marine & Environmental Consultancy



*Figure 6. SACs within 15km of the subject site*






Project: Mountalto
Location: Ashford, Co. Wicklow
Date: 25th August 2025
Drawn by: Jeff Boyle (Altemar)

ALTEMAR
Marine & Environmental Consultancy

*Figure 7. SPAs within 15km of the subject site*

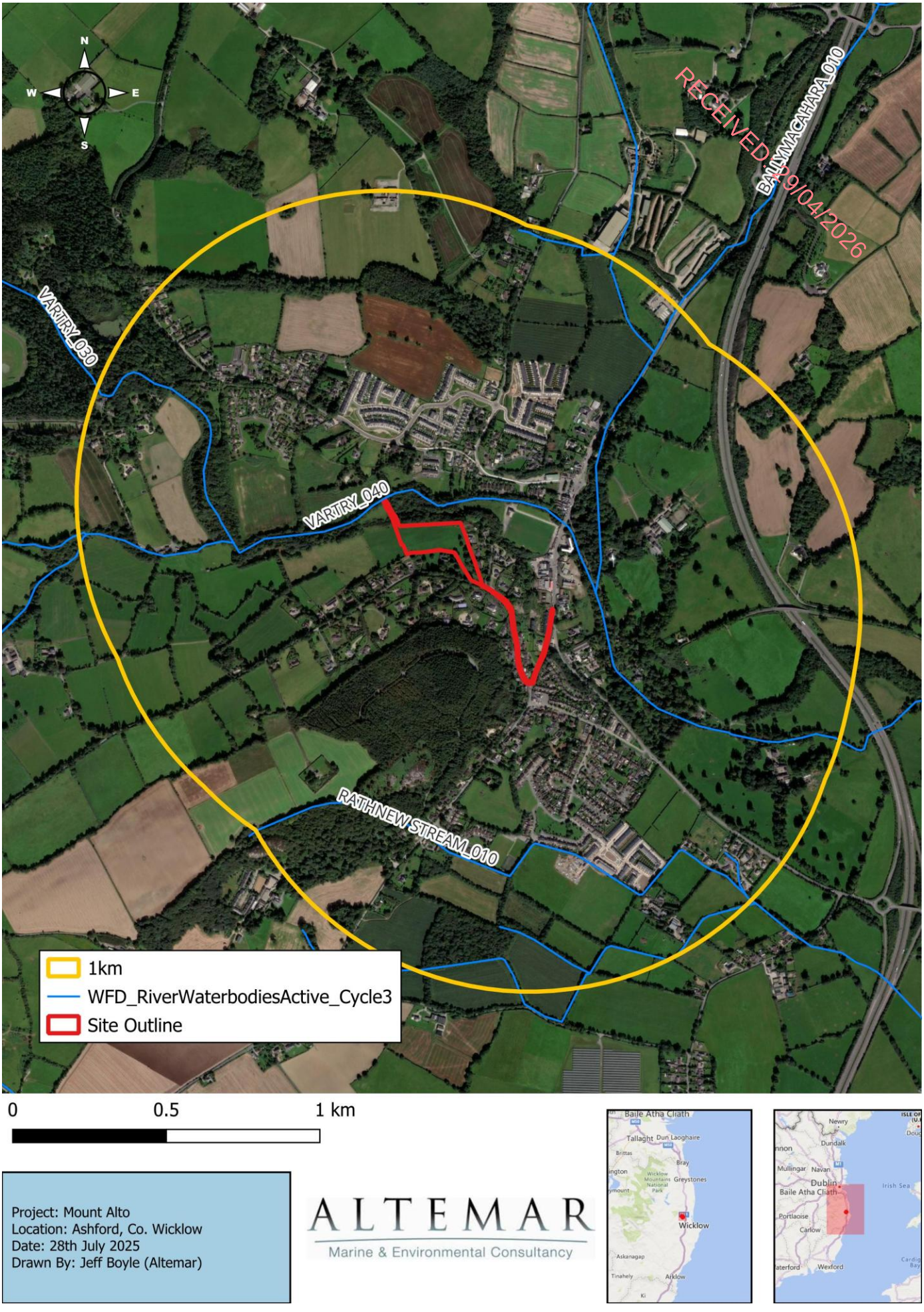



*Figure 8. Watercourses within 1km of the subject site*

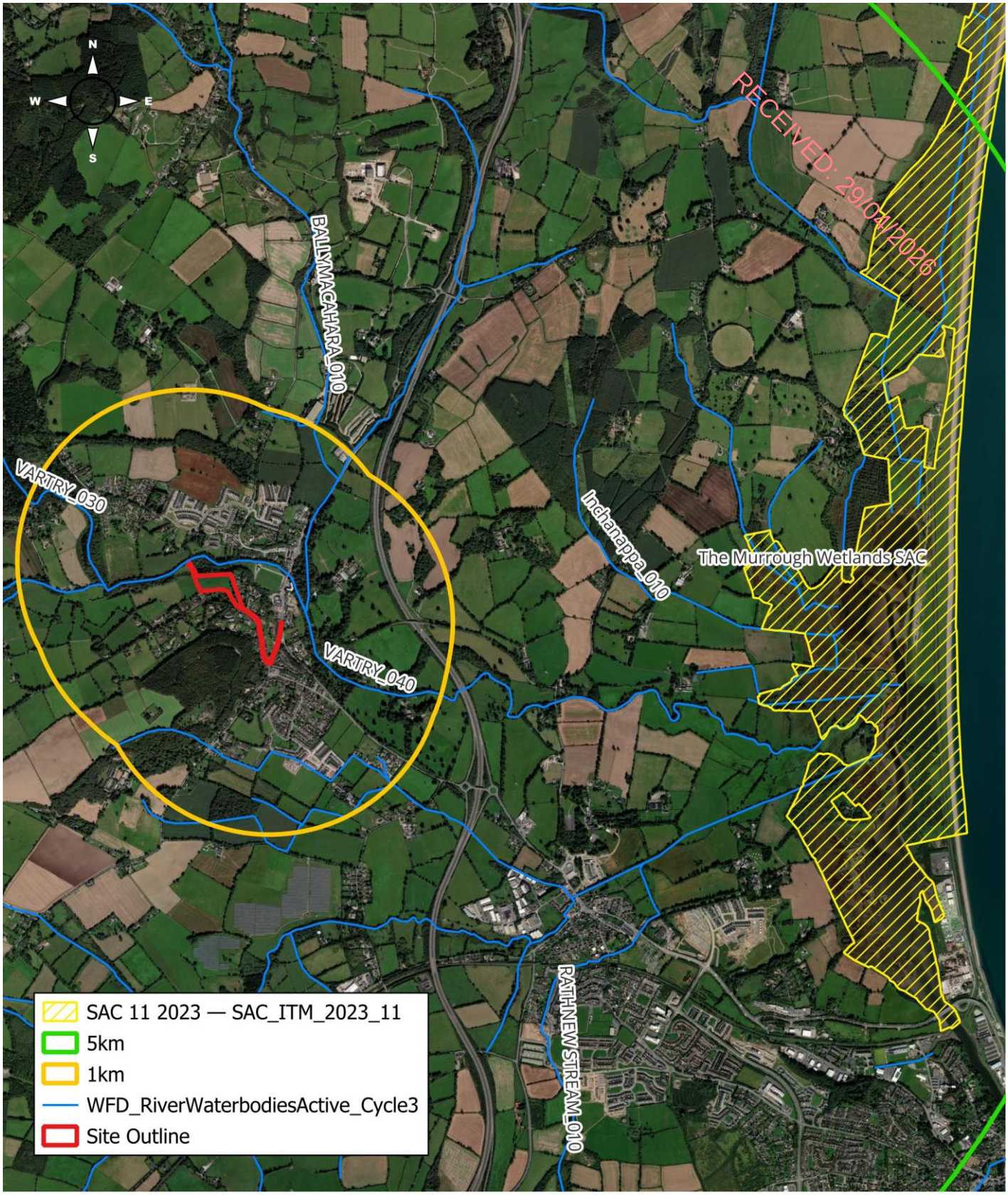



*Figure 9. Watercourses and SACs near the subject site*

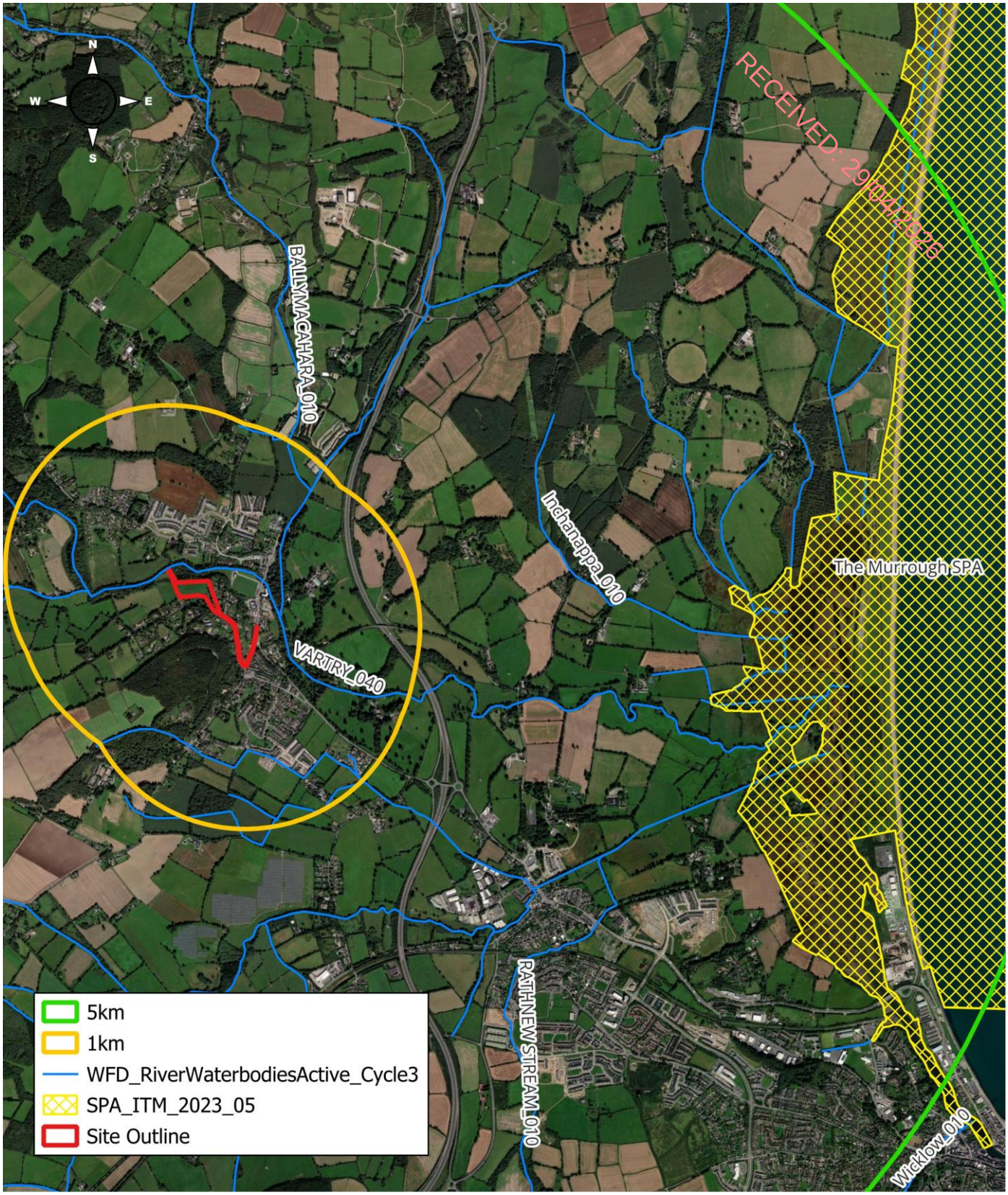



*Figure 10. Watercourses and SPAs near the subject site*

## In-Combination Effects

The following is a list of planning applications (last five years) in the vicinity of the site as identified on the Department of Housing, Local Government and Heritage's 'National Planning Application Database' portal:



