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Marine & Environmental Consultancy

Appropriate Assessment Screening - Information for a Stage 1 (AA Screening) for the proposed SHD at Coolagad, Greystones, Co. Wicklow.

4th April 2022

Prepared by: Bryan Deegan (MCIEEM) of Altemar Ltd.
On behalf of: Cairn Homes Properties Ltd.

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Project	Appropriate Assessment Screening - Information for a Stage 1 (AA Screening) for the proposed SHD at Coolagad, Greystones, Co. Wicklow.		
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Table of Contents

Introduction

The following Appropriate Assessment (AA) screening report (for screening stage) has been prepared by **Altemar Ltd.** at the request of Cairn Homes Ltd. The project involves a Strategic Housing Development (SHD) at Coolagad, Greystones, Co. Wicklow of c.26.03ha. The proposed development consists of 586 residential units (351 houses; 203 apartments and 32 duplex units) at a site c. 26.03 ha at Coolagad, Greystones. The development will also include the provision of a community building (392 sqm), a creche, a sport field and a MUGA.

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 the project, either on its own, or in combination with other plans and projects, upon a Natura 2000 site and considers whether, on the basis of objective scientific evidence, it can be concluded, in view of best scientific knowledge and the conservation objectives of the relevant European sites, that there are not likely to be significant effects on any European site.

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, the managing director of Altemar, is an Environmental Scientist and Marine Biologist with 27 years' experience working in Irish terrestrial and aquatic environments, providing services to the State, Semi-State and industry.

Bryan is currently contracted to Inland Fisheries Ireland as the sole "External Expert" to environmentally assess internal and external projects. He is also chair of an internal IFI working group on environmental assessment. 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 carried out all elements of this Appropriate Assessment Screening and NIS.

Background to the Appropriate Assessment

The Habitats Directive (92/43/EEC), together with the Birds Directive (2009/147/EC), forms the cornerstone of European nature conservation policy. The Directive protects over 1000 animals and plant species and over 200 *"habitat types"* which are of European importance. In the 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 (European sites).

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 [European] 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."

Furthermore, 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 NATURA assets which must also be useful to monitor the plan or project implementation."*

As outlined revised Guidance published in October 2021 (EC, 2021) *"in Identifying the Natura 2000 sites that may be affected should be done by taking into consideration all aspects of the plan or project that could have potential effects on any Natura 2000 sites located within the zone of influence of the plan or project. This should*

[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.

take into account all of the designating features (species, habitat types) that are significantly present on the sites and their conservation objectives. In particular, it should identify:

- *any Natura 2000 sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;*

- *any Natura 2000 sites within the likely zone of influence of the plan or project. Natura 2000 sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g. water) and various types of waste, discharge or emissions of substances or energy;*

- *Natura 2000 sites in the surroundings of the plan or project (or at some distance) which host fauna that can move to the project area and then suffer mortality or other impacts (e.g. loss of feeding areas, reduction of home range);*

- *Natura 2000 sites whose connectivity or ecological continuity can be affected by the plan or project.*

- *The range of Natura 2000 sites to be assessed, i.e. the zone in which impacts from the plan or project may arise, will depend on the nature of the plan or project and the distance at which effects may occur. For Natura 2000 sites located downstream along rivers or wetlands fed by aquifers, it may be that a plan or project can affect water flows, fish migration and so forth, even at a great distance. Emissions of pollutants may also have effects over a long distance."*

Methodology

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, 2021), 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', the European Communities (Birds and Natural Habitats) Regulations 2011 and the provision of Article 6 of the Habitats Directive 92/43/EEC (European Commission, 21 November 2018, OPR Practice Note PN01 Appropriate Assessment Screening for Development Management[2] and Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

In order to comply with the above Guidelines and legislation, the Appropriate Assessment Screening process must be structured as follows:

- Description of the proposed project or plan;
- Identification of European sites potentially affected;
- Identification and description of individual and 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] https://www.opr.ie/wp-content/uploads/2021/03/9729-Office-of-the-Planning-Regulator-Appropriate-Assessment-Screening-booklet-15.pdf

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

The proposed development consists of a strategic housing development at this site of c.26.03ha at 'Coolagad', Greystones, Co. Wicklow (7 year permission). The application site is generally located to the west of the R761 Rathdown Road, north of Gate Lodge; north and west of Coolagad House, Temple Carrig School, Gaelscoil na gCloch Liath and Greystones Educate Together National School. The lands are bounded by Waverly Avenue and Seagreen Park residential areas to the east. Templecarrig Lower is located to the north of the lands and Kindlestown Upper to the west.

The proposed development will consist of:

- 586 residential units including:
- 351 two storey houses (207 no. 3 bed, 140 no. 4 bed, 4 no. 5 bed) comprising detached, semi-detached and terraced units
- 203 no. apartments (65 no. 1 bed, 123 no. 2 bed, 15 no. 3 bed) provided within 6 no. blocks ranging from three to four-storey (over basement) with residential amenity facilities.
- 32 no. duplex units within 2 no. three-storey blocks (16 no. 2 bed and 16 no. 3 bed units)
- c. 5,192 sqm of communal open space is provided to serve the proposed apartment/duplex units;
- Community building (single storey) of 392 sq.m. with 29 car parking spaces, including changing rooms and a multipurpose room.
- Creche building of 734 sq.m. with 21 car parking spaces
- A new vehicular entrance, with signalised junction and pedestrian crossings, will be provided off the R761 (Rathdown Road). The new junction will be linked to the existing signalised junction at Blacklion Manor Road / Redford Park which has a planned upgrade by Wicklow County Council. Cycle lanes will be provided along this section of the R761 on both sides. A footpath will also be provided on its western side. Car parking will be provided to the east of the R761, in the front of Redford Cemetery.
- The new access will provide a distributor road as part of the long-term objective to provide a northern access route from Greystones to the N11.
- Car and bicycle parking spaces are provided as follows:
- 702 on curtilage car parking spaces for the houses; 206 car parking spaces at basement level and 5 at surface level for the apartments; and 32 spaces for the duplex units and 10 visitor spaces at surface level;
- 22 motorbike parking spaces;
- 436 resident and 118 visitor bicycle parking spaces are proposed in a mix of basement and surface levels for the apartment blocks and duplex units; 12 bicycle spaces are proposed for the creche, 12 for the community centre and 10 at the sport field.
- The development also includes site development infrastructure, a hierarchy of internal streets including bridges, cycle paths & footpaths; new watermain connection and foul and surface water drainage; the development also provides for the construction of a new public foul sewer along the R761/R762 from the site entrance as far as the R762 in front of St. Kevin's National School, Rathdown Road, Greystones.
- c.10.43ha open space to include a sport field, a MUGA, private, communal and public open spaces incorporating an existing stream, formal and informal play areas, and new boundary treatments.
- ESB substations/switchrooms, lighting, site drainage works and all ancillary site development works above and below ground.

Site context

It should be noted that several springs are located within the subject site and the Greystones Stream traverses the centre of the subject site in an easterly direction, before discharging to the Irish Sea at Greystones North Beach. The proposed development site is located in an area with many hills and slopes, with the terrain falling

from 90mOD at the western boundary to 39mOD at the R761 Rathdown Road on the eastern side. Towards the south-western extremity of the site, it reaches a highest point of 95mOD. Most of the land slopes moderately at gradients in the range of 1:12 and 1:15 but there are steeper parts of the site with slopes of up to 1:6 which are located toward the higher side of the southern portion of the site.

Spatial Scope and Zone of Influence

As outlined in CIEEM (2018) '*The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries.*' In line with best practice guidance an initial zone of influence be set at a radius of 2km for non-linear projects (IEA, 1995). As works are proposed in close proximity to multiple springs, watercourses and a public surface water network, which outfall to the marine environment proximate to Bray Head SAC, in the absence of mitigation measures a Bray Head SAC is deemed to be within the potential Zone of Influence (ZoI). The ZoI of the proposed project would be seen to be restricted to the site outline with potential for localised noise, dust, light impacts during construction, in addition to downstream effects on the marine environment and a European site. Drainage from site, both foul and surface water during construction and operation, would be seen as the outputs, in addition to the watercourses within and adjacent to the site, could potentially extend the potential ZoI into the marine environment. As a result, further information is provided in relation to the works on site, the proposed landscape design, the drainage strategy in addition to the flood risk assessment.

Landscape

A Landscape Report was composed by Kevin Fitzpatrick, Landscape Architecture in relation to the proposed development. In relation to the existing landscape characteristics the report states that: '*The aesthetic quality of the existing stream, native hedgerows, trees, marsh area and the steep ground levels are the most important components in defining the landscape character of the site. Other than these elements, the general character of the landscape would be considered that of a traditional agricultural landscape mixed with adjoining developing residential use. In a wider context, the Glen of the Downs and coastal areas would be of a high value landscape character*.'

In relation to the proposed landscape for the development site, the report states that: '*The enhancement and strengthening of existing landscape features throughout the site is a fundamental aspect of the overall landscape approach. The green infrastructure strategy serves to link and integrate all of the spaces within the site together using existing and new landscape elements, while also contributing to green infrastructure in a wider context by creating opportunities to connect to green infrastructure beyond the site boundary.*

The main method used to enhance green infrastructure links is the retention and strengthening of existing hedgerows and woodland areas. Existing hedgerows provide the opportunity to create green routes through the site, which serve both a recreational and ecological function. Hedgerows increase local biodiversity and create habitats, thus becoming biodiversity corridors which link to other green infrastructure features in the surrounding areas. In addition to this, retaining hedgerows and ditches also allows the prospect of implementing a SuDS network through the site which can integrate into the circulation routes and become a part of the wider green infrastructure strategy.

The stream and associated vegetation is also of high priority. Similar to the treatment of the existing hedgerows, this linear space will become an integral linking feature in the wider green infrastructure strategy. The existing riparian corridor will be enhanced and significantly widened to form the focus on one of the main spaces. The existing wetland marsh will also be increased in size and enhanced to create an important wetland habitat of significant biodiversity value. The stream and wetland form the basis for a SuDS system, with all proposed channels eventually running into the stream. This is expanded upon with ditches and swales that will be created as bioswales adding to the green infrastructure network.'

The proposed landscape masterplan is seen in Figure 5.

Outline Construction Environmental Management Plan

AECOM has been appointed to undertake this Outline Construction Environmental Management Plan (Outline CEMP) and the OCEMP accompanies this submission. This Outline CEMP was reviewed and details included within the NIS where necessary. The Outline CEMP sets out the procedures, standards, work practices and management responsibilities to address potential environmental effects that may arise from the Proposed Development. The Outline CEMP outlines the approach that will be adopted to environmental management throughout the development works at the site, with the primary aim of reducing any adverse effects from construction on the environment.

Figure 1. Site context map

Figure 2. Site outline in red

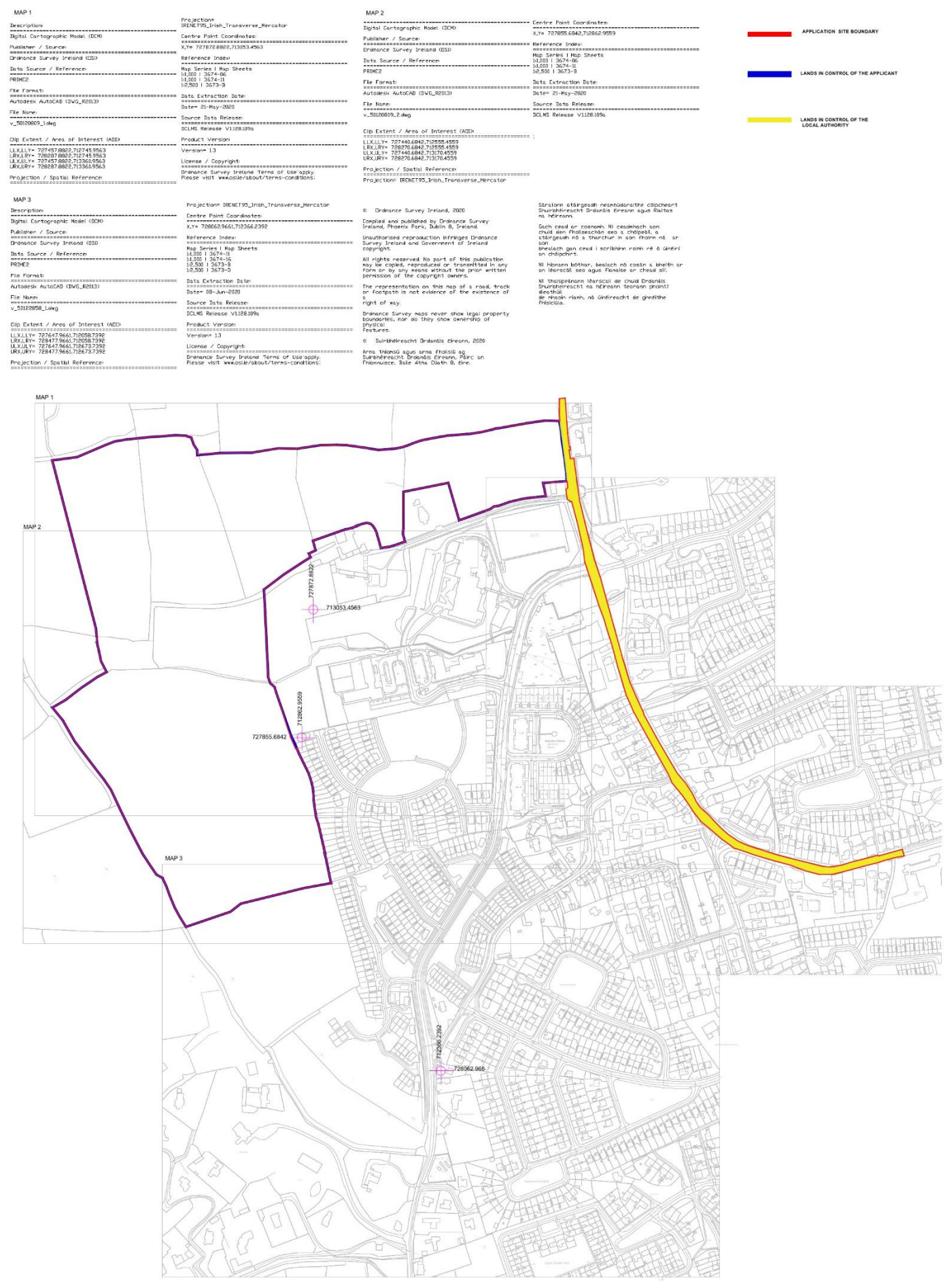

Figure 3. Site location map

Figure 4. Overall Site layout

Figure 5. Landscape Masterplan

Drainage

An Infrastructure Report was composed by AECOM for the Residential Lands at Coolagad, Greystones.

