Carrickmines-Shanganagh River Flood Relief Scheme

AA Screening

Final Report

February 2025

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This report relates to the Carrickmines Shanganagh Flood Relief Scheme commissioned by Dún Laoghaire Rathdown County Council (DLRCC), on behalf of the Office of Public Works.

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Purpose

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Abbreviations

AA	Appropriate Assessment
AEP	Annual Exceedance Probability
BoCCI	Birds of Conservation Concern in Ireland
CEMP	Construction Environmental Management Plan
CFRAM	Catchment Flood Risk Assessment and Management
CIEEM	Chartered Institute of Ecology and Environmental Management
DLRCC	Dún Laoghaire Rathdown County Council
DoEHLG	Department of Environment, Heritage and Local Government
EC	European Communities
EcIA	Ecological Impact Assessment
ECoW	Ecological Clerk of Works
EPA	Environmental Protection Agency
EU	European Union
FRS	Flood Relief Scheme
GIS	Geographical Information Systems
IFI	Inland Fisheries Ireland
INNS	Invasive Non-Native Species
LAP	Local Area Plan
NBDC	National Biodiversity Data Centre
NPWS	National Parks and Wildlife Service
QI	Qualifying Interest
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SEL	Sound Exposure Level
SoP	Standard of Protection
SPA	Special Protection Area
SuDS	Sustainable Drainage System
TTS	Temporary Threshold Shift
WFD	Water Framework Directive
WWTP	Waste Water Treatment Plant
ZoI	Zone of Influence

Executive Summary

JBA Consulting Engineers and Scientists Ltd. has been commissioned by Dún Laoghaire Rathdown County Council (DLRCC) to prepare an Appropriate Assessment Screening Report for the proposed Flood Relief Scheme (FRS) of the Carrickmines-Shanganagh Rivers.

The Proposed Project is not directly connected with, or necessary to the management of any Natura 2000 site and may have potential to have likely significant effects upon the Natura 2000 sites identified in Section 4. Therefore, the proposed project is subject to the requirements of an Appropriate Assessment.

This screening report assesses the likely significant effects on Natura 2000 sites within the Zone of Influence of the works along the Carrickmines-Shanganagh rivers in relation to the proposed Flood Relief Scheme. Three source > pathway > receptor chains have been examined to assess the likely impact of the Scheme on Natura 2000 sites via surface water, groundwater and land /air pathways.

It is concluded that the possibility of any likely significant effects on the Natura 2000 sites within the ZoI, whether arising from the project itself or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.

1 Introduction

1.1 Background

This report, which contains information to assist the competent authority to undertake a screening for Appropriate Assessment (AA) in respect of the proposed Carrickmines-Shanganagh River Flood Relief Scheme (FRS) of the Carrickmines-Shanganagh study area, has been prepared by JBA Consulting Engineers and Scientists Ltd. (hereafter JBA) on behalf of Dún Laoghaire Rathdown County Council (DLRCC). It provides information on, and assesses the potential in view of best scientific knowledge for the proposed Carrickmines-Shanganagh Flood Relief Scheme (FRS) to have likely significant effects, either individually or in combination with other plans or projects, on any Natura 2000 site.

Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (the "Habitats Directive") requires that, any plan or project not directly connected with or necessary to the management of European sites, but likely to have significant effects thereon, either individually or in combination with other plans or projects, shall be subject to AA of its implications for the European sites in view of their conservation objectives. The requirements of Article 6(3) of the Habitats Directive have been transposed into Irish law by Part XAB of the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).

The proposed works will take place at specific localised locations along the Carrickmines-Shanganagh study area.

1.2 Legislative Context

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora, known as the 'Habitats Directive' - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status. Articles 3 - 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000 sites. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79 / 409 / EEC).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites. Article 6(3) establishes the requirement for Appropriate Assessment:

"*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public*."

Article 6(4) deals with the steps that should be taken when it is determined, as a result of Appropriate Assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in such a case.

Article 6(4) states:

"*If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

Where the site concerned hosts a priority natural habitat type and / or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of *inter alia* the European Communities (Birds and Natural Habitats) Regulations 2011-2021 (S.I. No. 477 / 2011) as amended.