*Table 3. In-Combination effects considered*

| Ref. No. | Address | Proposal |
|---|---|---|
| 21795 | Rockwood , No. 1 Ballymachahara, Ashford | alterations and extension to front and side of existing dwelling and all associated ancillary site works and services |
| 21484 | Ballymacahara, Ashford , Co Wicklow | extension to existing garage, consisting of 1) work from home office for personal use only 2) and all associated site works |
| 221201 | Semmering , Mount Alto, Ashford | conversion of existing garage with single storey extension to rear along with new window in North East façade in rear bedroom |
| 23630 | Ballygriffin , Arklow, Co. Wicklow | amendments to roof design of previously approved house (Planning Ref No. 21/257) and for the inclusion of 2 No. Velux type windows on side elevation over kitchen area |
| 20191 | Ashford GAA Grounds , Main Street, Ashford | importation of topsoil and subsoil for the purposes of creating a spectator viewing embankment to the north of the main playing pitch and the provision of an underage training area to the west of the grounds |
| 20597 | Site No 1 , Mount Alto, Ashford | 1) dwelling house as constructed and 2) permission for garage / garden store |
| 221144 | Land located to the East of Mount Alto Road, Ashford, Co. Wicklow | 4 no., 4 bedroom detached dwellings ranging in size from c.174sqm-c.189sqm each with private rear gardens and patios. The split level dwellings are arranged across 1-2 storeys with single storey frontage to Mount Alto Road (west) and two storey frontage to Mount Usher View (east). Proposed vehicular access from Mount Alto Road with associated internal road and footpath. The available public amenity area is c.0.135ha with a usable public open space of c.0.05ha. All associated site development works, services provision including a bio-retention system and connection to water services to the west on Mount Alto Road and to the east via Mount Usher View residential estate and further east onto the R772 road, 10 no. car parking spaces including 2 no. visitor spaces, external stores and bin stores, lighting, roof mounted solar panels, open space, landscaping and boundary treatment works |
| 197 | Edgewood House, Ballymacahara, Ashford | dormer house circa 268.6 sqm as constructed (previously granted 92/8254), also retention for storage shed (c14.55 sqm) extended site boundaries as constructed and provision for ancillary work |
| 20788 | Ballymacahara , Ashford , Co. Wicklow | dwelling as constructed. PERMISSION is also being sought for a first floor rear extension to rear of existing dwelling and all associated ancillary site works and services |
| 201186 | Main Street , Ashford , Co. Wicklow | converted horse box trailer on a multi unit retail site and the use of same as a coffee station for the sale of food, together with the placement of ancillary customer seating accommodation in the foreground of the converted trailer and associated works |
| 201 | Ashford Fair Service Station , Main Street , Ashford | provision of off licence (4.5 sqm) subsidiary to the main retail use (previously approved Ref No 19/76) |
| 1976 | Ashford Fair , Main Street , Ashford | retention and completion of demolition of original service station building (c 306 sqm) removal of redundant fuel storage tanks above and below ground, construction of replacement single storey service station building (c245 sqm) and replacement tanks below ground, upgrade works to forecourt area and rear car park to provide 23 no car parking spaces all site development, landscape and boundary treatment works |
| 22966 | Clondara , Ashford , Co. Wicklow | a) proposed new extension of circa 21.2sq.m. to rear of an existing 165sq.m. dwelling; b) modifications and alterations to existing layout and elevations to cater for proposed new internal layout and all associated site works |
| 221323 | Hanleys' , Ashford , Co. Wicklow | 1. new 110sqm extension to provide a glazed display area fronting onto the R764 public road, 2. relocation of public entrance to building, 3. new car parking facility, 4. provision of new vehicular entrance off R764 public road to |

| Ref. No. | Address | Proposal |
|---|---|---|
| | | create a new 'in-out' system for item 3 above, 5. all associated signage, 6. connection to all public services |
| 23744 | Oslo House , Mount Alto , Ashford | conversion and connection of existing garage to existing dwelling for habitable use and all associated site works and services |



Following an analysis of development proposals proximate to the subject site, it is considered that in-combination effects with other existing and proposed developments in proximity to the application area would be unlikely, neutral, not significant and localised. Most of the applications outlined above relate to small scale projects with temporary/short term construction phases (many of which have been completed), and relating to the alterations of existing structures, small private home improvements or minor public infrastructural improvements. Any larger scale projects that may be proposed during the duration of the proposed development will be subject to separate planning processes and are not foreseen to have significant in-combination effects with the proposed project, as the projects will be designed to ensure, and will not be consented unless, there are no likely significant effects on any European Sites. It is concluded that no significant effects on Natura 2000 sites are likely as a result of the proposed development in combination with other projects. **No projects in the vicinity of the proposed development would be seen to have a significant in-combination effect on Natura 2000 sites.**

## Appropriate Assessment Screening Conclusions

An initial screening of the proposed works, using the precautionary principle (without the use of any standard construction phase controls or mitigation measures) and the Source/Pathway/Receptor links between the proposed works and European sites with the potential to result in significant effects on the conservation objectives and features of interest of the European sites was carried out in Tables 2 and 3. Based on best scientific knowledge and objective information and assessment, the possibility of significant effects caused by the proposed project was excluded for the following European sites within 15km in addition to sites beyond 15km with a direct/indirect pathway:

**Special Areas of Conservation**

- Deputy's Pass Nature Reserve SAC
- Vale of Clara (Rathdrum Wood) SAC
- Wicklow Reef SAC
- Wicklow Mountains SAC
- Carriggower Bog SAC
- Magherabeg Dunes SAC
- Glen of the Downs SAC
- Buckroney-Brittas Dunes and Fen SAC

**Special Protection Areas**

- Wicklow Head SPA
- Wicklow Mountains SPA

Given the nature of the proposed works, the scale of the proposed development, and the direct hydrological pathway from the subject site to The Murrough Wetlands SAC and The Murrough SPA via surface water drainage to the River Vartry, it is considered that the potential ZOI of the proposed works extends beyond the site outline to include these European sites. Out of an abundance of caution, in the absence of mitigation measures, it is considered that there is the potential for petrochemicals, contamination, or silt laden material to enter the drainage ditch network and the River Vartry and result in effects on The Murrough Wetlands SAC and The Murrough SPA.

Acting on a strictly precautionary basis, an NIS is required in respect of the effects of the project on these Natura 2000 because it cannot be excluded on the basis of best objective scientific information following screening, in

the absence of control or mitigation measures that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the named European Site/s. An NIS or Stage 2 Appropriate Assessment is not required for the effects of the project on all other listed Natura sites and those beyond 15km because it can be excluded based on the best objective scientific information following screening that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the European Site/s.



**A Natura Impact Statement is required for the proposed development.**

## Stage 2: Natura Impact Statement

A Natura Impact Statement (NIS) is Stage 2 of the Appropriate Assessment process. In the case of the proposed development, acting on a strictly precautionary basis, an NIS is required in respect of the effects of the project on The Murrough Wetlands SAC and The Murrough SPA (due to the potential for downstream impacts during construction and operation via the surface water drainage network), because it cannot be excluded on the basis of best objective scientific information, in the absence of control or mitigation measures, following screening that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the named European Site/s.

A Stage 2 Appropriate Assessment or NIS is not required for the effects of the project on all other listed Natura sites within, and sites beyond, 15km because, it can be excluded, on the basis of the best objective scientific information following screening, that the plan or project, individually and/or in combination with other plans or projects, will have not a significant effect on the European Site/s.

The NIS evaluates the potential for direct, indirect effects, alone or in combination with other plans and projects having considered the use of mitigation measures. A further review of the Conservation Objectives and features of interest is necessary to determine if significant effects are likely to impact The Murrough Wetlands SAC and The Murrough SPA.

### The Murrough Wetlands SAC (Site code: 002249)

The Murrough Wetlands SAC is located 1.3 km from the planning boundary. Given that the Leitrim River/Broad Lough Estuary lies adjacent to the western boundary of the subject site, and that surface water drainage may be discharged to this waterbody (via works on site and haulage of soil on adjacent roads), it is considered that, out of an abundance of caution, there is an indirect hydrological connection from the proposed development to this SAC. In the absence of mitigation, there is the potential for silt and contaminated surface water runoff to enter the Leitrim River/Broad Lough Estuary and significantly affect the qualifying interests of this SAC.

### Site-specific data

As outlined in the Site Synopsis (NPWS, Version date 04.01.2014)[2]:

'*The Murrough is a coastal wetland complex which stretches for 15 km from Ballygannon to north of Wicklow town, and in parts, extends inland for up to 1 km. A shingle ridge stretches the length of the site and carries the mainline Dublin-Wexford railway*.'

Furthermore, the report states that:

'*On the seaward side of the shingle bank which runs along The Murrough Wetlands SAC site drift line vegetation includes species such as Sea Rocket (Cakile maritima), Sea Sandwort (Honkenya peploides), Sea-holly (Eryngium maritimum) and Yellow Horned-poppy (Glaucium flavum). The rare and legally protected Oysterplant (Mertensia maritima) (Flora (Protection) Order, 1999) has been recorded on the gravelly shore in the past but is now considered to be extinct from this locality.*

*Low sand hills occur at Kilcoole, with Marram (Ammophila arenaria) and Lyme-grass (Leymus arenarius). In other areas and further inland a rich grassy sward, which is most extensive at the south of the site, has developed. Typical species include Sweet Vernal-grass (Anthoxanthum odoratum), Crested Dog's-tail (Cynosurus*

[2] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY002249.pdf

*cristatus), Common Bird's-foot-trefoil (Lotus corniculatus), Burnet Rose (Rosa pimpinellifolia) and Pyramidal Orchid (Anacamptis pyramidalis). A community dominated by Silverweed (Potentilla anserina) and Strawberry Clover (Trifolium fragiferum) occurs in some of the wetter, grassy areas. In some places, particularly at the south of the site, a gorse (Ulex sp.) heath has developed on the stony ridge.*



*Saltmarsh is present within the site in two distinct areas. At the southern end of the site is found Broad Lough. This is a brackish, partly tidal lake, and has a well developed saltmarsh community which includes Saltmarsh Rush (Juncus gerardi), Common Saltmarsh-grass (Puccinellia maritima), Sea Aster (Aster tripolium), Sea Purslane (Halimione portulacoides) and Common Scurvygrass (Cochlearia officinalis).*

*Common Reed (Phragmites australis) is abundant along the western shore, along with some Sea Club-rush (Scirpus maritimus). Saltmarsh is also present in the northern end of the site in the vicinity of The Breaches. Though this has been greatly affected by drainage in the late 1980s and early 1990s, localised Sea Couch (Elymus pycnanthus) still occurs. The grassland which was created and improved as a result of the drainage is now influenced by seepage and flooding of saline waters.*

*Fen vegetation is well developed in the Murrough wetlands, with both alkaline and calcareous fen with Great Fen-sedge (Cladium mariscus) represented. The fens occur mostly between Five Mile Point and Six Mile Point, especially in the townland of Blackditch and also in the Leamore and Grange areas. The alkaline fen is dominated by Black Bog-rush (Schoenus nigricans), with Marsh Pennywort (Hydrocotyle vulgaris), Purple Moor-grass (Molinia caerulea), Devil's-bit Scabious (Succisa pratensis), Heather (Calluna vulgaris), Cross-leaved heath (Erica tetralix), and a wide variety of orchids also present. The rare, Narrow-leaved Marsh-orchid (Dactylorhiza traunsteineri) has also been recorded here. Great Fen-sedge occurs in mosaic with several vegetational elements but chiefly with alkaline fen. Its many forms can range from pure stands of Great Fen-sedge, through to occurring as a dominant with Greater Tussock-sedge (Carex paniculata) and Blunt-flowered Rush (Juncus subnodulosus). Cladium fen also occurs at Blackditch within stretches of swamp woodland or fen carr dominated by Rusty Willow (Salix cinerea subsp. oleifolia) and Downy Birch (Betula pubescens).*

*A fine wet woodland occurs at Blackditch. Downy Birch is the dominant species, with some Alder (Alnus glutinosa), willows (Salix spp.) and Ash (Fraxinus excelsior) also present. The ground flora of this wooded area is often quite dense. This wood also contains a rich invertebrate community with at least eight rare or notable species of fly (Order Diptera) occurring, including Syntormon setosus, a species unknown elsewhere in Britain or Ireland.*

*A wide range of freshwater and brackish marsh habitats occur within the site. These vary from reed-marsh dominated by reeds and rushes (Juncus spp.), to those of sedges (Carex spp.), with other areas supporting a mixture of sedges and Yellow Iris (Iris pseudacorus). A wide variety of grasses and herbs are also found. These include Meadowsweet (Filipendula ulmaria), Silverweed and Common Spike-rush (Eleocharis palustris). The scarce Red Data Book species Marsh Pea (Lathyrus palustris) occurs in one area. The marshes merge into wet grassland in many areas. Where grazing pressure is low, a herb-rich sward occurs with species such as Ragged-Robin (Lychnis flos-cuculi), Cuckooflower (Cardamine pratensis), Meadowsweet and Heath Spottedorchid (Dactylorhiza maculata) occurring. Sedges are abundant in the wetter areas. Where drains have been cut, there are many other species such as Greater Spearwort (Ranunculus lingua), Bogbean (Menyanthes trifoliata) and the scarce Reed Sweet-grass (Glyceria maxima).*