Foul Water

In relation to the existing foul water drainage for the proposed development, the report states that: '*The existing site is greenfield at present and the existing foul drainage infrastructure is located in the R761 as indicated in the services record drawings contained in Appendix M. A Ground Penetration Radar (GPR) was carried out along the R761 (Survey ID MG38901-U), confirming the presence of the existing foul network as per the existing record drawings obtained. Please refer to Appendix M for full map of the existing record drawings obtained*.'

The Irish Water Web Map taken from the Infrastructure Report, which shows the existing drainage network is below (Figure 6).

In relation to the proposed foul water drainage for the proposed development, the report states that: '*AECOM have reviewed the existing foul water network in the area and have identified a new connection location into the existing 375mm combined sewer that flows eastwards in Victoria Road* (Figure 16)*, which is currently flowing towards the existing pumping station. Refer to Figure 3 for the location of the proposed foul water connection. The proposed foul sewers have been designed in accordance with Irish Water's code of Practice for Wastewater Infrastructure and will fall by gravity into the existing 375mm combined sewer via a new 300mm pipe to be laid along the R761 and Victoria Road roadways. The proposed foul network has been modelled using Innovyze Micro drainage software and detailed calculations are enclosed in Appendix N. Refer to AECOM Drawing No. 60641912-ACM-XX-00-DR-CE-10-0501 to 0506 for the proposed drainage layout. The estimated wastewater discharge associated with the proposed development has been based on Irish Water's Code of Practice for Wastewater Infrastructure.'*

The foul water will then be pumped to Greystones Wastewater Treatment Facility where it will be treated and then discharged to the Irish Sea. The person equivalent (PE) organic capacity for Greystones Wastewater Treatment Facility is 40,000[3]. Based on the 2019 Environmental Report the Organic capacity remaining is 15,091 (PE).

Surface Water

In relation to the existing site surface water drainage, the report states the following: '*There are several springs located within the subject site and a stream which originates within the subject site and drains through the centre of the site in an easterly direction.*

In October 2020, AECOM carried out a site visit to estimate the extent of the existing stream on site and to assess the existing springs onsite. The following was noted:

- *One spring running from the north-west corner of the subject site, flowing eastwards, follows the existing hedgerows located at the northern perimeter, as far as the north-east corner of the development. Due to the high-dense vegetation, it was not possible estimate the direction of the flow beyond this point.*
- *Another spring was identified within the heart of the proposed open space to the north of the site. During the site visit, a high-water table was encountered. The water from the spring is currently flowing eastwards via an existing culvert. It is estimated that the culvert is discharging into an existing surface*

[3] Greystones Wastewater Treatment Facility- 2019 Environmental Report https://www.water.ie/__uuid/3fa53ead-afa6-4bbe-9fbc-bed2d00d5496/D0010-01_2019_AER.pdf

water manhole prior to discharge to the existing network, but the existing record drawings obtained for the subject area have not identified any surface water network in the area.

Further investigations were carried out on site on the 31st March 2021 by Enviroguide Consulting and further drainage infrastructure has been found within the subject site, as follows:

- *A 750mm diameter culvert, approximately 6.1m long, has been identified along the existing stream that flows through the site. The culvert appears to facilitate access between the existing fields either side of the stream and is located approximately 9.9m from the eastern boundary of the subject site.*
- *A surface water pipe with an unknown diameter has been identified draining from, what appears to be, a natural depression located in the south eastern corner of the subject site. The pipe drains in a northerly direction discharging into the existing stream, east of the abovementioned 750mm culvert section.*
- *There are also 2 no. culverts located in the eastern portion of the site, however their alignment and sizing are unknown. According to a neighbour, one of the culverts drains from within the subject site, at the north eastern corner of the Evans property, and drains in a south easterly direction, traversing the Evans property and back into the subject site, before it exits the subject site again.*

It is understood that the second culvert drains from the site boundary at the north eastern corner of the subject site and drains in a southerly direction, before it exits the subject site approximately 75m east of where the other unknown culvert exits the site. It is believed that this is the culvert which drains the spring located in the north-west corner of the subject site that flows along the existing hedgerow along the northern perimeter of the site.

It is unknown as to whether these 2 no. culverts link up further downstream, however it is worth noting that an existing 450mm diameter surface water pipe has been identified approximately 65m south of this location which may be the outfall.'

In relation to the proposed surface water plans for the subject site, the report stats that: '*With no formal existing surface water networks identified within the site area or along the R761 roadway, it is currently proposed to maintain the current flow paths from the site and drain surface water runoff from the proposed development to either the existing stream within the site, a proposed wetland area or the existing underground pipe identified in the Envrioguide survey. Refer AECOM drawing no. 60641912-ACM-XX-00-DR-CE-10-0501 to 0506 for the proposed on-site drainage and discharge locations. AECOM have modelled the proposed on-site surface water drainage network in order to ensure that the discharge will be restricted to the associated greenfield runoff rate and that sufficient attenuation storage will be provided to achieve this*.'

The drainage network for the proposed development can be seen in Figures 7-12.

Flood Risk Assessment

AECOM have been appointed by Cairn Homes Properties Ltd. to undertake a Flood Risk Assessment (FRA) for the proposed residential development in Coolagad, Greystones, Wicklow.

In conclusion the report states that: '*The flood risk assessment was prepared for the purposes of assessing the flood risk to the proposed residential development in Coolagad, Greystones. AECOM have reviewed the CFRAM Flood Maps available and noted that no maps were developed for the Coastal Flood Risk that would comprise the subject site. It is also noted that as part of the CFRAM Map Study, 2 No. predicted future scenarios are available for the Greystones area, showing that the proposed development is not subject to risk of coastal flooding.*

With regard to Fluvial Flooding, the CFRAM maps show the presence of a stream within the site, providing the estimated flood water levels for the 0.1% AEP Flood Event in two locations. Given the predicted water level (for the 0.1% AEP) of 70.21m and 64.79m and the lowest proposed level on site in these locations (71.96m and 66.89m respectively, which is 1.75m and 2.10m higher than the predicted water levels), it is concluded that the subject site is not a risk from fluvial flooding.

The CFRAM maps did not develop a study for the subject area for pluvial flooding, showing only the Dublin City area. However, the pluvial flood risk will be mitigated through an effective surface water and SuDS strategy. Similarly, a series of swales will intercept and collect the surface water runoff from the Kindlestown Hill and discharge it, at a control rate, into the existing stream within the site. The proposed discharge flow rate will be limited to what is currently being discharged to the stream such that existing flows within the stream are not increased as this could potentially create downstream impacts.

In relation to groundwater vulnerability, the site is classified in class 'M' for moderate, showing a moderate possibility that the site's groundwater can be contaminated. Groundwater was encountered during the ground investigations carried out and further details can be found in the Hydrogeological Assessment by Enviroguide Consultants. It is concluded that the subject site is located with Flood Zone C, negating the requirement of a Justification Test.'

Summary of Ecological importance.

Biodiversity assessments were carried out on site as outlined in Table 1:

Table 1 : Biodiversity Fieldwork Dates

Survey	Dates
Habitat and Flora Assessment	31st August 2020 & 31st August 2021,
Terrestrial Mammal	6th November 2020, 26th February 2021 & 7th January 2022
Bat Assessment	31st August 2020, 31st August 2021,
Wintering bird Assessment	6th November 2020, 26th February 2021, 27th March 2021, 7th January 2022 and 20th January 2022.

In summary, the proposed development site consists primarily of Improved agricultural grassland (GA1) and hedgerows (WL1), scrub (WS1) and treelines (WL2). No flora or habitats of National or international conservation importance were noted on site during the surveys. No invasive flora species were noted on site. No flora species of conservation importance or invasive species were noted on site by the NPWS or NBDC or during site surveys. No amphibians or reptiles were noted on site. However, given the favourable habitats on site for frogs it would be expected that the wetland, riparian, spring and pond habitats would be locally important. Native hedgerows were noted on site. These would also be seen to be locally important to biodiversity. In relation to bird species no bird species on Annex I of the EU Birds Directive or qualifying interests of nearby SPA's were noted on site by NPWS or NBDC. The watercourse (acting as a biodiversity corridor), drainage ditches, springs, wetland, pond, hedgerows and treelines would be seen as the most important habitats on site. These elements form refuges and food sources for local biodiversity and provide biodiversity corridors to the surrounding areas. It should be noted that prior to the commencement of the design stage of this project, the local biodiversity value of these habitats was noted. As a result, the proposed development has been designed around the retention of these habitats and biodiversity corridors where possible. Further information is provided in Appendix I.

Irish Water Web Map

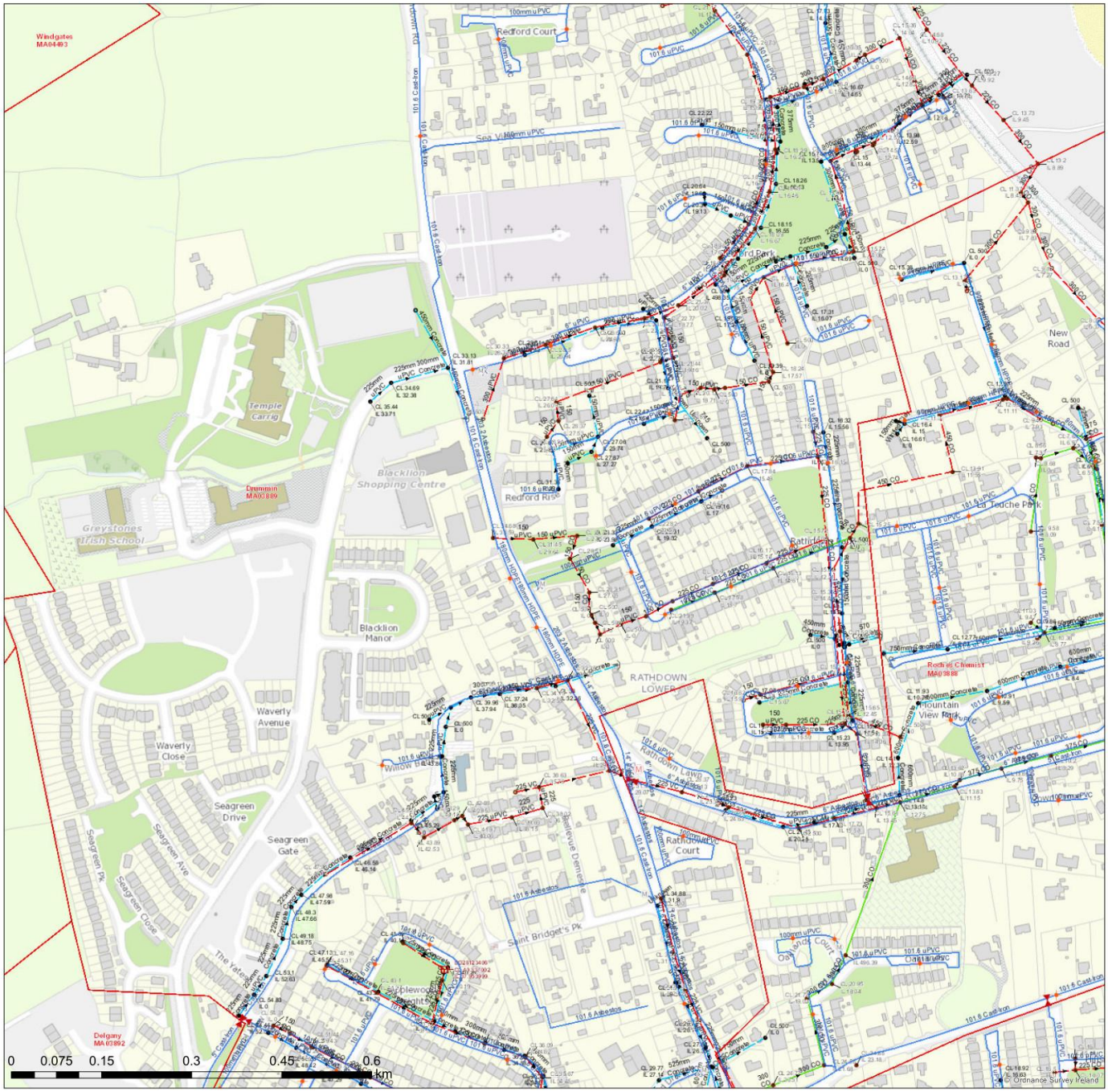

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Figure 6. Existing drainage networks