1.3 Appropriate Assessment Process

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DEHLG) (2009, rev 2010). Office of the Planning Regulator (OPR) produced a Practice Note in 2021, PN01 - Appropriate Assessment Screening for Development Management (OPR, 2021). These guidance documents identify a staged approach to conducting an AA, as shown Figure 1-1.

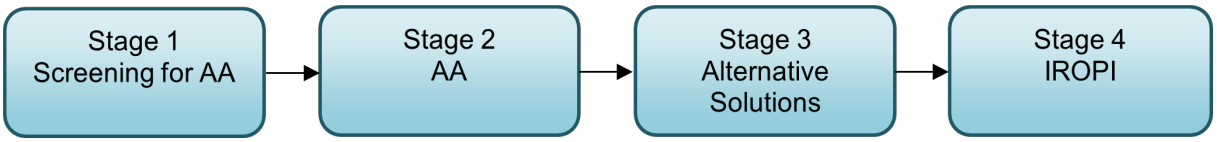

Figure 1-1: The Appropriate Assessment Process (from: Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, DEHLG, 2010)

1.3.1 Stage 1 - Screening for AA

The initial, screening stage of the Appropriate Assessment is to determine:

whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation

if it is likely to have a significant effect on the European designated site, either individually or in combination with other plans or projects.

For those sites where, potential likely significant effects are identified, either alone or in combination with other plans or projects, further assessment is necessary to determine if the proposals will have an adverse effect on the integrity of a European designated site, in view of the site's conservation objectives (i.e., the process proceeds to Stage 2).

1.3.2 Stage 2 - AA

This stage requires a more in-depth evaluation of the plan or project, and the potential direct and indirect effects of them on the integrity and interest features of the European designated site(s), alone and in-combination with other plans and projects, taking into account the site's conservation objectives. Where required, mitigation or avoidance measures will be suggested.

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation

cannot be achieved, then alternative solutions will need to be considered (i.e., the process proceeds to Stage 3).

1.3.3 Stage 3 - Alternative Solutions

Where adverse effects on the integrity of Natura 2000 sites are identified, and mitigation cannot be satisfactorily implemented, alternative ways of achieving the objectives of the plan or project that avoid adverse effects need to be considered. If none can be found, the process proceeds to Stage 4.

1.3.4 Stage 4 - IROPI

Where adverse effects of a plan or project on the integrity of Natura 2000 sites are identified and no alternative solutions exist, the plan will only be allowed to progress if imperative reasons of overriding public interest can be demonstrated. In this case compensatory measures will be required.

The process only proceeds through each of the four stages for certain plans or projects. For example, for a plan or project, not connected with management of a site, but where no likely significant effects are identified, the process stops at stage 1. Throughout the process, the precautionary principle must be applied, so that any uncertainties do not result in adverse effects on a site.

This report is in support of a Stage 1 Screening for Appropriate Assessment.

1.3.5 Recent judgements of the Court of Justice of the European Union (CJEU) and how they are used in this assessment.

The CJEU issued a ruling on the consideration of avoidance and reduction measures as a result of the case known as People over Wind, Peter Sweetman v Coillte Teoranta (Case C-323/17). This judgement stated that measures intended to reduce or avoid effects on a Natura 2000 site should only be considered within the framework of an Appropriate Assessment, and it is not permissible to take into account such measures at the screening stage.

More recently, the decision of the CJEU in case C-721/21 (Eco Advocacy CLG v An Bord Pleanála), delivered in June 2023, found 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 an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site.” (Para. 53(3) of the Judgement).

This recent judgement therefore clarifies that features which have been incorporated into a project as standard features, inherent in that project, and irrespective of any effect on any European site may be taken into account for the purposes of a Stage 1 Screening for Appropriate Assessment under Article 6(3) of the directive. The CJEU ruling in the case of Grace & Sweetman [2018] (C-164/17) clarified the difference between avoidance and reduction (mitigation) measures and compensation. Measures intended to compensate for the negative effects of a project cannot be taken into account in the assessment of the implications of a project, and instead are considered under Article 6(4). This means that any project where an effect on the integrity of a Natura 2000 site remains and can only be offset by compensation, would need to proceed under Article 6(4), demonstrating “imperative reasons of overriding public interest”.