*The Murrough is an important site for wintering waterfowl and breeding birds. Species listed on Annex I of the E.U. Birds Directive include Little Egret, Whooper Swan, Greenland White-fronted Goose, Golden Plover, Kingfisher and Little Tern. Average peak winter counts from 1994/95 - 1997/98 showed the site to have an internationally important population of Brent Goose (1,318, higher than in the early 1990s), nationally important populations of Wigeon (1,518), Teal (772) and Lapwing (3,140), and regionally or locally important populations of Whooper Swan (80), Little Grebe (22), Shelduck (95), Gadwall (9), Mallard (391), Shoveler (22), Golden Plover (615), Curlew (605) and Redshank (181). Greylag Goose numbers were nationally important in the early 1990s but these numbers have dropped off. The average peak is now 213.*

*Little Tern breed on the shingle beach near The Breaches and this is the largest colony on the east coast (approx. 50 pairs in 1993, an average of 37 pairs over the ten year period 1988-1998 ). Redshank, Oystercatcher, Ringed Plover and Water Rail also breed. The reedbeds at Broad Lough provide habitat for Reed Warbler and the rare Bearded Tit has bred here.*

*Otter has been reported regularly from the Murrough. This is a Red Data Book Species, and is also listed on Annex II of the Habitats Directive.*

*Recent farming and drainage practices and afforestation have greatly reduced the area and quality of the wetlands habitats - the area between Kilcoole and Newcastle is particularly affected. In 1997 there was some levelling of the sand hills below Killoughter station. Pollution, reclamation and further drainage would adversely affect this site. A section of the wetlands at Blackditch, which includes alkaline and Cladium fen, has been acquired by BirdWatch Ireland and is being managed for nature conservation.*

*This site is of importance as it is the largest coastal wetland complex on the east coast of Ireland. Although much affected by drainage, it still contains a wide range of coastal and freshwater habitats, including six listed on Annex I of the E.U. Habitats Directive, some of which contain threatened plants. Areas on the site contain a rich invertebrate fauna, including several rarities. It is an important site for both wintering and breeding birds and supports a variety of species listed on Annex I of the E.U. Birds Directive.'*



The Qualifying Interests (QI) (Features of Interest) and the National conservation status of the QI for The Murrough Wetlands SAC are seen in Table 4.

*Table 4. Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for The Murrough Wetlands SAC*

| **Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites** | | |
|---|---|---|
| **European Site Name & Code** | **Qualifying Interests** | **Current Conservation Status & Trend** |
| **The Murrough Wetlands SAC**<br><br>**[002249]** | 1210 Annual vegetation of drift lines | **Inadequate** |
| | 1220 Perennial vegetation of stony banks | **Inadequate** |
| | 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) | **Inadequate** |
| | 1410 Mediterranean salt meadows (*Juncetalia maritimi*) | **Inadequate** |
| | 7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae** | **Inadequate** |
| | 7230 Alkaline fens | **Bad** |

The Conservation Objectives and overall status of species and habitats in The Murrough Wetlands SAC are as follows [34]:

'***3 Perennial vegetation of stony banks***

***3.1 Overall Objective***

*The overall objective for 'Perennial vegetation of stony banks' in The Murrough Wetlands SAC is to 'restore the favourable conservation condition'.*

*This objective is based on an assessment of the recorded condition of the habitat under a range of attributes and targets. The assessment is divided into three main headings: (a) Area, (b) Range and (c) Structure and Functions.*

***3.2 Area***

***3.2.1 Habitat area***

*Habitat extent is a basic attribute to be assessed when determining the condition of a particular habitat. The target for favourable condition is that there is no decrease from the established baseline. Bearing in mind that coastal systems are naturally dynamic and subject to change, even within a season, this target is assessed subject to natural processes, including erosion and succession.*

[3] NPWS (2021) The Murrough Wetlands SAC (site code: 002249) Conservation objectives supporting document -Coastal habitats

[4] NPWS (2021) Conservation Objectives: The Murrough Wetlands SAC 002249. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

*According to the most recent survey, the area of Perennial vegetation of stony banks in The Murrough Wetlands SAC is c. 13ha (Martin, 2019). No decline in area due to human activities has been recorded.*

*The target is that the habitat area should be stable or increasing, subject to natural processes, including erosion and succession.*



***3.3 Range***

***3.3.1 Habitat distribution***

*The recorded location of the surveyed vegetated shingle site in The Murrough Wetlands SAC, as mapped by Martin (2019), is presented in Appendix I. The habitat in the SAC runs approximately north to south and provides a barrier between the wetlands to the west and the sea to the east.*

*The target is that there should be no decline in the distribution of this habitat, unless it is the result of natural processes, including erosion and succession.*

***3.4 Structure and Functions***

*A fundamental aim of shingle conservation is to facilitate natural mobility. Shingle beaches are naturally dynamic systems, making them of geomorphological interest, as well as ecological interest. They are constantly changing and shingle features are rarely stable in the long-term.*

***3.4.1 Physical structure: functionality and sediment supply***

*The health and on-going development of the habitat relies on a continuing supply of shingle sediment. This may occur sporadically as a response to storm events rather than continuously. Interference with the natural coastal processes, through offshore (or onshore) extraction or coastal defence structures in particular, can interrupt the supply of sediment and lead to beach starvation.*

*The most common vegetation community of the shingle habitat at The Murrough Wetlands SAC is a relatively stable grassland community. Here, gravel (2mm diameter) particles form the majority (>60%) of the substrate from a depth of approximately 10cm. Closer to the shore, a pioneer community is found on coarser substrate. The presence of rock armour erected since designation has affected the mobility of the shingle substrate in the SAC (Martin, 2019).*

*The target for this SAC is to restore, the natural circulation of sediment and organic matter, without any physical obstructions.*

***3.4.2 Physical structure: disturbance***

*Damage to the habitat due to disturbance was assessed as a negative indicator by Martin et al. (2017). Disturbance can include damage from heavy trampling, vehicle damage and removal of substrate.*

*No damage due to disturbance was noted in this habitat during surveys by Martin et al. (2017) or Martin (2019).*

*The target is that no more than 20% of the habitat is affected by disturbance.*

***3.4.3 Vegetation structure: zonation***

*Ecological variation within this habitat type depends on stability, the amount of fine material accumulating between the pebbles, climatic conditions, width of the foreshore and past management of the site. The ridges and lows also influence the vegetation patterns, resulting in characteristic communities and zonations of bare and vegetated shingle. In the frontal, less stable areas of shingle, the vegetation tends to be dominated by short-lived salt-tolerant perennials (pioneer community). Where the shingle is more stable, it becomes more vegetated and may include grassland, heathland and scrub communities, depending on the exact nature of the site. The presence of lichens indicates long-term stability of the shingle structure. Further information on the communities of perennial vegetation of stony banks is found in Martin et al. (2017).*

*Martin (2019) recorded three communities of perennial vegetation of stony banks at The Murrough Wetlands SAC: a pioneer community, a scrub community and a grassland community. The most abundant community was the grassland community.*

*Vegetated shingle is part of a naturally dynamic coastal system. In order to ensure the ecological functioning of all of the vegetated shingle communities present, it is vital to maintain the zonations and transitions to other habitats, including lagoon, saltmarsh and sand dune habitats.*

*The target is to maintain the range of coastal habitats, including transitional zones, subject to natural processes, including erosion and succession.*

### *3.4.4 Vegetation composition: communities and typical species*



*The degree of exposure, as well as the coarseness and stability of the substrate, determines species diversity. Typical species lists for the three main vegetated shingle communities (pioneer, grassland and scrub) are presented in Martin et al. (2017).*

*As mentioned earlier, the shingle habitat in The Murrough Wetlands SAC includes three communities of perennial vegetation of stony banks that were recorded by Martin (2019) – a pioneer, a shrub and a grassland community. The grassland community is most extensive and the pioneer community is found close to the shore (Martin, 2019), while the grassland and scrub communities are located on the more stable and sheltered parts of the shingle bank to the west. Between 11 and 15 native species were found in seven of the eight monitoring stops recorded by Martin (2019), and although only five species were found at the remaining stop, as this was located in the pioneer community, a sparse community is considered acceptable. Both yellow-horned poppy (Glaucium flavum) and sea kale (Crambe maritima) were present.*

*The target for this attribute is to ensure that the occurrence of typical species within the range of vegetated shingle communities is maintained.*

### *3.4.5 Vegetation composition: native negative indicator species*

*Native negative indicator species can include species indicative of changes in nutrient status e.g. nettle (Urtica dioica), and species not considered to be typical of the habitat, e.g. bracken (Pteridium aquilinum). The list of negative indicator species commonly found in the habitat is presented in Appendix I of Martin et al. (2017).*

*Negative indicators spear thistle (Cirsium vulgare) and ragwort (Senecio jacobaea) were present in low numbers, but the cover of perennial rye-grass (Lolium perenne) was excessive at a single monitoring stop (50% cover) recorded by Martin (2019).*

*The target for negative indicator species is that no species is present in more than 60% of stops and the combined cover in any individual stop is 25% or less.*

### *3.4.6 Vegetation composition: non-native species*

*Non-native species can be invasive and have deleterious effects on native vegetation. Low targets are set as non-native species can spread rapidly and are most easily dealt with when still at lower abundances.*

*Martin (2019) did not record any non-native species within the vegetated shingle habitat in The Murrough Wetlands SAC. The target for non-native species is that no species is present in more than 20% of stops, the combined cover in any individual stop is 1% or less, and the cover across the whole site 1% or less. At a site level, if a non-native species has been under-recorded, or not recorded, via the stops the percentage cover for the species across the site should be recorded and assessed.*

## *4 Saltmarsh habitats*

### *4.1 Overall objectives*

*The overall objective for 'Atlantic salt meadows' in The Murrough Wetlands SAC is to 'restore the favourable conservation condition'.*

*The overall objective for 'Mediterranean salt meadows' in The Murrough Wetlands SAC is to 'restore the favourable conservation condition'.*

*This objectives are based on an assessment of the recorded condition of the habitat under a range of attributes and targets. The assessment is divided into three main headings: (a) Area (b) Range and (c) Structure and Functions.*

### *4.2 Area*

### *4.2.1 Habitat area*

*Habitat extent is a basic attribute to be assessed when determining the condition of a particular habitat.*

*The total area of ASM within The Murrough Wetlands SAC is estimated to be 16.64ha. Most of this area (16.57ha) was recorded during the SMP 2017-2018 (Brophy et al., 2019) at the Broad Lough subsite (SMP 0135).*

*The remainder was recorded during the SMP 2006-2008 (McCorry and Ryle, 2009), within the northern part of the SAC in the sub-site Kilcoole (SMP0036), of which 0.07ha of the habitat lies within the SAC boundary.*

*Brophy et al. (2019) noted loss of 0.035ha (equal to 0.021% of the original area) of ASM as the result of construction of a track associated with drainage works. Mediterranean salt meadows are also primarily located in the southern part of the SAC, and an area of 5.17ha was recorded during the SMP 2017-2018 (Brophy et al., 2019). The general target is that the area of should be stable or increasing. Bearing in mind that coastal systems are naturally dynamic and subject to change, this target is assessed subject to natural processes, including erosion and succession.*



### *4.3 Range*

#### *4.3.1 Habitat distribution*

*The Atlantic salt meadows and Mediterranean salt meadows are primarily found in the southern part of The Murrough Wetlands SAC in the Broad Lough sub-site (SMP0135) surveyed by the SMP 2017- 2018 (Brophy et al., 2019), although much smaller areas of ASM also occur in the northern part of the SAC, as recorded by the SMP 2006-2008 (McCorry and Ryle, 2009). There has been no recorded reduction in the distribution of the habitats since designation.*

*The general target is that there should be no decline in the distribution of the saltmarsh habitats, unless it is the result of natural processes, including erosion, accretion and succession.*

### *4.4 Structure and Functions*

*The location, character and dynamic behaviour of saltmarshes are governed by sediment supply, tidal regime, wind-wave climate and sea level change. The slope of the saltmarsh allows the development of several ecological gradients such as tidal submergence and salinity, and this influences the development of distinctive zones of halophytic and salt-tolerant plant communities. Maintaining the favourable conservation condition of the saltmarsh habitat in The Murrough Wetlands SAC in terms of its structure and functions depends on a range of attributes for which targets have been set as outlined below.*