Figure 7. Proposed drainage layout (Sheet 1 of 5)

Figure 8. Proposed drainage layout (Sheet 2 of 5)

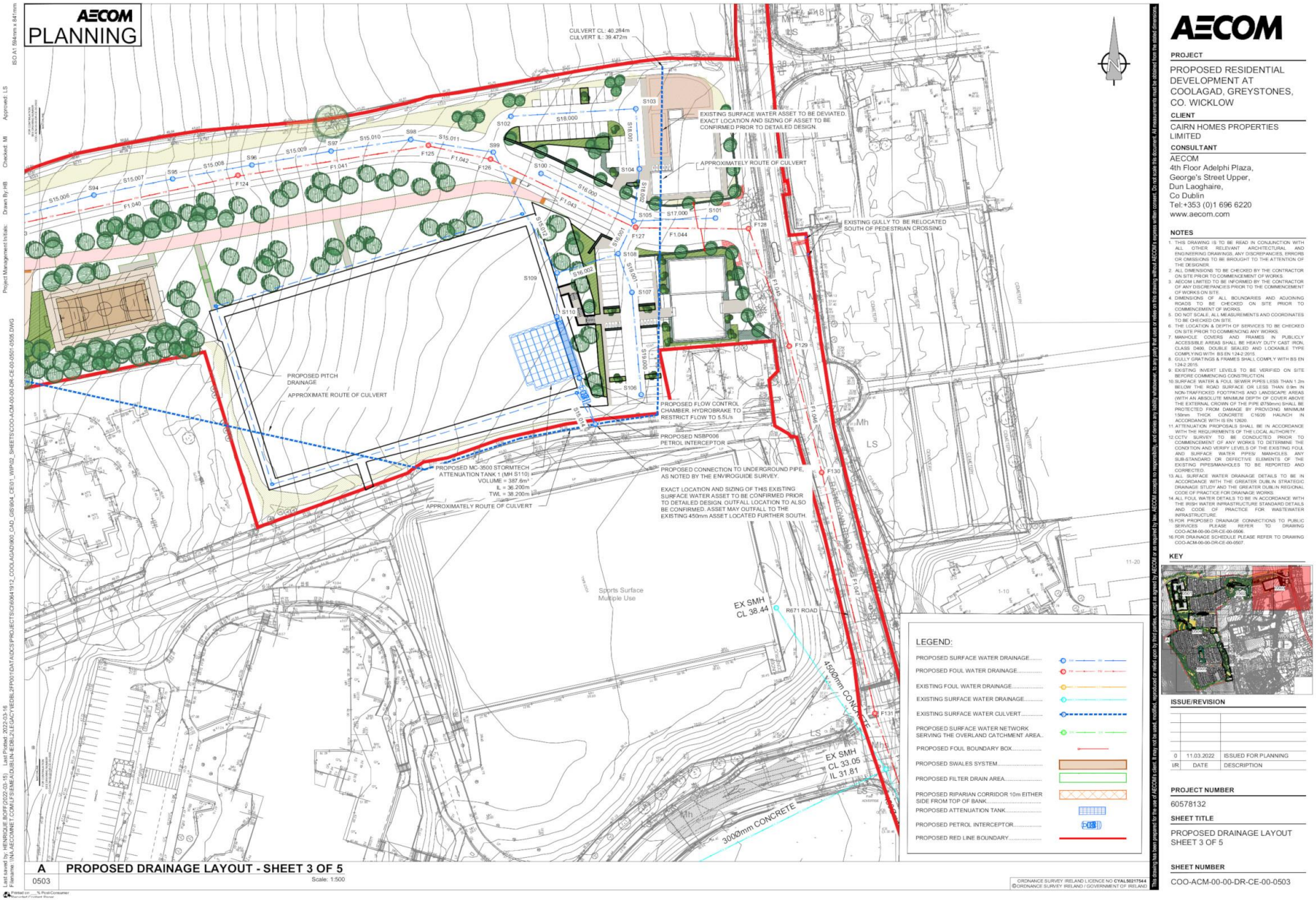

Figure 9. Proposed drainage layout (Sheet 3 of 5)

AECOM

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT AT COOLAGAD, GREYSTONES, CO. WICKLOW

CLIENT

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NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS, ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE DESIGNER.
2. ALL DIMENSIONS TO BE CHECKED BY THE CONTRACTOR ON SITE PRIOR TO COMMENCEMENT OF WORKS.
3. AECOM LIMITED TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF WORKS ON SITE.
4. DIMENSIONS OF ALL BOUNDARIES AND ADJOINING ROADS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS.
5. DO NOT SCALE, ALL MEASUREMENTS AND COORDINATES TO BE CHECKED ON SITE.
6. THE LOCATION & DEPTH OF SERVICES TO BE CHECKED ON SITE PRIOR TO COMMENCING ANY WORKS.
7. MANHOLE COVERS AND FRAMES IN PUBLICLY ACCESSIBLE AREAS SHALL BE HEAVY DUTY CAST IRON, CLASS D400, DOUBLE SEALED AND LOCKABLE TYPE COMPLYING WITH BS EN 124:2015.
8. GULLY GRATINGS & FRAMES SHALL COMPLY WITH BS EN 124:2015.
9. EXISTING INVERT LEVELS TO BE VERIFIED ON SITE BEFORE COMMENCING CONSTRUCTION.
10. SURFACE WATER & FOUL SEWER PIPES LESS THAN 1.2m BELOW THE ROAD SURFACE OR LESS THAN 0.9m IN NON-TRAFFICKED FOOTPATHS AND LANDSCAPE AREAS (WITH AN ABSOLUTE MINIMUM DEPTH OF COVER ABOVE THE EXTERNAL CROWN OF THE PIPE Ø750mm) SHALL BE PROTECTED FROM DAMAGE BY PROVIDING MINIMUM 150mm THICK CONCRETE C16/20 HAUNCH IN ACCORDANCE WITH IS EN 12620.
11. ATTENUATION PROPOSALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY.
12. CCTV SURVEY TO BE CONDUCTED PRIOR TO COMMENCEMENT OF ANY WORKS TO DETERMINE THE CONDITION AND VERIFY LEVELS OF THE EXISTING FOUL AND SURFACE WATER PIPES/ MANHOLES. ANY SUB-STANDARD OR DEFECTIVE ELEMENTS OF THE EXISTING PIPES/MANHOLES TO BE REPORTED AND CORRECTED.
13. ALL SURFACE WATER DRAINAGE DETAILS TO BE IN ACCORDANCE WITH THE GREATER DUBLIN STRATEGIC DRAINAGE STUDY AND THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS.
14. ALL FOUL WATER DETAILS TO BE IN ACCORDANCE WITH THE IRISH WATER INFRASTRUCTURE STANDARD DETAILS AND CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE.
15. FOR PROPOSED DRAINAGE CONNECTIONS TO PUBLIC SERVICES PLEASE REFER TO DRAWING COO-ACM-00-00-DR-CE-00-0506.
16. FOR DRAINAGE SCHEDULE PLEASE REFER TO DRAWING COO-ACM-00-00-DR-CE-00-0507.

KEY

ISSUE/REVISION

I/R	DATE	DESCRIPTION
0	11.03.2022	ISSUED FOR PLANNING

PROJECT NUMBER

60578132

SHEET TITLE

PROPOSED DRAINAGE LAYOUT SHEET 4 OF 5

SHEET NUMBER

COO-ACM-00-00-DR-CE-00-0504

Figure 10. Proposed drainage layout (Sheet 4 of 5)

AECOM

PROJECT

PROPOSED RESIDENTIAL DEVELOPMENT AT COOLAGAD, GREYSTONES, CO. WICKLOW

CLIENT

CAIRN HOMES PROPERTIES LIMITED

CONSULTANT

AECOM
4th Floor Adelphi Plaza,
George's Street Upper,
Dun Laoghaire,
Co Dublin
Tel:+353 (0)1 696 6220
www.aecom.com

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS. ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE DESIGNER.
2. ALL DIMENSIONS TO BE CHECKED BY THE CONTRACTOR ON SITE PRIOR TO COMMENCEMENT OF WORKS.
3. AECOM LIMITED TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF WORKS ON SITE.
4. DIMENSIONS OF ALL BOUNDARIES AND ADJOINING ROADS TO BE CHECKED ON SITE PRIOR TO COMMENCEMENT OF WORKS.
5. DO NOT SCALE. ALL MEASUREMENTS AND COORDINATES TO BE CHECKED ON SITE.
6. THE LOCATION & DEPTH OF SERVICES TO BE CHECKED ON SITE PRIOR TO COMMENCING ANY WORKS.
7. MANHOLE COVERS AND FRAMES IN PUBLICLY ACCESSIBLE AREAS SHALL BE HEAVY DUTY CAST IRON, CLASS D400, DOUBLE SEALED AND LOCKABLE TYPE COMPLYING WITH BS EN 124-2 2015.
8. GULLY GRATINGS & FRAMES SHALL COMPLY WITH BS EN 124-2 2015.
9. EXISTING INVERT LEVELS TO BE VERIFIED ON SITE BEFORE COMMENCING CONSTRUCTION.
10. SURFACE WATER & FOUL SEWER PIPES LESS THAN 1.2m BELOW THE ROAD SURFACE OR LESS THAN 0.9m IN NON-TRAFFICKED FOOTPATHS AND LANDSCAPE AREAS (WITH AN ABSOLUTE MINIMUM DEPTH OF COVER ABOVE THE EXTERNAL CROWN OF THE PIPE Ø750mm) SHALL BE PROTECTED FROM DAMAGE BY PROVIDING MINIMUM 150mm THICK CONCRETE C16/20 HAUNCH IN ACCORDANCE WITH IS EN 12620.
11. ATTENUATION PROPOSALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY.
12. CCTV SURVEY TO BE CONDUCTED PRIOR TO COMMENCEMENT OF ANY WORKS TO DETERMINE THE CONDITION AND VERIFY LEVELS OF THE EXISTING FOUL AND SURFACE WATER PIPES/ MANHOLES. ANY SUB-STANDARD OR DEFECTIVE ELEMENTS OF THE EXISTING PIPES/MANHOLES TO BE REPORTED AND CORRECTED.
13. ALL SURFACE WATER DRAINAGE DETAILS TO BE IN ACCORDANCE WITH THE GREATER DUBLIN STRATEGIC DRAINAGE STUDY AND THE GREATER DUBLIN REGIONAL CODE OF PRACTICE FOR DRAINAGE WORKS.
14. ALL FOUL WATER DETAILS TO BE IN ACCORDANCE WITH THE IRISH WATER INFRASTRUCTURE STANDARD DETAILS AND CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE.
15. FOR PROPOSED DRAINAGE CONNECTIONS TO PUBLIC SERVICES PLEASE REFER TO DRAWING COO-ACM-00-00-DR-CE-00-0506.
16. FOR DRAINAGE SCHEDULE PLEASE REFER TO DRAWING COO-ACM-00-00-DR-CE-00-0507.

KEY

ISSUE/REVISION

	11/03/2022	ISSUED FOR PLANNING
	TE	DESCRIPTION

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60578132

SHEET TITLE

PROPOSED DRAINAGE LAYOUT SHEET 5 OF 5

SHEET NUMBER

COO-ACM-00-00-DR-CE-00-0505

ISO A1 594mm x 841mm
Approved: LS
Checked: MI
Drawn By: HB
Project Management Initials:
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Figure 11. Proposed drainage layout (Sheet 5 of 5)

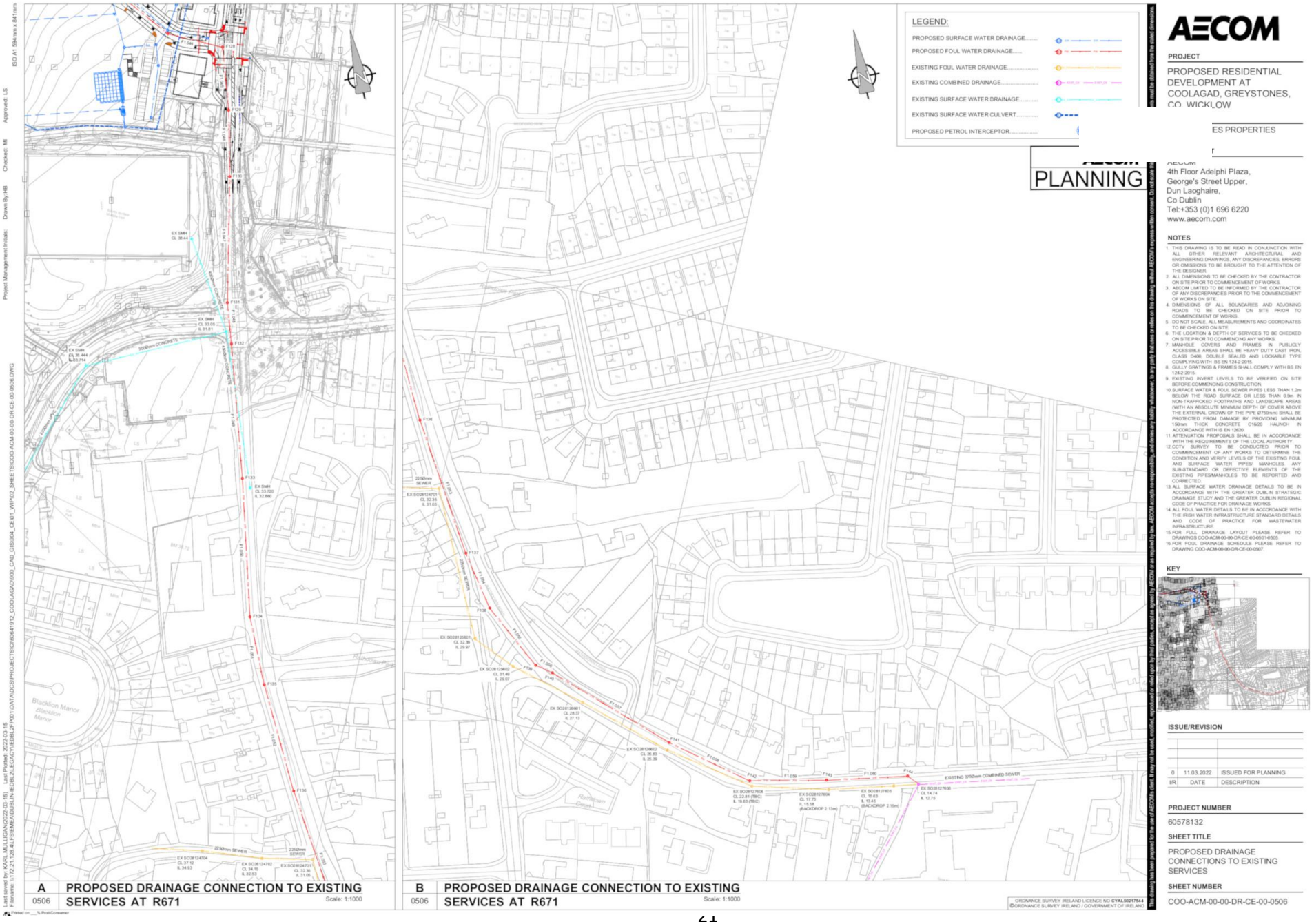

Figure 12. Proposed drainage connection to existing services at R671 (works proposed to install foul sewer.

Identification of Relevant European Sites (Natura 2000 sites)

The proposed development is located in a suburban/rural environment surrounded by roads and terrestrial buffers. The proposed works are not within a European site. The European sites within 15 km are seen in Figures 13 & 14 and Table 1. Their features of interest and the potential impact of the works on the features of interest, are seen in Table 2. There is an indirect pathway from the proposed development to Bray Head SAC via the watercourse on site and the surface water drainage network. Surface water from the site will discharge to the Greystones Stream, a proposed wetland area on site which has an existing underground pipe and the surface water network. Following the precautionary principle further screening of all European sites within 15km and those with direct or indirect pathways (Table 1) is carried out in Table 2. There is no direct or indirect pathway to European sites beyond 15km.

Several springs are located within the subject site and the Greystones Stream traverses the centre of the subject site from west to east, before discharging to the Irish Sea at Greystones North Beach (Figure 8). A spring is located just outside the site's north-west corner of the site and drains along the northern boundary. Another spring was identified within the heart of the proposed open space in the centre of site. This flows into an area of willow woodland. A high-water table was also identified on site. There is potential for pollutants, dust or silt laden run off to enter the watercourse (Greystones Stream) and drainage ditches on site, in addition to the Kilruddery/Deerpark Stream (north of the site) and the surface water network within the R761/R762, during construction and the Greystones Stream during operation and travel downstream in an easterly direction to the marine environment. The Killruddery_Deerpark_010 stream is located approximately 168 m from the northern boundary of the site along Redford Road. Given that this watercourse downhill from the site and along the main haul road that will be used for transport of materials to and from the site during construction, there is a potential for pollutants, chemicals, dust or silt laden run off to also enter this watercourse. Both the Greystones Stream and the Killruddery_Deerpark_010 watercourse outfall to the Irish Sea at Greystones North Beach. The Greystones Stream and the Killruddery_Deerparok_010 outfall approximately 455 m and 185 m from the Bray Head SAC.

Surface water drainage from the site will be discharged to the Greystones Stream, a proposed wetland area on site and the existing surface water network all of which ultimately discharges to the Irish Sea. Foul water drainage from the proposed development will connect to and upgraded foul sewer and then to the existing sewer that flows east towards Victoria Road, to the existing pumping station and then to Greystones Wastewater Treatment Facility. The water will be treated at Greystones Wastewater Treatment Facility before being discharged to the Irish Sea. There is no direct hydrological pathway from the development site to the designated European sites. All drainage networks enter the marine environment prior to reaching designated sites. There is an indirect pathway via the foul and surface water drainage networks to marine based European sites within 15 km.

Table 2. Proximity to designated sites of conservation importance

European Site Code	European Site	Distance	Direct or indirect Hydrological / Biodiversity Connection
Special Areas of Conservation			
IE000714	Bray Head SAC	667 m	**Yes**
IE000719	Glen of the Downs SAC	1.9 km	**No**
IE002249	The Murrough Wetlands SAC	4.3 km	**No**
IE000713	Ballyman Glen SAC	6.1 km	**No**
IE000716	Carriggower Bog SAC	6.3 km	**No**
IE000725	Knocksink Wood SAC	6.7 km	**No**
IE002122	Wicklow Mountains SAC	7.8 km	**No**
IE003000	Rockabill to Dalkey Islands SAC	10.2 km	**No**
Special Protected Areas			
IE004186	The Murrough SPA	5.3 km	**No**
IE004040	Wicklow Mountains SPA	7.4 km	**No**
IE004172	Dalkey Islands SPA	12.5 km	**No**

The initial screening of European sites within 15km of the subject site, their features of interest and the Source/Pathway/Receptor links between the works and the European site, with the potential to result in adverse effects (without mitigation measures) on each European site and features of interest, are seen in Table 2.

Table 3. Initial screening of European sites within 15km and European sites within 15km with potential of hydrological connection to the proposed development

European Site Code	Name	Screened IN/OUT	Details/Reason
Special Areas of Conservation			
IE000714	Bray Head SAC	**IN**	**Conservation Objectives** 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 **Features of Interest** Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] European dry heaths [4030] **Potential Impact** The development site is located within a suburban/rural area 667 m from the Bray Head SAC (Figure 13). This SAC is marine/coastal in nature and its features of interest are coastal habitats. There is an indirect pathway from the proposed development to this SAC via the watercourse on site and the surface water drainage network. Surface water from the site will discharge to the Greystones Stream, a proposed wetland area on site which has an existing underground pipe and the surface water network. Works also have the potential to impact on the Killruddery/Deerpark Stream and the surface water network in the R761/R762. All drainage networks and watercourses flow easterly to the marine environment at the North Beach in Greystones. In the absence of mitigation measures, silt or pollution could enter the watercourses and surface water networks which lead to the marine environment. There is potential for pollution of the watercourses to occur during these works. In addition, works are proposed on the road network, the surface water drainage of which leads to the marine environment via public surface water network and the Greystones Stream. Despite the discharging of watercourses and the public surface water network to the marine environment, due to the proximity of Bray Head SAC it is considered that there is an indirect hydrological pathway to this conservation site. The potential impacts on the features of interest of the Bray Head SAC (Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] and European dry heaths [4030]), in the absence of mitigation would be considered to be imperceptible. This is primarily as a result of the Qualifying interests being terrestrial habitats and the indirect pathway being via the marine environment. If the proposed works were to be carried out in the absence of mitigation within storm events where there is potential for seaspray to be transferred to the terrestrial habitats there is potential for fine silt to enter the terrestrial environment and deposit on plant material. In the absence of mitigation, runoff during site clearance, re-profiling, the construction and operation of project elements could impact on the Greystones Stream, Killruddery/Deerpark stream and surface water network, with water quality or downstream impacts on the marine environment. Impacts on these indirect pathways would be seen as the primary vector for impacts on this SAC. There is, therefore, potential for the proposed development to have a significant effect on the conservation objectives and features of interest of this SAC in the absence of mitigation measures. Mitigation measures are required to protect the Features of Interest of the SAC. **Stage 2 AA (Natura Impact Statement) is Required.**

European Site Code	Name	Screened IN/OUT	Details/Reason
Special Areas of Conservation			
IE000719	Glen of the Downs SAC	**OUT**	**Conservation objectives** 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 **Features of Interest** Old sessile oak woods with *Ilex* and *Blechnum* [91A0] **Potential Impact** The development site is located within a suburban area 1.9 km from the Glen of the Downs SAC (Figure 13). The development does not have a direct or indirect connection or pathway to the SAC. There is no intact biodiversity corridor from the proposed development to this SAC. The proposed development would not impact on the features of interest or the conservation objectives of this SAC. **No significant effects are likely.**
IE002249	The Murrough Wetlands SAC	**OUT**	**Conservation Objectives** 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: **Features of Interest** 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] * denotes a priority habitat **Potential Impact** The development site is located within a suburban area 4.3 km from the Murrough Wetlands SAC (Figure 13). There is no direct hydrological pathway from the proposed development site to the SAC. There is an indirect pathway from the site to the SAC via the foul and surface water networks. Surface water from the site will discharge to one of the watercourses on site, then to the existing surface water drainage network and will outfall to the marine environment at Greystones North Beach, approximately 4.9 km from this SAC. Foul water from the site will be connected to the existing network, it will be pumped to Greystones Wastewater Treatment Facility, where it will be treated prior to being discharged to the Irish Sea. Given the distance (4.3 km) from the proposed development site to this SAC, any pollutants, chemicals, dust or silt laden run off that enter the watercourse will settle, be dispersed and diluted to negligible levels in the marine environment before reaching this SAC. The construction and operation of the proposed development will not impact on the conservation interests of this SAC. **No significant effects are likely.**
IE000713	Ballyman Glen SAC	**OUT**	**Conservation Objectives**

European Site Code	Name	Screened IN/OUT	Details/Reason
			To maintain or restore the favourable conservation condition of Annex I habitat(s) and/or the Annex II species for which the SAC has been selected. **Features of Interest** Petrifying springs with tufa formation (Cratoneurion) [7220] Alkaline fens [7230] **Potential Impact** The development is located within a suburban area 6.1 km from the Ballyman Glen SAC (Figure 13). The development does not have a direct or indirect connection or pathway to the SAC. The proposed development would not impact on the features of interest or the conservation objectives of this SAC. **No significant effects are likely.**
IE000716	Carriggower Bog SAC	**OUT**	**Conservation Objectives** 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: **Features of Interest** Transition mires and quaking bogs [7140] **Potential Impact** The development is located within a suburban area 6.3 km from the Carriggower Bog SAC (Figure 13). The development does not have a direct or indirect connection or pathway to the SAC. The proposed development would not impact on the features of interest or the conservation objectives of this SAC. **No significant effects are likely.**
IE000725	Knocksink Wood SAC	**OUT**	**Conservation Objectives** 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 **Features of Interest** Petrifying springs with tufa formation (Cratoneurion) [7220] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0]. **Potential Impact** The development site is located within a suburban area 6.7 km from the Knocksink Wood SAC (Figure 13). The development does not have a direct or indirect connection or pathway to the SAC. The proposed development would not impact on the features of interest or the conservation objectives of this SAC. **No significant effects are likely.**
IE002122	Wicklow Mountains SAC	**OUT**	**Conservation Objectives** 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. **Features of Interest** Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or Isoeto-Nanojuncetea [3130] Natural dystrophic lakes and ponds [3160]