#### *4.4.1 Physical structure: hydrology*

*The movement of fresh groundwater and tidal sea water is important for the functioning of saltmarsh habitats and underpins species distributions. Alterations of the drainage, e.g. by altering channels, compromises those natural hydrological processes.*

*Drainage works were noted in the ASM habitat in The Murrough Wetlands SAC in the sub-site Broad Lough (site code SMP0135) by Brophy et al. (2019).*

*No alterations to the hydrology were noted as affecting the MSM habitat by Brophy et al. (2019).*

*The target is that there should be no human disturbance to hydrology (including impacts on creeks and pans).*

#### *4.4.2 Vegetation structure: plant height*

*This attribute is only relevant to Atlantic salt meadows, and not to Mediterranean salt meadows. Under optimal conditions, the vegetation height in saltmarsh is variable, depending on the plant community and external factors such as grazing. This small-scale variability is beneficial for biodiversity. Intensive grazing or abandonment of light grazing can result in a more uniform sward height. Standard deviation provides a measure of variability in sward height between monitoring stops.*

*The standard deviation for sward height in Atlantic salt meadows at the sub-site Broad Lough (site code SMP0135), was greater than 5 according to Brophy et al. (2019).*

*The target for this attribute is that the standard deviation of median of maximum leaf height from four quadrants of a representative number of 2m x 2m monitoring plots is greater than 5.*

#### *4.4.3 Vegetation structure: disturbed ground*

*Disturbed ground is the result of activities that break the vegetation cover and result in bare marsh substrate. While a small component of disturbed ground can be beneficial for pioneer species and overall habitat diversity, a large component of disturbed ground can compromise the integrity of the saltmarsh.*

*Disturbed ground occupied less than 5% of the total area of both Atlantic salt meadows and Mediterranean salt meadows at Broad Lough (site code SMP0135) (Brophy et al., 2019).*

*The target for this attribute is that disturbed ground should be below 5% in a representative number of 2m x 2m monitoring stops.*



### *4.4.4 Vegetation structure: zonation*

*Zonation in Atlantic salt meadows is assessed as variability of plant communities associated with different characteristics in the saltmarsh. The plant communities associated with Irish saltmarsh habitats, e.g. SM2, SM3, etc., are described in the Irish Vegetation Classification (details available here: https://biodiversityireland.ie/projects/ivc-classification-explorer/) and listed in Brophy et al. (2019). While discernible zonation of vegetation is considered a sign of good saltmarsh functioning, it can be limited naturally under certain circumstances (Devaney and Perrin, 2015). The assessment criteria for zonation is therefore set depending on the geographical type of saltmarsh present. The attribute does not apply to Mediterranean salt meadows.*

*Zonation was considered adequate in the Atlantic Salt meadows at Broad Lough (site code SMP0135) (Brophy et al., 2019).*

*The target for this attribute is for Atlantic salt meadows to have an adequate number of zones that cover 1% or more of the 1330 area, depending on the geographical type of saltmarsh present.*

### *4.4.5 Vegetation structure: transitions*

*Intact transitions from saltmarsh habitats to surrounding habitats (e.g. sand dunes, freshwater marsh) are an important aspect of saltmarsh functioning and support biodiversity.*

*No losses of habitat transitions were recorded in Atlantic salt meadows or Mediterranean salt meadows at Broad Lough (site code SMP0135) (Brophy et al., 2019).*

*The target for this attribute is that no loss of natural transitions to semi-natural terrestrial habitats on landward margin should have occurred.*

### *4.4.6 Vegetation composition: typical species*

*The plant communities of saltmarsh habitat vary according to the habitat zonation, but certain species are commonly found in saltmarsh habitats and are indicative of saltmarsh functioning.'*

'*More than twelve typical species were recorded in Atlantic salt meadows, and more than six in Mediterranean salt meadows in the Broad Lough sub-site by Brophy et al. (2019). Two or more typical species were recorded in each of the Mediterranean salt meadow monitoring plots in the sub-site (Brophy et al., 2019).*

*The target for this attribute in Atlantic salt meadows is that a minimum of twelve typical species should be recorded across all 2m x 2m monitoring plots. For Mediterranean salt meadows, the target is that a minimum of six typical species be recorded across all plots; and for there to be at least two typical species present in more than 25% of plots (excluding Juncus maritimus).*

### *4.4.7 Vegetation composition: negative species*

*Common cordgrass (Spartina anglica) is a non-native species capable of colonising saltmarsh and mudflats rapidly, and can pose a threat to native plant communities. It is therefore considered a negative species in saltmarsh habitats, and spread of the species is monitored. Monitoring occurs both at the habitat level (i.e. new occurrence of common cordgrass (S. anglica) at a site where it was previously absent from the habitat) and also at the stop level (the percentage cover within 5m of a monitoring plot).*

*Common cordgrass (S. anglica) was not recorded in either ASM or MSM according to Brophy et al. (2019), nor in ASM habitat in the Kilcoole sub-site (McCorry and Ryle, 2009).*

*The target is for Spartina spp. to be absent from the saltmarsh habitat, or, where previously recorded, for there to be no increase in the distribution or cover of Spartina spp. since the SMP 2006-2008 (McCorry, 2007; McCorry and Ryle, 2009)*

### *4.4.8 Other negative indicators*

*Other negative indicators is a broad category for a range of damaging activities affecting the functioning of saltmarsh habitat. These may include, but are not limited to, infilling, land claim, turfcutting and pollution.*

*Both the Atlantic salt meadows and the Mediterranean salt meadows at Broad Lough (sub-site SMP0135) were affected by disturbance through the use of a digger and deposition of dredged materials in 2018 (Brophy et al., 2019).*

*The target is that no negative indicators,such assigns of infilling, reclamation, turf-cutting or pollution, should be recorded in the saltmarsh habitat.*



***4.4.9 Indicators of local distinctiveness.***

*At some sites, species of conservation interest that are not noted elsewhere in the monitoring assessment occur, and it is desirable to maintain these populations. Such species often have restricted distributions or are widespread but scarce nationally. In many cases they are strongly associated with coastal habitats and saltmarsh in particular. Examples include saltmarsh flat-sedge (Blysmus rufus), hard-grass (Parapholis strigose), sea couch (Elytrigia atherica), meadow barley (Hordeum secalinum), ditch-grasses (Ruppia spp.) and sea wormwood (Seriphidium maritimum).*

*Sea couch (Elytrigia atherica) was found in the Atlantic salt meadow habitat at Broad Lough (sub-site SMP0135) in 2018 (Brophy et al., 2019). There were no indicators of local distinctiveness recorded from Mediterranean salt meadows at the sub-site (Brophy et al., 2019). The target for this attribute is that there should be no decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat.*

***5 Sand dune habitats***

*The overall objective for 'Annual vegetation of drift lines' in The Murrough Wetlands SAC is to 'restore the favourable conservation condition'.*

*This objective is based on an assessment of the recorded condition of the habitat under a range of attributes and targets. The assessment is divided into three main headings: (a) Area (b) Range and (c) Structure and Functions.*

***5.2 Area***

***5.2.1 Habitat area***

*Habitat extent is a basic attribute to be assessed when determining the condition of a particular habitat. Annual vegetation of drift lines covered a total area of c. 5.2ha when surveyed in 2019 (Martin, 2019), an increase since the previously recorded area of 0.11ha made during the Coastal Monitoring Project (Ryle et al., 2009). Much of the difference in area can be ascribed to differences in mapping and interpretation methodologies. No loss of habitat due to human activities was recorded in 2019. The most recent habitat maps for the sand dune and shingle habitats are shown in Appendix I, and full details of that survey are provided in Martin (2019), a report written for Wicklow County Council. The general target for this attribute is that the area of the habitat should be stable, or increasing. Bearing in mind that coastal systems are naturally dynamic and subject to change, this target is always assessed subject to natural processes, including erosion and succession.*

***5.3 Range***

***5.3.1 Habitat distribution***

*Annual vegetation of drift lines occurs on the upper part of beaches, seaward of dune and shingle habitats. The distribution of Annual vegetation of drift lines at The Murrough Wetlands SAC is presented in Appendix I. No reduction of the distribution of the habitat due to human activities has been recorded in the SAC.*

*The target is that there should be no decline in the distribution of the sand dune habitat, unless it is the result of natural processes, including erosion, accretion and succession.*

***5.4 Structure and Functions***

*The location, character and dynamic behaviour of sand dunes are governed by a combination of geographic, climatic, edaphic and anthropogenic factors. Sand dunes are highly complex, dynamic systems, where the habitats occur in a complex and constantly evolving and changing mosaic. They function as systems in terms of geomorphology and hydrology and maintaining the favourable conservation condition of the habitats present depends on allowing these processes to continue unhindered. Restoring the favourable conservation condition*

*of the sand dune habitat in The Murrough Wetlands SAC in terms of structure and functions depends on a range of attributes for which targets have been set as outlined below.*

***5.4.1 Physical structure: functionality and sediment supply***



*Coastlines naturally undergo a constant cycle of erosion and accretion. There are two main causes of erosion: (a) those resulting from natural causes and (b) those resulting from human interference. Natural causes include the continual tendency towards a state of equilibrium between coasts and environmental forces, climatic change (particularly an increase in the frequency of storms or a shift in storm tracks), relative sea level rise and natural changes in the sediment supply. Human interference is usually associated with changes in the sediment budget, either directly, through the removal of beach or inshore sediment, or indirectly, by impeding or altering sediment movement. It is important to recognise that the process of coastal erosion is part of a natural tendency towards equilibrium. Natural shorelines attempt to absorb the energy entering the coastal zone by redistributing sediment.*

*Dunes are naturally dynamic systems that require continuous supply and circulation of sand. Sediment supply is especially important in the embryonic dunes and mobile dunes, as well as the strandline communities where accumulation of organic matter in tidal litter is essential for trapping sand and initiating dune formation. The construction of physical barriers such as sea defences can interrupt longshore drift, leading to beach starvation and increased rates of erosion. Sediment circulation and erosion also has a role to play in the more stabilised dune habitats. Cycles of erosion and stabilisation are part of a naturally functioning dune system, where the creation of new bare areas allows pioneer species and vegetation communities to develop, thus increasing biodiversity. The construction of physical barriers can interfere with the sediment circulation by cutting the dunes off from the beach resulting in fossilisation or over-stabilisation of dunes.*

*The installation of rock armour since designation has reduced the mobility of the substrate of the sand dune and shingle habitats at The Murrough Wetlands SAC, including Annual vegetation of drift lines (Martin, 2019).*

*The target for this attribute is to maintain the natural circulation of sediment and organic matter throughout the entire dune system, without any physical obstructions.*

***5.4.2 Vegetation structure: zonation***

*The range of vegetation zones on a dune system should be maintained. Gaynor (2008) highlights the highly transitional nature of much of the vegetation; therefore, it is important that the transitional communities are also conserved, including those to the saltmarsh communities.*

*The natural transitions between Annual vegetation of drift lines, the beach and the more stable dune and shingle habitats to the west have been maintained in The Murrough Wetlands SAC. The target is to maintain the range of coastal habitats, including transitional zones, subject to natural processes, including erosion and succession.*

***5.4.3 Vegetation composition: typical species and sub-communities***

*Species diversity and plant distribution in dunes is strongly controlled by a range of factors, including mobility of the substrate, grazing intensities, moisture gradients, nutrient gradients and human disturbance.*

*Annual vegetation of drift lines in The Murrough Wetlands SAC supported typical species including oraches (Atriplex spp.), sea rocket (Cakile maritima) and sea sandwort (Honckenya peploides) as recorded by Martin (2019). The target for this attribute is to maintain a typical flora for the sand dune habitat.*

***5.4.4 Vegetation composition: native negative indicator species***

*Native negative indicators include species indicative of changes in nutrient status, e.g. nettle (Urtica dioica), and species not considered characteristic of the habitat, e.g. bracken (Pteridium aquilinum). Native negative indicator species for Annual vegetation of drift lines is found in Appendix I of Delaney et al. (2013).*

*No negative indicator species were recorded in Annual vegetation of drift lines at The Murrough Wetlands SAC in 2019 (Martin, 2019).*

*The target for native negative indicators is that no species is present in more than 60% of stops and the combined cover of negative indicators throughout any one habitat is 5% or less and the highest cover score within any one stop in 25% or less.*

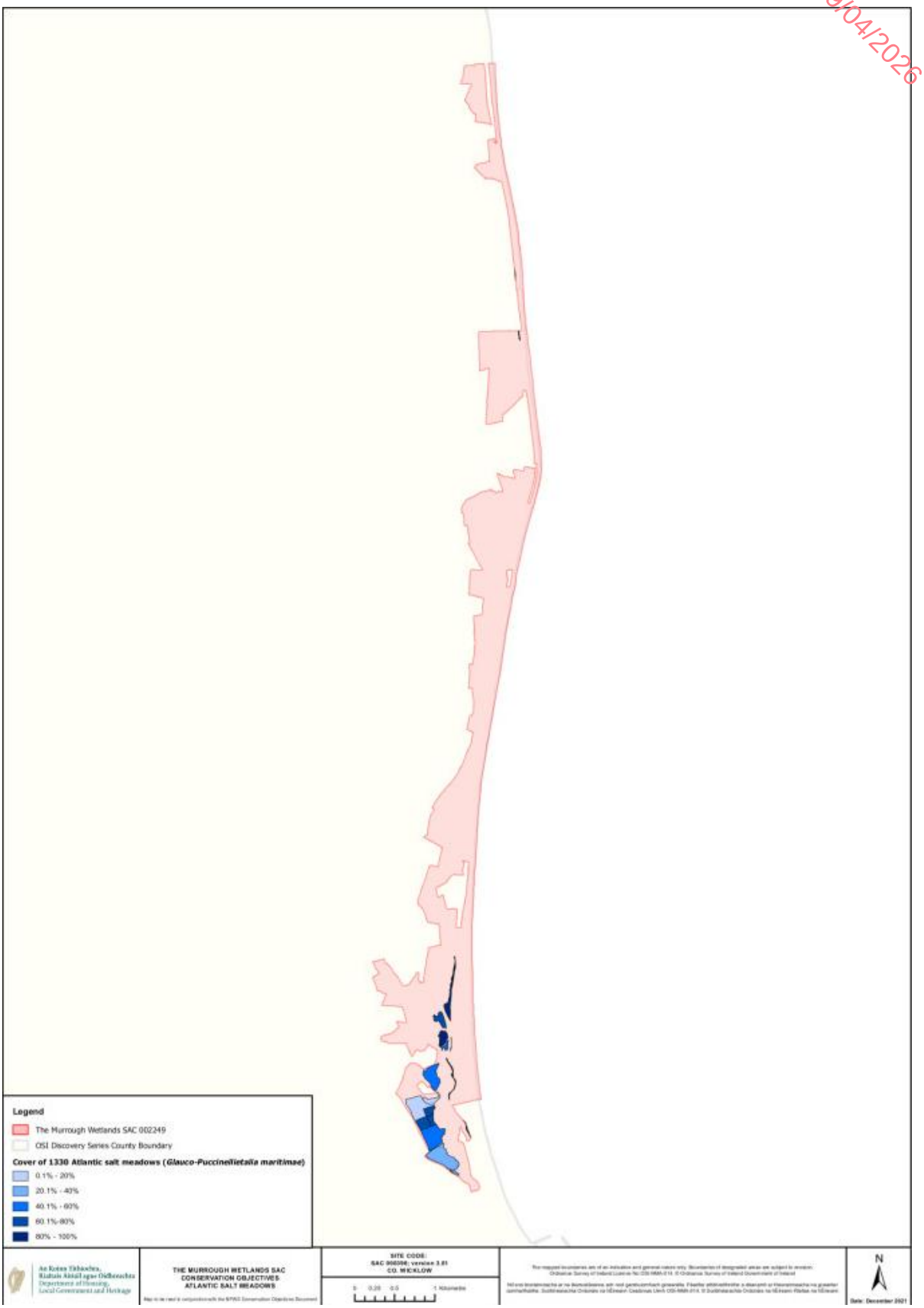
***5.4.5 Vegetation composition: non-native species***

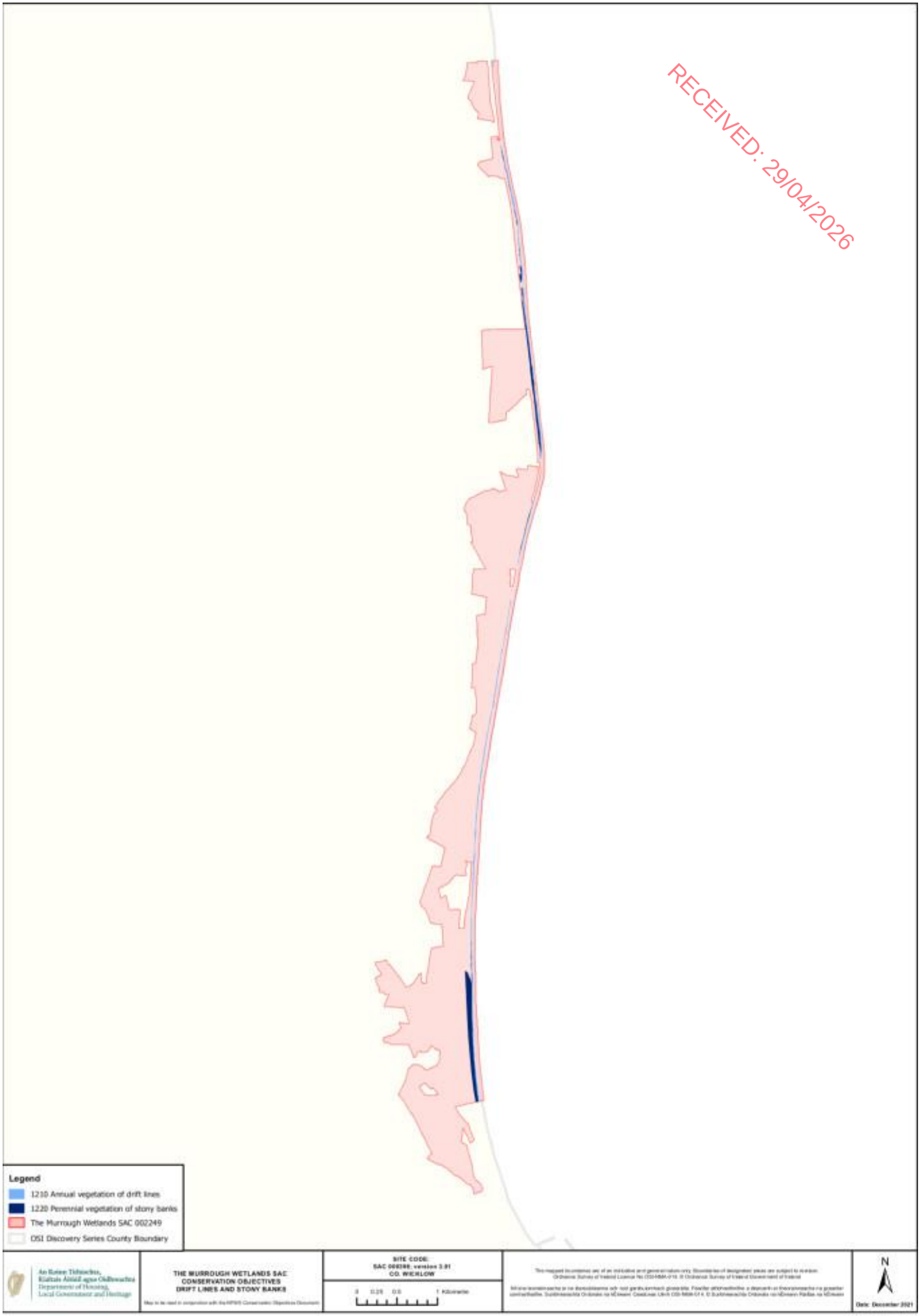
*Non-native species can have a negative impact on sand dune habitats. Sea buckthorn (Hippophae rhamnoides) should be absent or effectively controlled.*

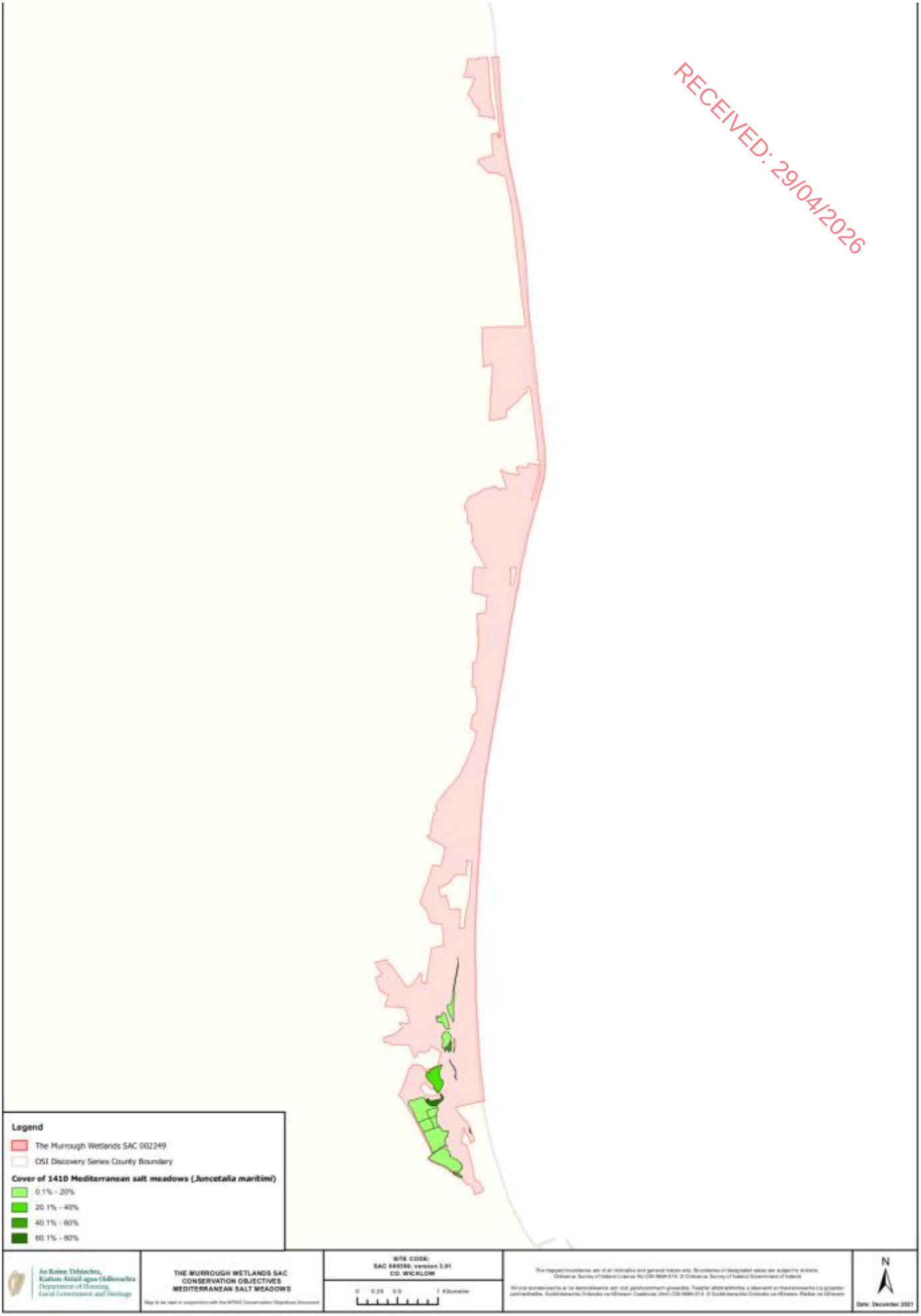
*No non-native species were recorded in the habitat in the SAC in 2019 (Martin, 2019).*

*The target is that non-native species, such as sea buckthorn (Hippophae rhamnoides) or red valerian (Centranthus ruber), should not be present in more than 20% of stops'*









The attribute, measure and target of the site-specific Conservation Objectives for The Murrough Wetlands SAC are seen in Table 5.