European Site Code	Name	Screened IN/OUT	Details/Reason
			Northern Atlantic wet heaths with *Erica tetralix* [4010] European dry heaths [4030] Apine and Boreal heaths [4060] Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] Blanket bogs (if active bog) [7130] Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*) [8110] Calcareous rocky slopes with chasmophytic vegetation [8210] Siliceous rocky slopes with chasmophytic vegetation [8220] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0] *Lutra lutra* (Otter) [1355] **Potential Impact** The development site is located within a suburban area 7.8 km from the Wicklow Mountains SAC (Figure 13). The development does not have a direct or indirect connection or pathway to the SAC. The proposed development would not impact on the features of interest or the conservation objectives of this SAC. **No significant effects are likely.**
IE003000	Rockabill to Dalkey Islands SAC	**OUT**	**Conservation Objectives:** 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. **Features of Interest** 1170 Reefs 1351 Harbour porpoise *Phocoena phocoena* **Potential Impact** The development site is located within a suburban area 10.2 km from the Rockabill to Dalkey SAC (Figure 13). There is no direct hydrological pathway from the proposed development site to the SAC. There is an indirect pathway from the proposed development to this SAC via the watercourses within and proximate to the site, in addition to foul and surface water networks. Surface water from the site will discharge to the watercourse on site and to the existing surface water drainage network. All drainage will ultimately outfall to the marine environment at Greystones North Beach, approximately 10.3 km from this SAC. Foul water from the site will be connected to the existing foul network in Greystones and will be discharged to the Greystones Wastewater Treatment Facility, where it will be treated prior to being discharged to the Irish Sea. Given the distance (10.2 km) from the proposed development site to this SAC, any pollutants, chemicals, dust or silt laden run off that enter the watercourse will settle and be dispersed and diluted in the surface water network, watercourses and the marine environment before reaching this SAC. The construction and operation of the proposed development will not impact on the conservation interests of this SAC. **No significant effects are likely**
Special Protected Areas			

European Site Code	Name	Screened IN/OUT	Details/Reason
IE004186	The Murrough SPA	**OUT**	**Conservation Objectives** 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. **Features of Interest** Red-throated Diver *Gavia stellate* [A001] Greylag Goose *Anser anser* [A043] Light-bellied Brent Goose *Branta bernicla hrota* [A046] Wigeon *Anas penelope* [A050] Teal *Anas crecca* [A052] Black-headed Gull *Chroicocephalus ridibundus* [A179] Herring Gull *Larus argentatus* [A184] Little Tern *Sterna albifrons* [A195] **Potential Impact** The development site is located 5.3 km from The Murrough SPA (Figure 14). The qualifying interests of this site were not noted foraging on site during field surveys (Table 1). There is no direct hydrological pathway from the proposed development site to the SPA. There is an indirect pathway from the proposed development to this SPA via the watercourses within and proximate to the site, in addition to foul and surface water networks. Surface water from the site will discharge to the watercourse on site and to the existing surface water drainage network. All drainage will ultimately outfall to the marine environment at Greystones North Beach, approximately 5.7 km from this SPA. Foul water from the site will be connected to the existing network, it will be pumped to Greystones Wastewater Treatment Facility, where it will be treated prior to being discharged to the Irish Sea. Given the distance (5.3 km) from the proposed development site to this SPA, pollutants, chemicals, dust or silt laden run off that enter the marine environment will settle, be dispersed and diluted in the surface water networks and the marine environment before reaching this SPA. The construction and operation of the proposed development will not impact on the conservation interests of this SPA. **No significant effects are likely.**
IE004040	Wicklow Mountains SPA	**OUT**	**Conservation Objectives** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. **Features of Interest** *Falco colombarius* (Merlin) [A098] *Falco peregrinus* (Peregrine) [A103] **Potential Impact** The site is 7.4 km from the Wicklow Mountains SPA (Figure 14). The development site is not an important foraging or roosting area for the features of interest of this site. There is no direct or indirect pathway to the proposed development site. The construction and operation of the proposed development will not impact on the conservation interests of the site. **No significant effects are likely.**

European Site Code	Name	Screened IN/OUT	Details/Reason
IE004172	Dalkey Islands SPA	**OUT**	**Conservation Objectives:** To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA **Features of Interest** Roseate Tern (*Sterna dougallii*) [A192] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] **Potential Impact** The development site is located within a rural/suburban area 12.5 km from this SPA (Figure 14). There is no direct hydrological pathway from the proposed development site to the SPA. The development site is not an important foraging or roosting area for the features of interest of this site. There is an indirect pathway from the proposed development to this SPA via the watercourses within and proximate to the site, in addition to foul and surface water networks. Surface water from the site will discharge to the watercourse on site and to the existing surface water drainage network. All drainage will ultimately outfall to the marine environment at Greystones North Beach, approximately 12.7 km from this SPA. Foul water from the site will be connected to the existing network, it will be pumped to Greystones Wastewater Treatment Facility, where it will be treated prior to being discharged to the Irish Sea. Given the distance (12.5 km) from the proposed development site to this SPA, any pollutants, chemicals, dust or silt laden run off that enter the watercourse will be dispersed and diluted in the marine environment before reaching this SPA. The construction and operation of the proposed development will not impact on the conservation interests of this SPA. **No significant effects are likely**

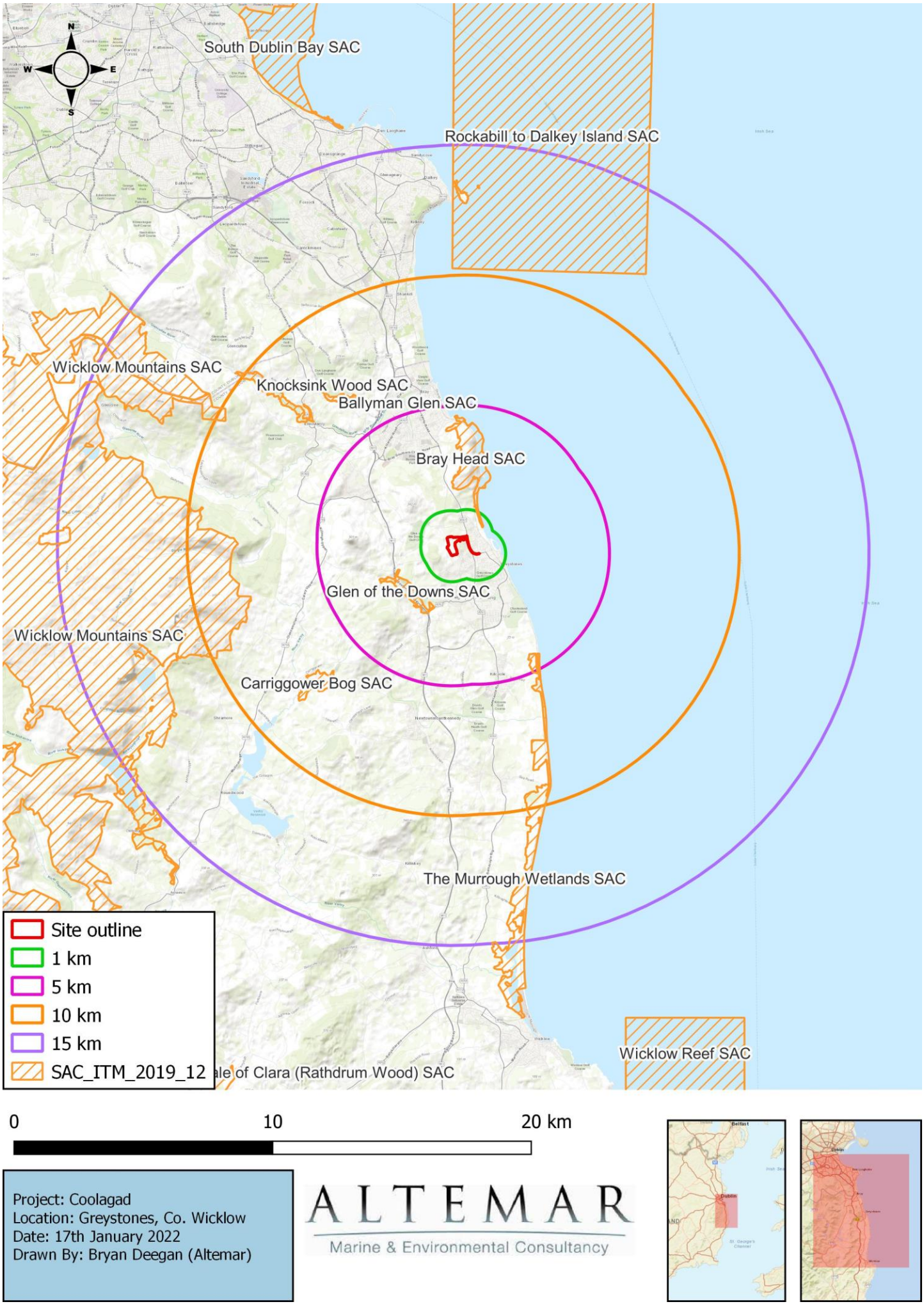

Figure 13. Special Areas of Conservation located within 15km of the proposed development

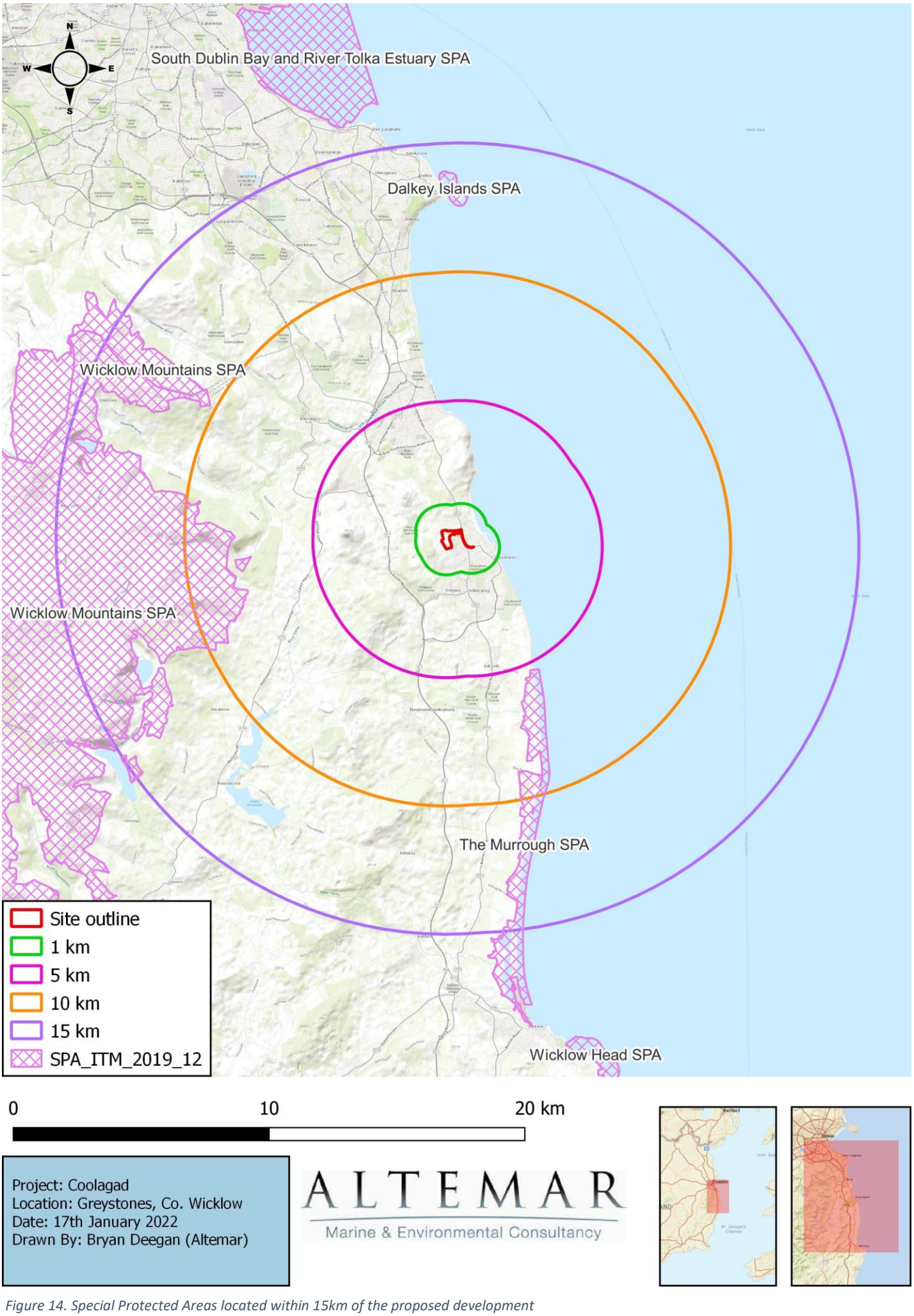

Figure 14. Special Protected Areas located within 15km of the proposed development