***Table 5.*** *Attribute, Measure and Target of the site conservation objectives for The Murrough Wetlands SAC*



| Attribute | Measure | Target |
|---|---|---|
| **Annual Vegetation of drift lines [1210] (To restore the favourable conservation condition** | | |
| Habitat area | Hectares | Area stable or increasing, subject to natural processes, including erosion and succession |
| Habitat distribution | Occurrence | No decline, subject to natural processes, including erosion and succession |
| Physical structure: functionality and sediment supply | Presence/absence of physical barriers | Restore the natural circulation of sediment and organic matter, without any physical obstructions |
| Vegetation structure: zonation | Occurrence | Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession |
| Vegetation composition: typical species and subcommunities | Percentage cover at a representative number of monitoring stops | Maintain the presence of species-poor communities with typical species: sea rocket (*Cakile maritima*), sea sandwort (*Honckenya peploides*), prickly saltwort (*Salsola kali*) and orache (*Atriplex spp*.) |
| Vegetation composition: native negative indicator species | Percentage | Native negative indicator species cover in any individual monitoring stop should not be more than 25%; no negative indicator species should be present in more than 60% of monitoring stops; cover of negative indicator species across the whole site should not be more than 5% |
| Vegetation composition: non-native specie | Percentage | Non-native species should not be present in more than 20% of monitoring stops |
| **Perennial vegetation of stony banks [1220] (To restore the favourable conservation condition)** | | |
| Habitat area | Hectares | Area stable or increasing, subject to natural processes, including erosion and succession |
| Habitat distribution | Occurrence | No decline in habitat distribution, subject to natural processes, including erosion and succession |
| Physical structure: functionality and sediment supply | Presence/absence of physical barriers | Restore the natural circulation of sediment and organic matter, without any physical obstructions |
| Physical structure: disturbance | Percentage | No more than 20% of the habitat affected by disturbance |
| Vegetation structure: zonation | Occurrence | Maintain the range of coastal habitats, including transitional zones, subject to natural processes, including erosion and succession |
| Vegetation composition: communities and typical species | Percentage | Maintain the typical species within the range of vegetated shingle communities |
| Vegetation composition: native negative indicator species | Percentage | Native negative indicator species cover in any individual monitoring stop should not be more than 25%; no negative indicator species should be present in more than 60% of monitoring stops |
| Vegetation composition: non-native species | Percentage | Non-native species cover in any individual monitoring stop should not be more than 1%; non-native species should not be present in more than 20% of monitoring stops; cover of non-native species across the whole site should not be more than 1% |

| Attribute | Measure | Target |
|---|---|---|
| **Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] (To restore the favourable conservation condition)** | | |
| Habitat area | Hectares | Area stable or increasing, subject to natural processes, including erosion and succession |
| Habitat distribution | Occurrence | No decline, subject to natural processes |
| Physical structure: hydrology | Occurrence of human disturbance to hydrology (including impacts on creeks and pans) | No human disturbance |
| Vegetation structure: plant height | Standard deviation of median of maximum leaf height from four quadrants of a representative number of 2m x 2m monitoring plots | Standard deviation of median plant height more than 5 |
| Vegetation structure: disturbed ground | Percentage cover at a representative number of 2m x 2m monitoring stops | Cover of disturbed ground less than 5% |
| Vegetation structure: zonation | Number of zones covering 1% or more of the habitat | Adequate number of zones present, depending on geographical type of saltmarsh |
| Vegetation structure: transitions | Occurrence of natural transitions to seminatural terrestrial habitats on landward margin | No loss of natural transitions |
| Vegetation composition: typical species | Frequency of typical species within a representative number of 2m x 2m monitoring plots | Minimum of twelve typical species recorded across all plots |
| Vegetation composition: negative species | Occurrence in habitat; percentage cover of Spartina spp. within 5m radius of the centre of a representative number of monitoring stops | Spartina spp. have not been recorded in the habitat in this SAC and establishment should be prevented |
| Other negative indicators | Occurrence at a representative number of 2m x 2m monitoring plots | No signs of infilling, reclamation, turf-cutting or pollution or other negative indicators |
| Indicators of local distinctiveness | Occurrence and population size | No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat |
| **Mediterranean salt meadows (*Juncetalia maritimi*) [1410] (To restore the favourable conservation condition)** | | |

| Attribute | Measure | Target |
|---|---|---|
| Habitat area | Hectares | Area increasing, subject to natural processes, including erosion and succession |
| Habitat distribution | Occurrence | No decline, subject to natural processes |
| Physical structure: hydrology | Occurrence of human disturbance to hydrology (including impacts on creeks and pans) | No human disturbance |
| Vegetation structure: disturbed ground | Percentage cover at a representative number of 2m x 2m monitoring stops | Cover of disturbed ground less than 5% |
| Vegetation structure: transitions | Distribution of natural transitions to seminatural terrestrial habitats on landward margin | No loss of natural transitions |
| Vegetation composition: typical species | Frequency of typical species within a representative number of 2m x 2m monitoring plots | Minimum of six typical species recorded across all plots; minimum two typical species in more than 25% of plots (excluding Juncus maritimus |
| Vegetation composition: negative species | Occurrence in habitat; percentage cover of Spartina spp. within 5m radius of the centre of a representative number of monitoring stops | Spartina spp. have not been recorded in the habitat in this SAC and establishment should be prevented |
| Other negative indicators | Occurrence at a representative number of 2m x 2m monitoring plots | No signs of infilling, reclamation, turf-cuttingor pollution or other negative indicators |
| Indicators of local distinctiveness | Occurrence and population size | No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat |
| **Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210] (To restore the favourable conservation condition)** | | |
| Habitat area | Hectares | Area stable or increasing, subject to natural processes |
| Habitat distribution | Occurrence | No decline, subject to natural processes. |
| Ecosystem function: soil nutrients | Soil pH and appropriate nutrient levels at a representative number of monitoring stops | Maintain soil pH and nutrient status within natural ranges |
| Ecosystem function: peat formation | Percentage cover of peat-forming vegetation and water table levels | Maintain active peat formation, where appropriate |
| Ecosystem function: hydrology - groundwater levels | Water levels (centimetres); duration of levels; hydraulic gradients; water supply | Maintain, or where necessary restore, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat |

| Attribute | Measure | Target |
|---|---|---|
| Ecosystem function: hydrology - surface water flow | Drain density and form | Maintain, or where necessary restore, as close as possible to natural or semi-natural, drainage conditions |
| Ecosystem function: water quality | Various | Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat |
| Vegetation composition: cover of *Cladium mariscus* | Percentage cover at a representative number monitoring stops | Cover of *Cladium mariscus* at least 25% |
| Vegetation composition: typical vascular plants | Percentage cover at a representative number monitoring stops | Maintain adequate cover of typical vascular plant species |
| Vegetation composition: native negative indicator species | Percentage cover at a representative number of monitoring stops | Cover of native negative indicator species at insignificant levels |
| Vegetation composition: non-native species | Percentage cover at a representative number of monitoring stops | Cover of non-native species less than 1% |
| Vegetation composition: native trees and shrubs | Percentage cover in local vicinity of a representative number of monitoring stops | Cover of scattered native trees and shrubs less than 10% |
| Vegetation composition: algal cove | Percentage cover at, and in local vicinity of, a representative number of monitoring stops | Cover of algae less than 2% |
| Vegetation structure: vegetation height | Percentage cover at a representative number of monitoring stops | At least 10% of live shoots more than 1m high |
| Physical structure: disturbed bare ground | Percentage cover at, and in local vicinity of, a representative number of monitoring stops | Cover of disturbed bare ground not more than 10% |
| Physical structure: tufa formations | Percentage cover in local vicinity of a representative number of monitoring stops | Disturbed proportion of vegetation cover where tufa is present is less than 1% |
| Indicators of local distinctiveness | Occurrence and population size | No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes |
| Transitional areas between fen and adjacent habitats | Hectares; distribution | Maintain/restore adequate transitional areas to support/protect the *Cladium fen* habitat and the services it provides |

| Attribute | Measure | Target |
|---|---|---|
| **Alkaline fens [7230] (To restore the favourable conservation condition)** | | |
| Habitat area | Hectares | Area stable or increasing, subject to natural processes |
| Habitat distribution | Occurrence | No decline, subject to natural processes |
| Ecosystem function: soil nutrients | Soil pH and appropriate nutrient levels at a representative number of monitoring stops | Maintain soil pH and nutrient status within natural ranges |
| Ecosystem function: peat formation | Percentage cover of peat-forming vegetation and water table levels | Maintain active peat formation, where appropriate |
| Ecosystem function: hydrology - groundwater levels | Water levels (centimetres); duration of levels; hydraulic gradients; water supply | Maintain, or where necessary restore, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat |
| Ecosystem function: hydrology - surface water flow | Drain density and form | Maintain, or where necessary restore, as close as possible to natural or semi-natural, drainage conditions |
| Ecosystem function: water quality | Various | Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat |
| Vegetation composition: community diversity | Abundance of variety of vegetation communities | Maintain variety of vegetation communities, subject to natural processes |
| Vegetation composition: typical brown mosses | Percentage cover at a representative number of monitoring stops | Maintain adequate cover of typical brown moss species |
| Vegetation composition: typical vascular plants | Percentage cover at a representative number of monitoring stops | Maintain adequate cover of typical vascular plant species |
| Vegetation composition: native negative indicator species | Percentage cover at a representative number of monitoring stops | Cover of native negative indicator species at insignificant levels |
| Vegetation composition: non-native species | Percentage cover at a representative number of monitoring stops | Cover of non-native species less than 1% |
| Vegetation composition: native trees and shrubs | Percentage cover in local vicinity of a representative number of monitoring stops | Cover of scattered native trees and shrubs less than 10% |

| Attribute | Measure | Target |
|---|---|---|
| Vegetation composition: algal cover | Percentage cover at, and in local vicinity of, a representative number of monitoring stops | Cover of algae less than 2% |
| Vegetation structure: vegetation height | Percentage cover at a representative number of monitoring stops | At least 50% of the live leaves/flowering shoots are more than either 5cm or 15cm above ground surface depending on community type |
| Physical structure: disturbed bare ground | Percentage cover at, and in local vicinity of, a representative number of monitoring stops | Cover of disturbed bare ground not more than 10% |
| Physical structure: tufa formations | Percentage cover in local vicinity of a representative number of monitoring stops | Disturbed proportion of vegetation cover where tufa is present is less than 1% |
| Indicators of local distinctiveness | Occurrence and population size | No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes |
| Transitional areas between fen and adjacent habitats | Hectares; distribution | Maintain/restore adequate transitional areas to support/protect the alkaline fen habitat and the services it provides |

## The Murrough SPA (Site code: 004186)

### Site-specific data

As outlined in the Site Synopsis (NPWS, Version date 15.05.2015)[5]:



'*The Murrough SPA comprises a coastal wetland complex that stretches for 13 km from Kilcoole Station, east of Kilcoole village in the north to Wicklow town in the south, and extends inland for up to 1 km in places. The site includes an area of marine water to a distance of 200m from the low water mark. A shingle ridge runs along the length of the site and carries the Dublin-Wexford railway line.*

*Beside the shingle shore is a stony ridge supporting perennial vegetation. Driftline vegetation on the seaward side includes species such as Sea Rocket (Cakile maritima), Sea Sandwort (Honkenya peploides), Sea Holly (Eryngium maritimum) and Yellow-horned Poppy (Glaucium flavum). Low sand hills occur at Kilcoole, with Marram (Ammophila arenaria) and Lyme-grass (Leymus arenarius). In other areas and further inland a rich grassy sward, which is most extensive in the south end of the site, has developed. A community dominated by Silverweed (Potentilla anserina) and Strawberry Clover (Trifolium fragiferum) occurs in some of the wetter, grassy areas. In some places, particularly at the south of the site, a Gorse (Ulex) heath has developed on the stony ridge.*

*At the southern end of the site, Broad Lough, a brackish, partly tidal lake, has a well-developed saltmarsh community. Common Reed (Phragmites australis) is abundant along the western shore, along with some Sea Club-rush (Scirpus maritimus). Saltmarsh is also present in the northern end of the site in the vicinity of the Breaches. An area of fen occurs at Five Mile Point. Here, Black Bog-rush (Schoenus nigricans) is dominant. Fen Sedge (Cladium mariscus) is present where the ground is wetter. This merges into areas dominated by Common Reed. A wide range of freshwater and brackish marsh habitats occur within the site. These vary from reed-marsh dominated by reeds and rushes (Juncus spp.), to those of sedges (Carex spp.) with other areas supporting a mixture of sedges and Yellow Iris (Iris pseudacorus) also occurring. The marshes merge into wet grassland in many areas and where grazing pressure is low, a herb-rich sward occurs. Sedges are abundant in the wetter areas. Where drains have been cut, there are many other species such as Greater Spearwort (Ranunculus lingua), Bogbean (Menyanthes trifoliata) and Reed Sweet-grass (Glyceria maxima).*

*The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Red-throated Diver, Greylag Goose, Light-bellied Brent Goose, Wigeon, Teal, Black-headed Gull, Herring Gull and Little Tern. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.*

*The shingle ridge at Kilcoole is a traditional nesting area for Little Tern, and the site now supports one of the largest colonies in the country. Numbers vary between years, with 36 pairs recorded in 1995 and 106 pairs in 2006. A tern protection scheme and research programme, co-ordinated by BirdWatch Ireland and the National Parks and Wildlife Service, has been in operation since 1985. Breeding success varies from year to year, largely due to predation by foxes, crows and other species.*

*During the winter this site is important for a number of waterbirds - all population sizes are the mean of peak counts for the 5 years, 1995/96 – 1999/2000. Light-bellied Brent Goose occurs here in internationally important numbers (859). Other species that visit here in nationally important numbers are Red-throated Diver (32), Greylag Goose (300), Wigeon (1,209), Teal (644), Black-headed Gull (997) and Herring Gull (506). Other species that are known to occur here are Little Grebe, Grey Heron, Cormorant, Mute Swan, Whooper Swan, Greenland White-fronted Goose, Shelduck, Gadwall, Shoveler, Mallard, Golden Plover, Ringed Plover, Lapwing, Dunlin, Curlew, Greenshank and Redshank.*

*Short-eared Owl is recorded here during the winter. Little Egret has bred locally in recent years and this site is a main feeding area, with several birds present regularly. While formerly a rare bird in Ireland, Little Egret is now*

[5] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004186.pdf

*well-established with most birds occurring in the south-east and south (Counties Wexford, Waterford and Cork). The Murrough is presently at the edge of the species' range. This site is one of the few sites in Ireland where Reed Warbler breeds regularly. It is considered that 1-4 pairs bred each year during the 1980s and early 1990s, with a minimum of 6 birds in song in 1993. An absence of records since 1996 may be due to under-recording. Kingfisher regularly uses the site. Sandwich Tern are recorded from the site during the autumn.*

*The Murrough SPA is an important site for wintering waterbirds, being internationally important for Light-bellied Brent Goose and nationally important for Red-throated Diver, Greylag Goose, Wigeon, Teal, Black-headed Gull and Herring Gull. It is probably the most important site in the country for nesting Little Tern. The regular occurrence of Red-throated Diver, Little Egret, Whooper Swan, Greenland White-fronted Goose, Golden Plover, Little Tern, Sandwich Tern, Short-eared Owl and Kingfisher is of note as these species are listed on Annex I of the E.U. Birds Directive. Part of the Murrough SPA is a Wildfowl Sanctuary.'*



The Qualifying Interests (QI) (Features of Interest) and the National conservation status of the QI for The Murrough Wetlands SAC are seen in Table 6.

*Table 6. Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for The Murrough SPA*

| **Qualifying Interests, Conservation Status, Management Objectives, Conditions underpinning site integrity for relevant European sites** | | |
|---|---|---|
| **European Site Name & Code** | **Qualifying Interests** | **Current Conservation Status & Trend** |
| **The Murrough SPA**<br><br>**[004186]** | A001 Red-throated Diver *Gavia stellata* | **Amber** |
| | A043 Greylag Goose *Anser anser* | **Amber** |
| | A046 Light-bellied Brent Goose *Branta bernicla hrota* | **Amber** |
| | A050 Wigeon *Anas penelope* | **Red** |
| | A052 Teal *Anas crecca* | **Amber** |
| | A179 Black-headed Gull *Chroicocephalus ridibundus* | **Red** |
| | A184 Herring Gull *Larus argentatus* | **Red** |
| | A195 Little Tern *Sterna albifrons* | **Amber** |
| | A999 Wetlands and Waterbirds | **N/A** |

The Conservation Objectives for The Murrough SPA are as follows [6]:

'*The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.*

*European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.*

*The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.*

*Favourable conservation status of a habitat is achieved when:*

- *its natural range, and area it covers within that range, are stable or increasing, and*

[6] NPWS (2022) Conservation objectives for The Murrough SPA [004186]. Generic Version 9.0. Department of Housing, Local Government and Heritage.

- *the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and*
- *the conservation status of its typical species is favourable.*

*The favourable conservation status of a species is achieved when:*

- *population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and*
- *the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and*
- *there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.*



*Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:*

| ***Bird Code*** | ***Common Name*** | ***Scientific Name*** |
|---|---|---|
| *A001* | *Red-throated Diver* | *Gavia stellata* |
| *A043* | *Greylag Goose* | *Anser anser* |
| *A046* | *Light-bellied Brent Goose* | *Branta bernicla hrota* |
| *A050* | *Wigeon* | *Anas penelope* |
| *A052* | *Teal* | *Anas crecca* |
| *A179* | *Black-headed Gull* | *Chroicocephalus ridibundus* |
| *A184* | *Herring Gull* | *Larus argentatus* |
| *A195* | *Little Tern* | *Sterna albifrons* |

*To acknowledge the importance of Ireland's wetlands to wintering waterbirds, "Wetland and Waterbirds" may be included as a Special Conservation Interest for some SPAs that have been designated for wintering waterbirds and that contain a wetland site of significant importance to one or more of the species of Special Conservation Interest. Thus, a second objective is included as follows:*

*Objective: To maintain or restore the favourable conservation condition of the wetland habitat at The Murrough SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.'*

# Analysis of the Potential Impacts on European Sites

## Construction Impacts

In the absence of mitigation, the construction of the proposed development would impact on the existing ecology of the site, the surrounding area and designated sites downstream of the proposed works. These potential construction effects would include effects that may arise during the site clearance, reprofiling and construction works. It should be noted that the works are proposed in direct proximity to the River Vartry, including the installation of a headwall, and so this waterbody is considered a sensitive receptor of pollution from the construction site. There is potential for significant effects on the qualifying interests of The Murrough Wetlands SAC and The Murrough SPA in the absence of mitigation measures. Construction phase mitigation measures are required on site particularly as construction works can lead to silt laden and contaminated runoff travelling downstream. There is potential for silt laden runoff and contamination to have downstream effects on Natura 2000 sites. Potential construction effects are outlined in Table 7.



## Operational Impacts

Once constructed, all onsite drainage will be connected to separate foul and surface water systems. Surface water runoff will comply with SUDS and will be directed to the Vartry River just north of the subject site. Mitigation measures will be required to ensure that surface water quality is maintained prior to discharge to this watercourse.

## Mitigation Measures and Monitoring

Construction and operational mitigation will be incorporated into the proposed development project to minimise the potential negative impacts within the Zone of Influence (ZoI) including the Vartry River and downstream European sites (Table 8).

## Designated Natura 2000 sites

As the main potential vector for impacts to European sites would be seen to be via the surface water runoff and the River Vartry, no additional controls are required besides those outlined below, during the construction and operational phases of the development, to mitigate against potential negative impacts on designated conservation sites. The mitigation has been designed to ensure that the project will comply with the Water Pollution Acts and County Council and Inland Fisheries Ireland conditions in relation to construction and drainage operations. All construction and operational phase controls outlined will be followed.

| Table 7. Potential for adverse effects on the qualifying interests and conservation objectives of European sites | | |
|---|---|---|
| European Site & Site Code | Qualifying Interests | Potential for Adverse Effects |
| **The Murrough Wetlands SAC [002249]** | Annual vegetation of drift lines [1210]<br><br>Perennial vegetation of stony banks [1220]<br><br>Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]<br><br>Mediterranean salt meadows (*Juncetalia maritimi*) [1410]<br><br>Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210]<br><br>Alkaline fens [7230] | Works on site, dust, and surface water runoff in addition to truck movements during construction may lead to silt or contaminated materials from the site entering the Vartry River. Concrete, silt, or pollution could enter the watercourse during enabling works, including site clearance, reprofiling, and dewatering of foundations (if required during construction). If on-site concrete production is required or cement works are carried out in the vicinity of drains or the Vartry River, there is potential for contamination of the watercourses. The construction of the proposed development may have a significant impact on the water quality of the waterbody, which shares its waters with The Murrough Wetlands SAC. There is potential for accidental pollution to enter the stream in the absence of mitigation.<br><br>The use of plant and machinery, as well as the associated temporary storage of construction materials, oils, fuels, and chemicals in addition to exporting materials offsite, could lead to pollution on site or in the adjacent watercourse. The storage of topsoil or works onsite could lead to dust, soil or silt laden runoff entering adjacent watercourses. The use of haul roads could lead to silt laden runoff or dust with downstream effects on the SAC. Contaminated wastewater from onsite toilets could cause localised pollution.<br><br>Without the presence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt entered the Vartry River upstream of The Murrough Wetlands SAC.<br><br>Out of an abundance of caution, given the nature of the potential effects outlined above, assuming worst case scenario events and if the proposed projects on the adjacent sites were to be carried out concurrently, in the absence of mitigation, the proposed project could potentially impact on the attributes of the Annual vegetation of drift lines [1210], Perennial vegetation of stony banks [1220], Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330], Mediterranean salt meadows (*Juncetalia maritimi*) [1410], Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210], Alkaline fens [7230] as a result of the direct pathway via surface water drainage.<br><br>The mitigation measures outlined will be carried out to ensure that no silt or pollution enters the Vartry River from the construction or operation phases of the proposed project and create localised pollution. In the event of a pollution incident, it would be expected to be small e.g., maximum capacity of truck/digger fuel tank. However, by following the precautionary principal mitigation measures will be in place. |

| Table 7. Potential for adverse effects on the qualifying interests and conservation objectives of European sites | | |
|---|---|---|
| **The Murrough SPA [004186]** | Red-throated Diver (*Gavia stellata*) [A001]<br><br>Greylag Goose (*Anser anser*) [A043]<br><br>Light-bellied Brent Goose (*Branta bernicla hrota*) [A046]<br><br>Wigeon (*Anas penelope*) [A050]<br><br>Teal (*Anas crecca*) [A052]<br><br>Black-headed Gull (*Chroicocephalus ridibundus*) [A179]<br><br>Herring Gull (*Larus argentatus*) [A184]<br><br>Little Tern (*Sterna albifrons*) [A195]<br><br>Wetland and Waterbirds [A999] | Works on site, dust, and surface water runoff in addition to truck movements during construction may lead to silt or contaminated materials from the site entering the Vartry River. Concrete, silt, or pollution could enter the watercourse during enabling works, including site clearance, reprofiling, and dewatering of foundations (if required during construction). If on-site concrete production is required or cement works are carried out in the vicinity of drains or Vartry River, there is potential for contamination of the watercourses. The construction of the proposed development may have a significant impact on the water quality of the river, which will then outfall to the Murrough SPA. There is potential for accidental pollution to enter the stream in the absence of mitigation.<br><br>The use of plant and machinery, as well as the associated temporary storage of construction materials, oils, fuels, and chemicals in addition to exporting materials offsite, could lead to pollution on site or in the adjacent watercourse. The storage of topsoil or works onsite could lead to dust, soil or silt laden runoff entering adjacent watercourses. The use of haul roads could lead to silt laden runoff or dust with downstream effects on the SPA. Contaminated wastewater from onsite toilets could cause localised pollution.<br><br>Without the presence of mitigation measures there is a potential for downstream effects if significant quantities of pollution or silt entered the Vartry River that shares its waters with The Murrough SPA.<br><br>Given the nature of the potential effects outlined above, the proposed project could impact on the following conservation objectives of this SPA:<br><br>Objective I: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.<br><br>Objective ii: To maintain or restore the favourable conservation condition of the wetland habitat at The Murrough SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.<br><br>The mitigation measures outlined will be carried out to ensure that no silt or pollution enters the Vartry River from the construction or operation phases of the proposed project and create localised pollution. In the event of a pollution incident, it would be expected to be small e.g. maximum capacity of truck/digger fuel tank. However, by following the precautionary principal mitigation measures will be in place. |

*Table 8. Mitigation measures*

| Sensitive Receptors | Potential Impacts on SPA & SAC | Mitigation Measures to Prevent Impacts on The Murrough Wetlands SAC and The Murrough SPA |
|---|---|---|
| The Vartry River<br><br>The Murrough Wetlands SAC<br><br>The Murrough SPA | • Habitat degradation<br>• Dust deposition<br>• Pollution<br>• Silt ingress from site runoff<br>• Downstream impacts<br>• Negative impacts on aquatic and bird fauna.<br>• Disturbance. | **Construction**<br><u>Contamination of watercourses leading to European Sites</u><br>• Prior to construction the appointment of an ecologist to oversee enabling works and the implementation of mitigation measures will be carried out. No works will commence on site until the ecologist submits a letter to Wicklow County Council to state that he/she has been appointed and has developed a Construction Environmental Management Plan which includes a) Phasing of the project, b) Full details of the works programme including methodologies for all works, surface water management, c) maps containing details of mitigation measures and d) approval of the instream methodologies outlined by Inland Fisheries Ireland.<br>• Earthwork operations will be carried out such that surfaces, as they are being raised, shall be designed with adequate drainage, falls and profile to control run-off and prevent ponding and flowing.<br>• Any discharges to the watercourse during construction must be discussed with the ecologist, undergo desilting and petrochemical interception and have twice daily turbidity monitoring.<br>• Local watercourses must be protected from dust, silt and contaminated surface water throughout the works. The overland flow on site needs to be taken into account in the construction and long term drainage strategy.<br>• Local silt traps established throughout site as discussed with the ecologist.<br>• Mitigation measures on site include dust control, stockpiling away from watercourse and drains<br>• Stockpiling of loose materials will be kept to a minimum of 20m from watercourses and drains.<br>• Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses.<br>• Fuel, oil and chemical storage will be sited within a bunded area. The bund will be at least 50m away from drains, ditches or the watercourse, excavations and other locations where it may cause pollution.<br>• Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. Any water-filled excavations, including the attenuation tank during construction, that require pumping will not directly discharge to the stream. Prior to discharge of water from excavations adequate filtration will be provided to ensure no deterioration of water quality.<br>• Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses.<br>• Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination.<br>• During the construction works silt traps will be put in place in the vicinity of all runoff channels the stream to prevent sediment entering the watercourse.<br>• Planting in the vicinity of the stream crossings should be put in place as soon as possible to allow biodiversity corridors to establish.<br>• On-site inspections will be carried out by project ecologist during enabling works and until drainage connection is complete.<br>• Maintenance of any drainage structures (e.g. de-silting operations) must not result in the release of contaminated water to the surface water network.<br>• No entry of solids or concrete to the associated stream or drainage network during the connection of pipework |