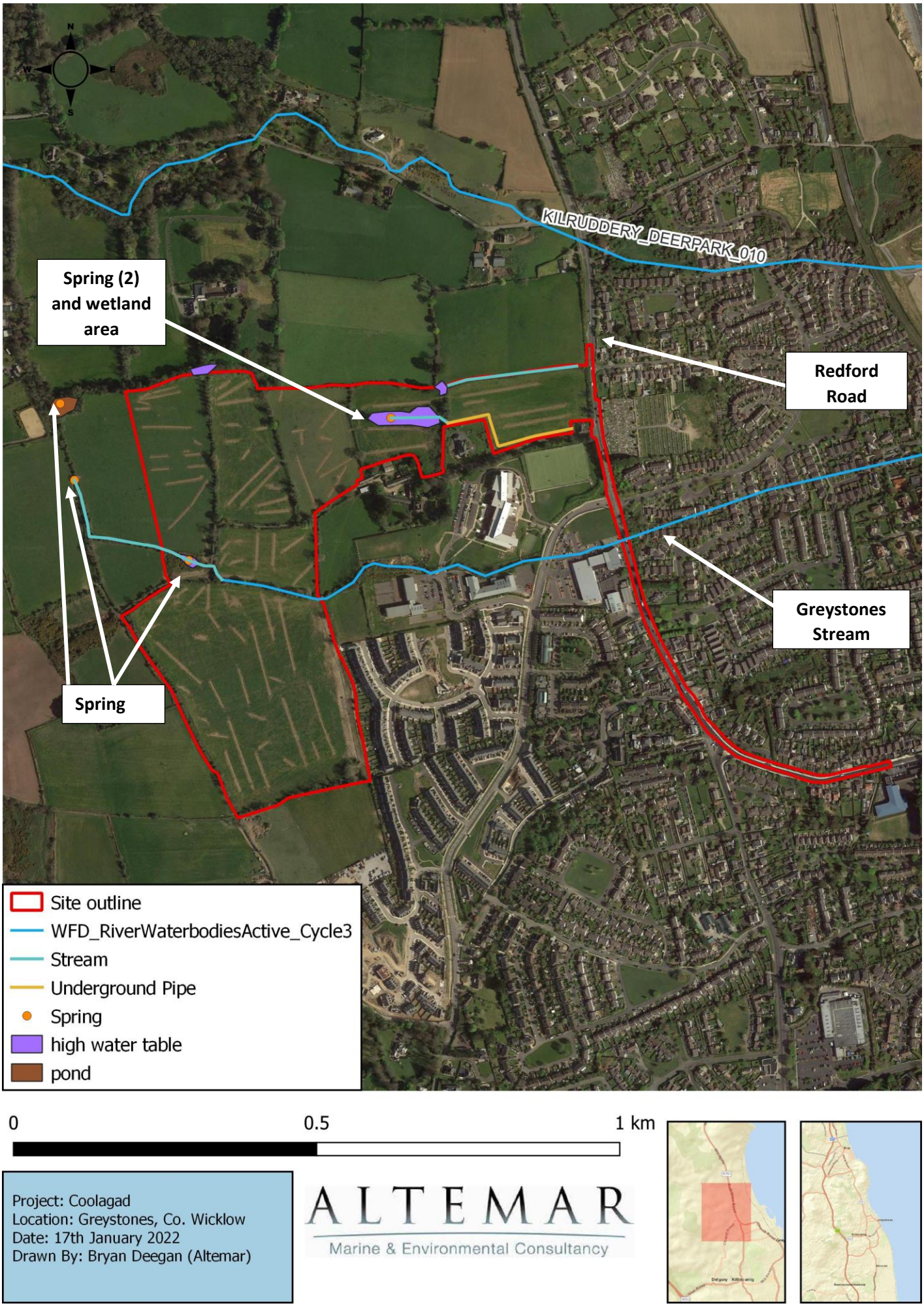

Figure 15. Waterbodies proximate to the proposed development site

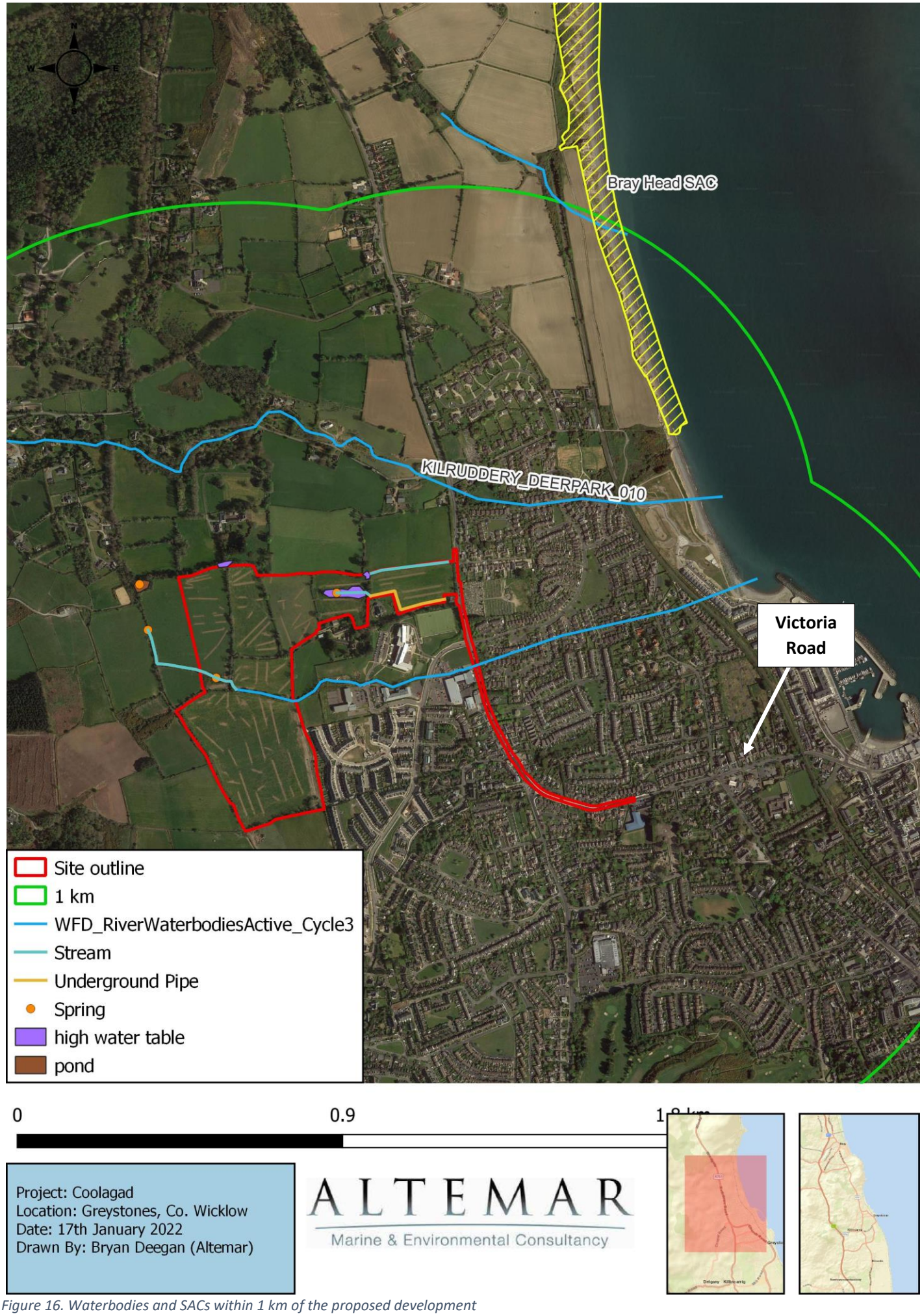

Figure 16. Waterbodies and SACs within 1 km of the proposed development

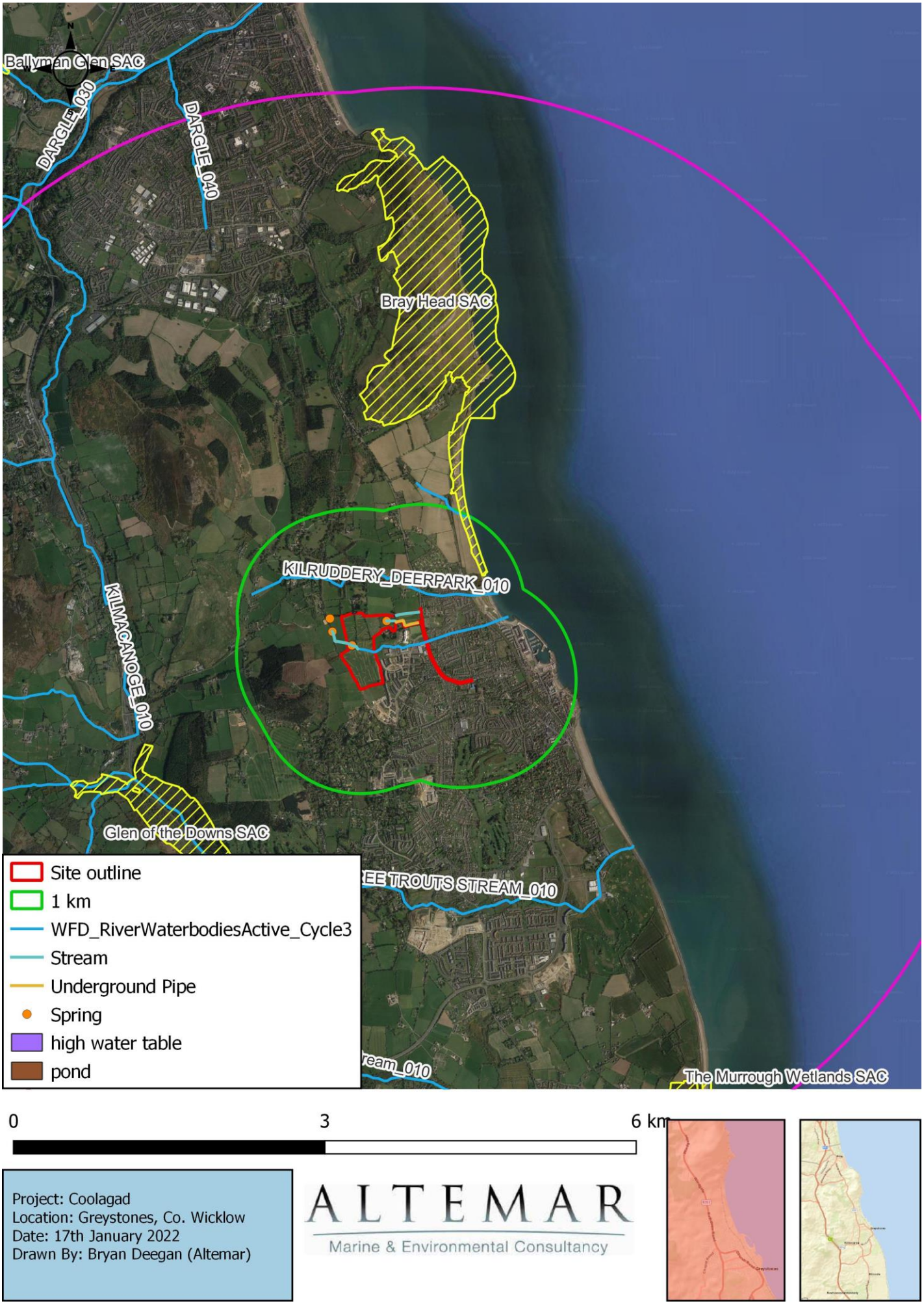

Figure 17. Waterbodies and SACs within 5 km of the proposed development

In-Combination Effects

There are several development proposals located in the areas surrounding the subject site that have been granted permission. The following is a list of planning application(s) as identified on the Department of Housing, Local Government and Heritage's 'National Planning Application Database' portal:

Ref. No.	Address	Proposal
138103	Coolagad, Blacklion, Greystones, Co. Wicklow	split level, part two storey, part three storey post primary school comprising general classrooms, special needs unit, specialist rooms, support teaching spaces, administration areas, PE hall and ancillary accommodation with a total combined floor area of c7997 sqm. The site works to the school grounds will consist of a new exit onto the Blacklion Road, the provision of car parking spaces, drop off and pick up facilities, bicycle parking, 4 no ball courts, service yard, external store, bin stores, playing pich, associated landscaping and boundary treatments
17461	Waverly, Blacklion, Greystones, Co. Wicklow	amendment to roadway and hammerhead at the south west corner of the site and the relocation of 34 - 47 Waverly Avenue as permitted under Planning REg Ref 14/1925, to include the change of floor and ridge levels together with associated site works
141773	Templecarrig House, Templecarrig Lower, Greystones, Co. Wicklow	subdivision of lands of Templecarrig House, Templecarrig Lower, Greystones; additional driveway with altered ground levels from within exisitng gateway; and works to existing 142sqm cottage adjacent to house to include renovations, 147sqm cottage adjacent to house to include renovations, 147sqm ground floor extensions, raising the roof to provide 110sqm dormer accommodation, alterations to outbuildings and replacement of septic tank with biocycle waste water treatment system and soil polishing filter
18371	Rathdown Lower/ Greystones Harbour & North Beach, Greystones, Co. Wicklow	alterations to previously approved plans of an integrated harbour / marina mixed development linked to a linear coastal public park providing leisure recreational, open space and marine facilities and mixed form residential, commercial, civic and social amenities centred around the former harbour. Alterations to previously approved Terrace Number 12 and alterations and redesign of previously approved public park. There is a decrease proposed of 3 units in the number of residential units approved
161269	Churchlands, Killincarrig, Delgany, Co. Wicklow	site of c 9.27 ha bounded generally by 'Delgany Wood' (Cherry Glade and Delgany Glen) to the south, 'Bellevue Heights' housing development and houses fronting Kindlestown Lower Road (R761) to the east, 'Kenmare Height' and 'Kindlestown Park' housing development to the north, St Laurences NS to the northwest, housing fronting Chapel Road (L1027) and Kindlestown House to the west. The development comprises the construction of 132 no dwellings, ranging in height from single storey to 2 storey dormer, each including 2 no car parking spaces on cirtilage and solar panel at roof level, housing mix to comprise 58 no 3 bed semi detached units, 14 no 4 bed semi detached units, 4 no 4 bed detached units, and 15 no 3 bed terraced units, all with optional single storey extension to rear and 37 no 3 bed terraced units adn 4 no 3 bed bungalows without

Ref. No.	Address	Proposal
		optional single storey extension to rear, and 37 no. 3 bed terraced units and 4 no 3 bed bungalows without optional single storey extension to rear, 4 no visitor car parking spaces, 1 no 2 storey creche (c342 sqmgfa), all ancillary and associated site development, landscaping and boundary works, inc redevelopment of existing playing pitch to provide 2 no grass pitchs, and 1 no all weather junior pitch and a mixed use games area, new surface car park to serve St Laurences NS and adjacent community facilities incl creche. New vehicular access through the site from Delgany Glen to Chapel Rd with assoc road improvement works. New greenroute pedestrian and bicycle route through the site from Delgany Glen to Chapel Rd. New pedestrian access to the south east of the site to facilitate link to the Kindlestown Lower Road (R761)
151307	Richview House, Bellevue Hill, Delgany, Co. Wicklow	89 two storey dwellings including 25 no. 4 bed detached dwellings, 28 no. 4 bed semi-detached dwellings, 18 no. 3 bed semi-detached dwellings, 6 no. 3 bed terraced dwellings and 12 no. 2 bed terraced dwellings; for the removal of existing stables, out-buildings and the partial removal and change of use of the existing dwelling (Richview House) to a creche (275sqm) including 8 no. surafce car parking space, bin storage, cycle parking and external play area; for the construction of an ESB substation and switchroom (25sqm); for all boundary walls and fences, proposed vehicular and pedestrian entrances to the development off Bellevue Hill and associated signage, internal estate road, visitor surface car parking, footpaths, hard and soft landscaping and all site services above and below ground including connection to existing services.
138744	Bellevue, Delgany, Co. Wicklow	P.R.R. 08/250 (18 hole golf course, practice facilities, part single storey part 2 storey clubhouse, car park with provision of 122 car spaces and provision for 2 coach spaces, seperate maintenance facility & associated site development works, access road, service and landscaping, access from existing road entrance)
20545	Richview House, Bellevue Hill, Delgany, Co. Wicklow	amendments to the previously permitted residential development (An Bord Pleanala Reference No. PL27.248401 / Wicklow Co. Co. File Register Reference No. 15/1307). The amendments will consist of the following: A) An amendment to the layout of 36 no. previously permitted dwellings (no. 19 to 34 inclusive, 54 to 60 inclusive and 72 to 84 inclusive) for the construction of 10 no. additional dwellings. The amended development will consist of 92 no. new single, two and three storey dwellings including 5 no. 4 bed detached dwellings, 14 no. 4 bed semi-detached dwellings, 44 no. 3 bed semi-detached dwellings, 28 no. 3 bed terraced dwellings and 1 no. 2 bed terraced dwelling. The proposal includes the omission of previously permitted houses types A, B, E & F and the inclusion of new houses types J1, M1 & N; B) The position of previously permitted dwelling no's 43 to 53 inclusive are to be moved south. The alignment of the

Ref. No.	Address	Proposal
		internal estate road and public open space in front of these dwellings is to be amended accordingly; C) The position of the previously permitted northern site boundary wall and fencing is proposed to be moved; D) The proposed alteration to previously permitted house type H (previously permitted dwelling no's 47 , 48 & 49). The 2 no. type H end of terrace 3 bed dwellings are to be reduced in gross floor area from 103.8sqm to 101.7sqm; E) The previously permitted 3m high boundary wall with the convent land on the southeast site boundary is to be reduced in height to provide a 1.8m high capped and rendered blockwork wall; F) A 10sqm extension to the rear of the previously permitted creche. The new gross floor area is to be 154sqm with a proposed increase in childcare capacity from 23 to 25 child spaces
161301	Churchlands, Killincarrig, Delgany, Co. Wicklow	development bounded generally by 'Delgany Wood' (Cherry Glade and Delgany Glen) to the south, 'Bellevue Heights, housing development and houses front Kindlestown Lower Road (R761) to the east, 'Kenmare Heights' and 'Kindlestown Park' housing developments to the north, St Laurences NS to the northwest, housing fronting Chapel Road (l1027) and Kindlestown House to the west. The development comprises the construction of 132 no dwellings, ranging in height from single storey to 2 storey dormer, each including 2 no car parking spaces on curtilage and solar panel at roof level. Housing mix to comprise 58 no 3 bed semi detached units, 14 no 4 bed semi detached units, 4 no 4 bed detached units, 15 no 3 bed terraced units, all with optional single storey extension to rear, and 37 no 3 bed terraced units and 4 no 3 bed bungalows without optional single storey extension to rear, 4 no visitor car parking spaces, 1 no 2 storey creche (c342 sqm), all ancillary and associated site development, landscaping and boundary works, including redevelopment of existing playing pitch to provide 2 no grass pitches (60m x 90m each), and 1 no all weather junior pitch and a mixed use games area (27m x 90m), new surface car parking (72 no spaces and set down areas) to serve St Laurences NS and adjacent community facilities including creche. New vehicular access through the site from Delgany Glen to Chapel Road with associated road improvement works. New greenroute pedestrian and bicycle route through the stei from Delgany Glen to Chapel road, new pedestrian access to the south east of the site to facilitate link to the Kindlestown Lower Road (R761)
138178	Stylebawn, Delgany, Co. Wicklow	extend the appropriate period of a permission - 07/1150 - construction of a residential development with an overall gross floor area of 4113 sqm comprising 11 no residential dwelling houses comprising of 1 no single level house, 6 no two storey houses and 4 no three storey split level houses, all with private gardens and off street car parking, vehicular and pedestrian entrance to the site via a new entrance

Ref. No.	Address	Proposal
		from the R762 road, a widening of the R762 carriageway to provide for a 6 metre carriageway and a 2 metre pedestrian footpath on the south side of the R762 along the frontage of the subject site, a new internal road including the construction of a new timber vehicular bridge across the Three Trouts Stream, all associated site development works including landscaping and pumping station
126029	Cloonlumney, Coolagad, Delgany, Co. Wicklow	demolition of a two storey side extension and construction of a two storey side extension, modifications to existing external openings and main pitched roof, internal alterations and associated site works for dwelling house

In relation to Planning Ref. **18371**, An Appropriate Assessment Screening Report was carried out by Biosphere Environmental Services. The report states that: '*The potential effects that may arise from construction and operation of the project on the Natura 2000 network have been examined by considering the potential for significant effects, alone or in-combination with other projects, on the Bray Head SAC (the only designated European site which conceivably could be affected by the project).*

On the basis of the findings of this screening report, it is concluded that the project:

(i) Is not directly connected with or necessary to the management of a Natura 2000 site, and
(ii) *Significant impacts on the Natura 2000 network are not foreseen*.'

No significant projects are proposed or currently under construction that could potentially cause in combination effects on European sites.

Given this, 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. It is concluded that no significant effects on European sites will be seen because of the proposed development alone or in combination with other projects.

Appropriate Assessment Screening Conclusions

An initial screening of the proposed project, using the precautionary principle, without the use of any mitigation measures and assessing 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

- IE000719 Glen of the Downs SAC
- IE002249 The Murrough Wetlands SAC
- IE000713 Ballyman Glen SAC
- IE000716 Carriggower Bog SAC
- IE000725 Knocksink Wood SAC
- IE002122 Wicklow Mountains SAC
- IE003000 Rockabill to Dalkey Islands SAC

Special Protection Areas

- IE004186 The Murrough SPA
- IE004040 Wicklow Mountains SPA
- IE004172 Dalkey Islands SPA

The ZoI of the proposed project would be seen to be restricted to the site outline with potential for localised noise, dust, light impacts during construction, in addition to downstream effects on the marine environment and a European site (Bray Head SAC). Drainage from site, both foul and surface water during construction and operation, would be seen as the outputs, in addition to the watercourses within and adjacent to the site, could potentially extend the potential ZoI into the marine environment. There is also potential for pollutants, chemicals, dust or silt laden run off to enter the watercourse to the north of the site boundary (Killruddery_Deerpark_010) which is adjacent to the main haul road (Redford Road) for the proposed development. The Greystones Stream and the Killruddery_Deerpark_010 outfall to the marine environment approximately 455 m and 185 m respectively, from Bray Head SAC. There is, therefore, potential for the proposed development site to impact on the conservation objectives of the features of interest of this SAC.

Acting on a strictly precautionary basis, an NIS is required in respect of the effects of the project on the Bray Head SAC 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 Bray Head SAC.

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

A Natura Impact Statement is required for the proposed development.

Data used for the AA Screening

NPWS site synopses and Conservation objectives of sites within 15km were examined. European sites beyond 15km have no direct connection to the proposed development site. The most recent SAC and SPA boundary shapefiles were downloaded and overlaid on Bing road map and satellite imagery. Site visits were carried out to determine if the site contained possible threats to a designated European site or any European species or habitats. An EIAR has also been prepared for the proposed development.

References

The following references were used in the preparation of this AA screening report.

1. Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities March 2010.
2. Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government 2009; http://www.npws.ie/publications/archive/NPWS_2009_AA_Guidance.pdf
3. Managing NATURA 2000 Sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC, European Commission 2000; http://ec.europa.eu/environment/nature/Natura2000/management/docs/art6/provision_of_art6_en.pdf
4. Assessment of Plans and Projects Significantly Affecting NATURA 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC; http://ec.europa.eu/environment/nature/Natura2000management/docs/art6/Natura_2000_assess_en.pdf
5. 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; http://ec.europa.eu/environment/nature/Natura2000/management/docs/art6/guidance_art6_4_en.pdf
6. Guidance document on the implementation of the birds and habitats directive in estuaries and coastal zones with particular attention to port development and dredging; http://ec.europa.eu/environment/nature/Natura2000/management/docs/guidance_doc.pdf
7. The Status of EU Protected Habitats and Species in Ireland. http://www.npws.ie/publications/euconservationstatus/NPWS_2007_Conservation_Status_Report.pdf
8. NPWS (2017) Conservation Objectives: Bray Head SAC 000714. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
9. NPWS (2020) Conservation Objectives: Glen of the Downs SAC 000719. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
10. NPWS (2021) Conservation Objectives: The Murrough Wetlands SAC 002249. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
11. NPWS (2019) Conservation Objectives: Ballyman Glen SAC 000713. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
12. NPWS (2019) Conservation Objectives: Carriggower Bog SAC 000716. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
13. NPWS (2021) Conservation Objectives: Knocksink Wood SAC 000725. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
14. NPWS (2017) Conservation Objectives: Wicklow Mountains SAC 002122. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
15. NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
16. NPWS (2021) Conservation objectives for The Murrough SPA [004186]. Generic Version 8.0. Department of Housing, Local Government and Heritage.
17. NPWS (2021) Conservation objectives for Wicklow Mountains SPA [004040]. Generic Version 8.0. Department of Housing, Local Government and Heritage.
18. NPWS (2021) Conservation objectives for Dalkey Islands SPA [004172]. Generic Version 8.0. Department of Housing, Local Government and Heritage.
19. 25. EC (2021) Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC https://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

Appendix I Habitat and flora assessments

Habitat and flora assessments were carried out on the 31st August 2020 and the 31st August 2021. Habitats within the proposed development site were classified according to Fossitt (2000) (Figure AI-1) based on the 31st August 2021 survey and the flora species noted within each habitat are described.