Air & Dust

- The pro-active control of fugitive dust will ensure prevention of significant emissions arising, rather than a less effective attempt to control them once they have been released.
- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.
- Any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and / or windy conditions.
- Vehicles exiting the Site shall make use of a wheel wash facility where appropriate, prior to entering onto public roads.
- Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly. On any un-surfaced site road, this will be 20kph, and on hard surfaced roads as site management dictates.
- Public roads outside the Site will be regularly inspected for cleanliness and cleaned as necessary.
- Material handling systems and Site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.
- Dust may enter the onsite watercourse via air or surface water with potential downstream impacts. Mitigation measures will be carried out reduce dust emissions to a level that avoids the possibility of adverse effects on the onsite watercourse. The main activities that may give rise to dust emissions during construction include the following:
- Excavation of material;
- Materials handling and storage;
- Movement of vehicles (particularly HGV's) and mobile plant.
- Contaminated surface runoff
- Trucks leaving the site with excavated material will be covered so as to avoid dust emissions along the haulage routes.
- Speed limits on site (15kmh) to reduce dust generation and mobilisation.
- The stream is to be protected from dust on site. This may require additional measures in the vicinity of the bridge (east of the site) if this road is used for machinery e.g. placing of terram/protective material over the stream.
- Regular inspections of the site and boundary should be carried out to monitor dust, records and notes on these inspections should be logged.
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.

| | | |
|---|---|---|
| | | Monitoring<br>• Undertake daily on-site and off-site inspection, where receptors are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces within 100 m of site boundary, integrity of the silt control measures, with cleaning and / or repair to be provided if necessary.<br>• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.<br>• Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period.<br>• Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.<br>• Cover, seed or fence stockpiles to prevent wind whipping.<br>• Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic.<br>• Any road that has the potential to give rise to fugitive dust will be regularly watered, as appropriate, during dry and/or windy conditions.<br>• Maintain a vegetated strip and vehicle exclusion zone between the works and the Vartry River (where possible) in consultation with the project ecologist.<br>• Regular inspection of surface water run-off and any sediment control measures e.g. silt traps will be carried out during the Construction Phase. Regular auditing of construction / mitigation measures will be undertaken e.g. concrete pouring, refuelling in designated areas etc.<br>• Weather conditions will be considered when planning construction activities to minimise the risk of run-off from the Site and the suitable distance of topsoil piles from surface water drains will be maintained.<br><br>Measures Specific to Earthworks<br>• Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.<br>• Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.<br>• Only remove the cover in small areas during work and not all at once.<br>• During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.<br>• Due to the proximity of the onsite watercourse an ecologist will oversee works in particular the excavation of material from the perimeter of the site.<br>• The Contractor will be required to consult with an ecologist prior to the beginning of works to identify any additional measures that may be appropriate and/or required.<br><br>Storage/Use of Materials, Plant & Equipment<br>• Materials, plant and equipment shall be stored in the proposed site compound location;<br>• Plant and equipment will not be parked within 50m of the onsite watercourse at the end of the working day; |

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| | | • Hazardous liquid materials or materials with potential to generate run-off shall not be stored within 50m of the onsite watercourse.<br>• All oils, fuels and other hazardous liquid materials shall be clearly labelled and stored in an upright position in an enclosed bunded area within the proposed development site compound. The capacity of the bunded area shall conform with EPA Guidelines – hold 110% of the contents or 110% of the largest container whichever is greater;<br>• Fuel may be stored in the designated bunded area or in fuel bowsers located in the proposed compound location. Fuel bowsers shall be double skinned and equipped with certificates of conformity or integrity tested, in good condition and have no signs of leaks or spillages;<br>• Waters collected in drip trays must be assessed prior to discharge. If classified as contaminated, they shall be disposed by a permitted waste contractor in accordance with current waste management legal and regulatory requirements;<br>• All persons working will receive work specific induction in relation to material storage arrangements and actions to be taken in the event of an accidental spillage. Daily environmental toolbox talks / briefing sessions will be conducted for all persons working to outline the relevant environmental control measures and to identify any environment risk areas/works.<br><br><u>Watercourses</u><br>• In stream works to be carried out in full consultation with and to the advice of Inland Fisheries Ireland and the project ecologist.<br>• Staging of project to initially identify, isolate and contain the overland flow channel on site. The presence/absence of the oveland flow will be monitored throughout the development.<br>• Mitigation measures on site include dust control, stockpiling away from watercourses and drains<br>• Pollution control and mitigation on site<br>• Stockpiling of loose materials will be kept away from watercourses and drains. A risk based approach will be taken.<br>• Stockpiles and runoff areas following clearance will have suitable barriers to prevent runoff of fines into the drainage system and watercourses.<br>• During the construction works silt traps will be put in place in the vicinity of all runoff channels to prevent sediment entering the watercourse (Vartry River).<br>• Petrochemical interception and bunds in refuelling area.<br>• Planting in the vicinity of the stream crossings should be put in place as soon as possible to allow biodiversity corridors to establish.<br>• On-site inspections to be carried out by project ecologist. Twice daily monitoring of turbidity (from 11am) will be carried out on site.<br>• During the works silt traps will be put in place.<br>• No discharges will be to the watercourse during works.<br>• Silt traps established throughout site including a double silt fence between the site and the watercourse.<br>• Sufficient onsite cleaning of vehicles prior to leaving the site and on nearby roads, will be carried out, particularly during groundworks.<br>• The Site Manager will be responsible for the pollution prevention programme and will ensure that at least daily checks are carried out to ensure compliance. A record of these checks will be maintained.<br>• The site compound will include a dedicated bund for the storage of dangerous substances including fuels, oils etc. Refuelling of vehicles/machinery will only be carried out within the bunded area. |

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| | | • A project ecologist must be appointed and be consulted in relation to all onsite drainage during construction works. Consultation with the project ecologist will not involve the formulation of new mitigation measures for the purposes of protecting any European Site, and relate only to the implementation of those mitigation measures already stated in the submission or the formulation of mitigation for other purposes.<br>• Dewatering of excavations may be necessary. Appropriate monitoring of groundwater levels during site works will be undertaken. Standard construction phase filtering of surface water for suspended solids will be carried out. Unfiltered surface water discharges or runoff are not permitted from the site into the Vartry River during the works. Trenched double silt fencing shall be put in place along boundary of the proposed development site with 10m buffer from the Vartry River. This fencing must be in place as one of the first stages on site and prior to the full site clearance. The silt fencing will act as a temporary sediment control device to protect the watercourse from sediment and potential site water runoff but also act as a tree protection zone for the riparian buffer. The fencing will be inspected twice daily, based on site and weather conditions, for any signs of contamination or excessive silt deposits.<br>• Concrete trucks, cement mixers or drums/bins are only permitted to wash out in designated wash out area greater than 50m from sensitive receptors including drains and drainage ditches.<br>• Abstraction of water from watercourses is not to be permitted.<br>• Spill containment equipment shall be available for use in the event of an emergency. The spill containment equipment shall be replenished if used and shall be checked on a scheduled basis.<br>• All site personnel will be trained in the importance of good environmental practices including reporting to the site manager when pollution, or the potential for pollution, is suspected. All persons working on-site will receive work specific induction in relation to surface water management and run off controls. Daily environmental toolbox talks / briefing sessions will be conducted to outline the relevant environmental control measures and to identify any environment risk areas/works.<br>• Environmental risks due to construction and operation of the proposed development do potentially exist, particularly in relation runoff from sloping site, drains that could lead to the Vartry River Ecological supervision will be required during diversion, excavation and enabling works stages. Silt interception measures will need to be in place to ensure that the watercourses are not impacted during works and in particular during the site clearance, in-stream works and reprofiling stages. Landscaping of the grassed areas of the site proximate to the Vartry River will take place immediately following re-profiling, to act as a buffer to protect the watercourse.<br><br>**Operation**<br>Signage in relation to the sensitivities of the SAC and SPA will be placed along the boundary with the River Vartry in consultation with the project ecologist.<br>The drainage network will be inspected by the project ecologist and in particular the petrochemical interceptor.<br>Landscaping will be carried out as per landscape plan. |

## Adverse Effects on the conservation objectives of European sites likely to occur from the project (post mitigation)



A robust series of mitigation measures will be carried out. These have been developed by a multidisciplinary project team. These would ensure that no significant pollution enters the Vartry River during construction, that the water entering surface water system is clean and uncontaminated and that dust emissions are controlled on site. Early implementation of ecological supervision on site at initial mobilisation and enabling works is seen as an important element to the project, particularly in relation to the implementation of surface water runoff mitigation.

With the successful implementation of the outlined mitigation measures, no significant impacts are foreseen from the construction or operation of the proposed project. Residual impacts of the proposed project will be localised to the immediate vicinity of the proposed works site. The construction mitigation proposed for the development satisfactorily addresses the potential impacts on designated conservation sites through the application of construction and operational phase controls as outlined above. In particular, mitigation measures to ensure compliance with Water Pollution Acts and prevent silt, dust and pollution entering the Vartry River will satisfactorily address the potential impacts on downstream biodiversity and European sites. No significant adverse impacts on the conservation objectives of European sites are likely following the implementation of the mitigation measures outlined above.

## Conclusion

In a strict application of the precautionary principle, it has been concluded that mitigation measures are required to prevent impacts on The Murrough Wetlands SAC and The Murrough SPA. Impacts are likely from the proposed works in the absence of mitigation measures, primarily as a result of the direct hydrological connection to these sites via surface water discharge to the Vartry River and the proximity of the site during construction (drainage works required at Vartry River). As a result, there is potential for downstream impacts from the project during site clearance, enabling, construction, landscaping, and drainage works. For this reason, a NIS was carried out to assess whether the proposed project, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European Site. All other European sites were screened out at initial screening.

Construction on this site will create localised light and noise disturbance. This would not impact European sites. Mitigation measures will be in place to ensure there are no significant impacts on the Vartry River that leads to conservation sites. A project ecologist will be appointed to oversee works in relation to the enabling works and the implementation of mitigation measures as outlined on site. The implementation of mitigation measures outlined, which will be followed, will be sufficient to prevent adverse effects on the integrity of European sites.

Following the implementation of the mitigation measures outlined, the construction and presence of this development would not be deemed to have a significant impact on the integrity of European sites. No significant impacts are likely on European sites, alone in combination with other plans and projects based on the implementation of standard construction phase mitigation measures.

These reports present an Appropriate Assessment Screening and NIS for the proposed development. The NIS outlines the information required for the competent authority to screen for appropriate assessment and to determine whether or not the proposed development, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European site.

On the basis of the content of this report, the competent authority is enabled to conduct an Appropriate Assessment and consider whether, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites' conservation objectives, will adversely affect the integrity of the European site.

**No significant effects are likely on European sites, their features of interest or conservation objectives. The proposed project will not will adversely affect the integrity of European sites.**

## Data used for the AA Screening/NIS Assessment

NPWS site synopses and Conservation objectives of sites within 15km were examined. No Natura 2000 sites beyond 15km has a direct or indirect pathway to the proposed development site. The most recent SAC and SPA boundary shapefiles were downloaded and overlaid on Bing terrain maps and satellite imagery.



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19. NPWS (2020) Conservation Objectives: Glen of the Downs SAC 000719. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
20. NPWS (2022) Conservation objectives for Wicklow Mountains SPA [004040]. First Order Site-specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.

# Appendix I – Pump Station Layout Design Details