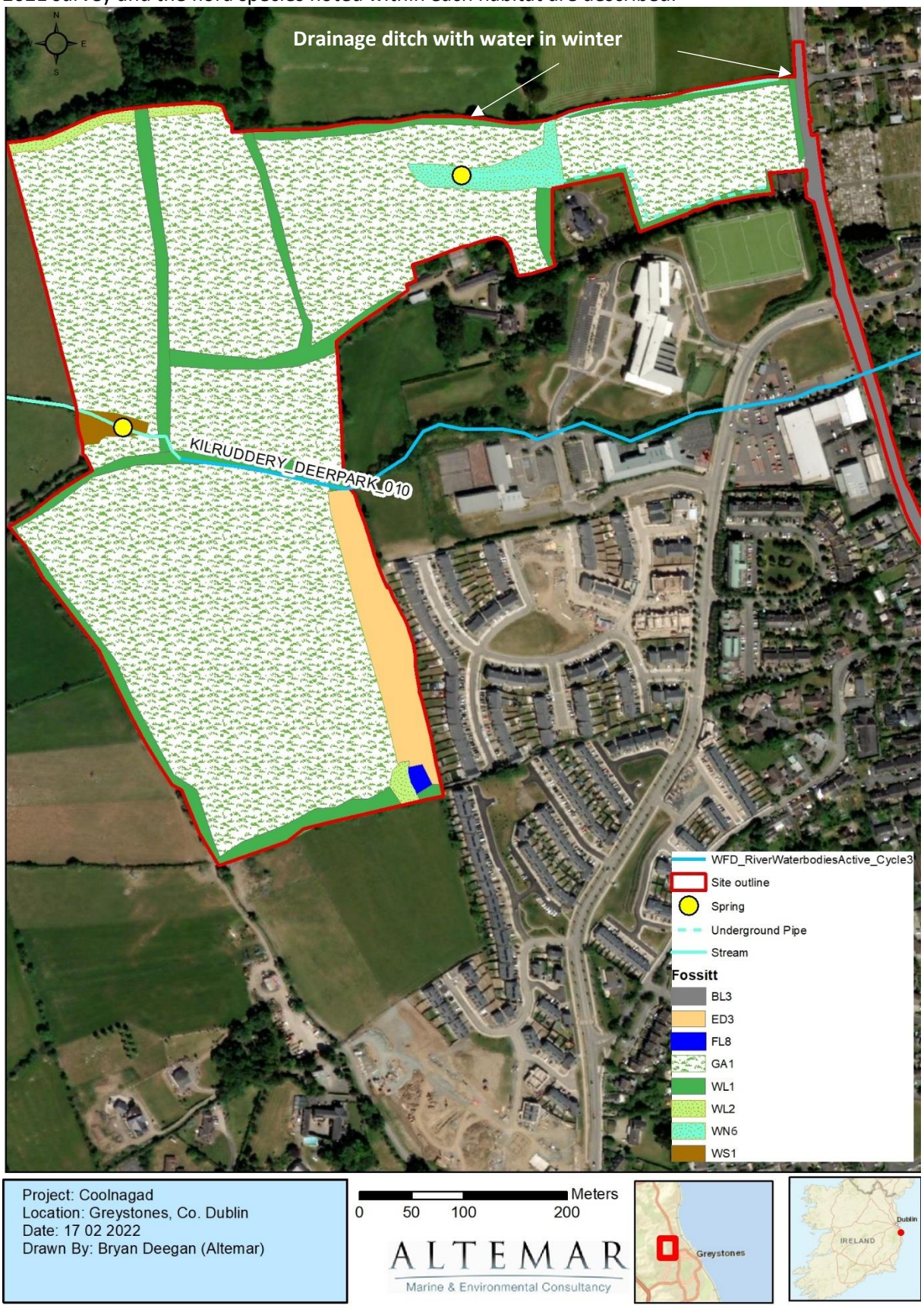

Figure AI-1. Fossitt Habitats on site (See habitat descriptions for Fossitt codes below)

Plate 1. Agricultural grassland.

GA1-Improved Agricultural Grassland

The vast majority of the proposed development site consists of agricultural grassland which forms part of an active farm. As seen if Figure 4.6 the proposed site comprises of six fields divided by hedgerows. Flora species in GA1 consisted of creeping buttercup (*Ranunculus repens*), lesser stitchwort (*Stellaria graminea*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), dandelion (*Taraxacum spp*.), daisy (*Bellis perennis*), Common Ragwort (Jacobaea vulgaris), plantains (*Plantago spp*.), thistles (*Cirsium vulgare*), docks (*Rumex spp*.) Lesser Centaury (Centaurium pulchellum) and nettle (*Urtica dioica*). At the edges of this habitat Rosebay Willowherb (*Epilobium angustifolium*), gorse (*Ulex europaeus*), bramble (*Rubus fructicosus*) and oxeye Daisy (Leucanthemum vulgare).

Plate 2. Hedgerows.

WL1- Hedgerows

A series of native hedgerows are located within and around the boundary of the site. These appeared to have been un managed for several years and has a bramble scrub at their base. Species including elder (*Sambucus nigra)*, blackthorn (*Prunus spinosa)*, hawthorn *(Crataegus monogyna),* holly *(Ilex aquifolium),* dog-rose *(Rosa canina), Gorse (Ulex europaeus),* bramble *(Rubus fruticosus agg.),* ash *(Fraxinus excelsior),* ivy *(Hedera helix),* hazel (Corylus avellana), goat willow (Salix caprea), sycamore (*Acer pseudoplatanus*), wild cherry (*Prunus avium*), honeysuckle *(Lonicera periclymenum)* and cleavers *(Galium aparine)* were noted. Hedgerows in the proximate to development also included cotoneaster (*Cotoneaster Sp*), bracken (*Pteridium aquilinum*), griselinia (*Griselinia littoralis*) and buddleia (*Buddleia davidii*).

WL2 Treelines

The north eastern boundary of the site consists of a tall treeline. Tree species in this area included sycamore (*Acer pseudoplatanus*), beech (*Fagus sylvatica*) Scots pine (*Pinus sylvestris*), ash (*Fraxinus excelsior*), silver fir (*Abies alba*), hornbeam (*Carpinus betulus*). In addition to the taller trees were hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), ivy (*hedera helix*) nettle (*Urtica dioica*), dandelion *(Taraxacum spp*.), plantains (Plantago spp.), thistles (*Cirsium arvense & C. vulgare*), docks (Rumex spp.), bramble (*Rubus fructicosus*) and lords and ladies (*Arum maculatum*). During winter months the water table appeared quite high in this area and there is a potential overflow pathway from the pond to the west of the site along the northern boundary of the site to the Greystones Road.

WS1 (Scrub)

In the central portion of the western boundary of site a small area contained scrub (WS1)(Fossitt, 2000). This area appeared to be an abandoned area of land that is poached by cattle. This area is dominated by gorse (*Ulex europaeus*). It is important to note that a spring (the official EPA source of the Greystones Stream) is within the scrub area.

Plate 3. Recolonising bare ground.

ED3 Recolonising Bare ground.

Areas of the site had begun to recolonise following site recent works in the past. Based upon an examination of recent satellite imagery this area was a hedgerow up to June 2018 and works had been carried out in this area between 2018 and 2020. Species noted included rape (*Brassica napus*), oxeye daisy (*Leucanthemum vulgare*), great willowherb *(Epilobium hirsutum*), thistles (*Cirsium arvense, C. vulgare*), common ragwort (*Senecio*

jacobaea), moss (*Spagnum sp*.), docks (*Rumex spp*.), plantains (*Plantago sp*p.), nettle (U*rtica dioica*), cat's-ear (*Hypochaeris radicata*) and common fumitory (*Fumaria officinalis*).

Plate 4. Eroding Upland rivers

FW1- Eroding Upland rivers

The Greystones Stream travels through the site. The official source (EPA) of the stream is within a scrub area within the proposed development site. However, a spring is noted further uphill (Figure 5.5.) and water flows from the spring at a high elevation to the official source. Even though the sping within the scrub area is considered to be the official source (EPA) it is evident that the spring further uphill is the actual source of the stream. As a result the 10m buffer for biodiversity protection that has been applied to the watercourse will also apply to the flow of water from the spring uphill from the official commencment of the watercourse.

The stream passing through the site is small, fast flowing and is heavily tunneled. The bed of the stream consists of gravel and rocks. No instream biodiversity was noted. It should be noted however, that this stream is of little fisheries value, as it is heavily tunnelled, culverted downstream (under the Lidl shopping centre, sections of Redford Park and proximate roads), and descends a very steep gradient into the marine envieonment just north of Darcy's Field in Greystones where sedimentary cliffs are suffering from erosion. It is possible, as the watercourse is small, spring fed and at the top of its catchment, that the channel may become dry over long extended dry periods. However, this was not observed during the site assessments. Notwithstanding this, the watercourse does provied an important biodiversity corridor through the site, and a minimum of a 10m biodiversity corridor is required under Inland Fisheries Guidance.

Plate 5. Other artificial lakes and ponds.

FL8- Other artificial lakes and ponds.

On the south eastern corner of the site is a small pond area in what appears to be a small disused quarry. The water in this pond appears to fluctuate as no emergent or aquatic vegetation was noted and terrestrial vegetation was submerged on one occasion. No biodiversity was noted in this pond. However, the pond could potentially form a from breeding site for frogs.

Plate 6. Wet willow-alder-ash woodland

WN6-Wet willow-alder-ash woodland.

Located in the centre of the site is a small area of the habitat Wet willow-alder-ash woodland. This broad category includes woodlands of permanently waterlogged sites that are dominated by willows (Salix spp.). This area is fed by a spring (Figure 4.6). During the summer this area goes dry while in winter (Plate 6) the area is waterlogged. Other species included Yellow Iris (*Iris pseudacorus*) and mosses (sphagnum). This area would be considered to be a locally important wetland area due the potential for the habitat to support frogs and a nesting habitat for breeding birds.

Invasive Species

No invasive plant or animal species listed under the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) Section 49, the Third Schedule: Part 1 Plants, Third Schedule: Part 2A Animals were noted on site. No terrestrial or aquatic invasive species such as Japanese knotweed, giant rhubarb, Himalayan balsam, giant hogweed etc. that could hinder removal of soil from the site during groundworks were noted.

Fauna Assessments

Mammal assessments were carried out on the 6th November 2020, 26th February 2021, and the 7th January 2022. Bat surveys including bat emergent/detector survey were also carried out on the 31st August 2020 and the 31st August 2021.

Terrestrial Mammals

Three mammal assessments were carried out. No signs of badger activity or an active sett were noted on site. Tracks of sika deer (*Cervus nippon*), rabbit (*Oryctolagus cuniculus*), fox (*Vulpes vulpes*) were noted on site. In addition, sika deer (*Cervus nippon*) were observed in the field nearest to the R761 and have been noted frequently on site by the landowner. Sika deer are considered non-native but are protected under the Wildlife Act. Sika deer can be hunted under a section 29 licence granted by the National Parks and Wildlife Service. No mammal species of conservation importance have been noted on site during surveys or by NBDC or NPWS data.

Amphibians and Reptiles

No amphibians or reptiles were noted on site. However, given the fact that there is a watercourse, springs, wet woodland and a pond on site, it is highly likely that frogs are present on site. These habitats would be considered locally important primarily due to the likelihood of the habitats to support frogs.

Birds

Birds noted on site were recorded during site assessments. Specific wintering bird walkover assessments were carried out on 6th November 2020, 26th February 2021, 27th March 2021, 7th January 2022 and 20th January 2022. The following bird species were noted on site during the site assessments (**Table AI-1**). It should be noted that the qualifying interests of designated sites were not noted on site during site assessments. It is not considered that the proposed development site is an ex-situ site for designated sites. The site consists of relatively long agricultural grassland. No qualifying interests were identified on the site.

Common Name	Scientific Name	Conservation Status[4]
Woodpigeon	*Columba palumbus*	Green
Robin	*Erithacus rubecula*	Green
Great Tit	*Parus major*	Green
Wren	*Troglodytes troglodytes*	Green
Rook	*Corvus frugilegus*	Green
Wren	*Troglodytes troglodytes*	Green
Jackdaw	*Corvus monedula*	Green
Robin	*Erithacus rubecula*	Green

[4] Birds of Conservation Concern in Ireland 2020-2026 https://birdwatchireland.ie/app/uploads/2021/04/BOCCI4-leaflet-2-1.pdf

Common Name	Scientific Name	Conservation Status[4]
Chaffinch	Fringilla coelebs	Green
Hooded Crow	*Corvus cornix*	Green
Magpie	*Pica pica*	Green
Chiffchaff	*Phylloscopus collybita*	Green
Goldcrest	*Regulus regulus*	Green
Blackbird	Turdus merula	Green
Song Thrush	*Turdus philomelos*	Green
Redwing	*Turdus iliacus*	Green
Blue Tit	*Cyanistes caeruleus*	Green
Coal Tit	*Periparus ater*	Green
Goldfinch	*Carduelis carduelis*	Green
Dunnock	*Prunella modularis*	Green
Buzzard	*Buteo buteo*	Green

Table AI-1. ***Species of Birds noted during on-site surveys.***

Bats

The bat assessment is seen in the Technical Appendices of the EIAR. There were no seasonal or climatic constraints as survey was undertaken within the active bat season in good weather conditions with daytime temperatures of greater than 10^{o}C after dark. Winds were very light and there was no rainfall. No evidence of a definitive bat roosts were found in any of the onsite trees. However, several trees of bat roosting potential were noted on site. Foraging activity of three bat species (soprano pipistrelle (*Pipistrellus pygmaeus*), Leisler's bat (*Nyctalus leisleri*) and common pipistrelle (*Pipistrellus pipistrellus*), were noted on site. Foraging activity was noted primarily along treelines and hedgerows wit activity being greater on the northern portion of the site. Please see Appendix I for further information.

Discussion Species and habitats

As can be seen from **Figure AI-1** the proposed development site consists primarily of Improved agricultural grassland (GA1) and hedgerows (WL1), scrub (WS1) and treelines (WL2). No flora or habitats of National or international conservation importance were noted on site during the surveys. No invasive flora species were noted on site. No flora species of conservation importance or invasive species were noted on site by the NPWS or NBDC or during site surveys. No amphibians or reptiles were noted on site. However, given the favourable habitats on site for frogs it would be expected that the wetland, riparian, spring and pond habitats would be locally important. Native hedgerows were noted on site. These would also be seen to be locally important to biodiversity. In relation to bird species no bird species on Annex I of the EU Birds Directive were noted on site by NPWS or NBDC. The watercourse (acting as a biodiversity corridor), drainage ditches, springs, wetland, pond, hedgerows and treelines would be seen as the most important habitats on site. These elements form refuges and food sources for local biodiversity and provide biodiversity corridors to the surrounding areas. It should be noted that prior to the commencement of the design stage of this project, the local biodiversity value of these habitats was noted. As a result, the proposed development has been designed around the retention of these habitats and biodiversity corridors where possible.