The CJEU ruling in the case of Holohan v An Bord Pleanála (C-462/17) also clarified the importance in Appropriate Assessment of taking into account habitat types and species outside the boundary of the Natura 2000 site where implications of the effects on those habitat and species may affect the conservation objectives of the Natura 2000 site. In this assessment functionally linked and supporting habitat for species outside of Natura 2000 sites are assessed where they could potentially affect the conservation objectives of any Natura 2000 sites within the Zone of Influence (ZoI).

1.4 Methodology

The Screening for Appropriate Assessment has been prepared having regard to the Birds and Habitats Directives, the European Communities (Birds and Natural Habitats) Regulations 2011-15 as amended and relevant jurisprudence of the EU and Irish courts. The following documents have also been used to provide guidance for the assessment:

- DEHLG (2010). Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government (DEHLG, 2009).
- Office of the Planning Regulator (2021). OPR Practice Note PN01 - Appropriate Assessment Screening for Development Management.
- European Communities (EC) (2019). Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, , (OJ C, C/33, 25.01.2019, p. 1 Managing Natura 2000 sites — The provisions of Article 6 of the Habitats Directive 92/43/EEC (europa.eu).
- 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. 2021/C 437/01 (OJ C, C/437, 28.10.2021) EUR-Lex –
- 52021XC1028(02) - EN - EUR-Lex (europa.eu); EC, 2021) Guidance on strict protection of animal species of Community interest under the Habitats Directive; and
- Recent EU Case Law.

1.5 Screening Methods

This screening assessment uses the source-pathway-receptor (S-P-R) model as outlined in guidance (OPR 2021). Using the source-pathway-receptor model allows for the potential significant effects to be eliminated if no viable source, pathway, or receptor is present.

The S-P-R method uses an examination of the construction methods or project description allows sources of impact to be determined. This also allows a zone of influence (ZoI) for the project to be generated based on the size, scale and nature of the works involved. The pathways for impact are also analysed to see if a functional pathway for impact is present. This report analyses three pathways: surface water, groundwater and land. Using information gathered from desk sources (e.g. mapped qualifying interests from the Conservation Objectives for the site) and from field surveys, receptors within the zone of influence are identified. In some cases, sensitive receptors may also play a role in determining the zone of influence. If any of the three parts to the model are not present (source-pathway-receptor) the potential for a likely significant effect from the project on the Natura 2000 network can be discounted.

1.5.1 Likely Significant Effect Test

The test for AA screening is whether the project could have a 'likely significant effect' on any Natura 2000 site. A likely significant effect is defined as any effect that could undermine the conservation objectives of a Natura 2000 site, either alone or in combination with other plans or projects. There must be a causal connection between the project and the qualifying interest of the site which could result in possible significant effects on the site. The likely significant effect test is a lower threshold for the screening assessment than 'adverse effect on site integrity' considered at Appropriate Assessment stage (Stage 2) as screening is intended to be a preliminary examination for potential effects.

The Zone of Influence was used to identify Natura 2000 sites that could be impacted by the project. For each of these sites, the Qualifying Interest features and their associated conservation objectives were identified, and the possibility of likely significant effect was determined by a combination of location, ecological and hydrological connectivity, sensitivity of receptor and magnitude of the source of impact.

1.5.2 In-combination Screening

The possibility of in-combination effects are considered only at a high level. Where there is no effect at all via a pathway, there is no possibility of in-combination effects. Where a likely significant effect is identified, the in-combination assessment is carried forwards to a Stage 2 Appropriate Assessment.

1.6 Desktop study

A desktop study was conducted of available published and unpublished information, along with a review of data available on the National Parks and Wildlife Service (NPWS) and National Biodiversity Data Centre (NBDC) web-based databases, in order to identify key habitats and species (including legally protected and species of conservation concern) that may be present within ecologically relevant distances from the project as explained below. The data sources below were consulted for the desktop study:

- Aerial photography available from www.osi.ie and Esri World Imagery.
- NPWS website (www.npws.ie) where Natura 2000 site synopses, data forms and conservation objectives were obtained along with Annex I habitat distribution data and status reports.
- River Basin Management Plans (www.wfdireland.ie)
- NBDC Biodiversity Maps (maps.biodiversityireland.ie)
- Catchments (www.catchments.ie)
- Environmental Protection Agency Maps (https://gis.epa.ie/EPAMaps)
- Geological Survey Ireland (GSI) website (www.gsi.ie)
- GSI - Groundwater data viewer (https://dcenr.maps.arcgis.com)
- Planning Applications (myplan.ie)

1.7 Ecological Site Surveys

To inform this AA Screening, various ecological survey were performed by JBA Ecologists; William Mulville BSc (Hons), MSc, Malin Lundberg BSc MSc, Patricia Byrne BSc, PhD, Dip, Mark Desmond BSc (Hons) MSc, and Michael Coyle BA (Hons) MSc, Matt Hosking BSc (Hons), and Jai Dolan BSc (Hons) MSc. Table 1-1 contains further details on survey dates and types of surveys undertaken which relate to the Qualifying Interests (QIs) of local Natura 2000 sites.

The ecological walkover survey recorded habitats and protected species, following the methods outlined in the documents below:

Heritage Council (2011). Best Practice Guidance for Habitat Survey and Mapping (Smith et al. 2011).

Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2008).

Aerial photographs and site maps assisted the survey. Habitats have been classified and described following Fossitt (2000). Nomenclature for higher plants follows that given in New Flora of the British Isles (Stace, 2019). Identification of Irish plants generally follows Webb's An Irish Flora (Parnell and Curtis, 2012).

Table 1-1 Ecological surveys undertaken in the study area

Surveyors	Date of Visit	Survey Type
Malin Lundberg and Patricia Byrne	20th November 2020	Fossitt Habitat Surveys and Preliminary Ecological Appraisal
Malin Lundberg and Patricia Byrne	10th December 2020	Fossitt Habitat Surveys and Preliminary Ecological Appraisal
Malin Lundberg and Patricia Byrne	06th January 2021	Fossitt Habitat Surveys and Preliminary Ecological Appraisal

Surveyors	Date of Visit	Survey Type
Malin Lundberg and Patricia Byrne	20th January 2021	Fossitt Habitat Surveys and Preliminary Ecological Appraisal
Malin Lundberg and Patricia Byrne	25th February 2021	Fossitt Habitat Surveys and Preliminary Ecological Appraisal
Patricia Byrne	11th June 2021	Invasive Species Survey
Malin Lundberg and Patricia Byrne	30th June 2021	Invasive Species Survey, Fossitt Habitat Surveys and Preliminary Ecological Appraisal
Patricia Byrne	14th July 2021	Invasive Species Survey
Mark Desmond	24th October 2022	Invasive Species Survey
Mark Desmond	05/09/2023	Fossitt Habitat Surveys and Bat Roost Potential Survey.
William Mulville, Michael Coyle, Mat Hosking and Jai Dolan	02 February 2024	Otter and Fossitt Habitat Surveys
William Mulville, Michael Coyle and Jai Dolan	10 May 2024	Fossitt Habitat Surveys
William Mulville, Michael Coyle Matt Hosking and Jai Dolan	16 May 2024	Fossitt Habitat Surveys
Patricia Byrne, William Mulville, Michael Coyle Matt Hosking and Jai Dolan	05 June 2024	Bat Emergence and Bat Transect Surveys
William Mulville, Michael Coyle and Matt Hosking	11 July 2024	Otter and Fossitt Habitat Surveys

1.7.1 Terrestrial Habitat Surveys

Surveys of the terrestrial habitats were conducted on: 20 November and 10 December 2020; 6 January, 20 January, 25 February and 30 June 2021. Following this initial surveying, additional sections were added to the scheme, and these were surveyed on the 05 September 2023, and the 2 February, 10 May, 16 May and 11 July 2024.

All habitats located within the survey area of the proposed Scheme were mapped to level three of the Heritage Council's Fossitt (2000) habitat codes, and in accordance with Best Practice Guidance for Habitat Survey and Mapping1). Floral species present that were either representative of a habitat, or considered to be of conservation interest, were recorded. The habitat's extent was mapped onto an aerial photograph within the QField GIS Android application, with GPS points taken where any ecological features of note were observed. Any non-native invasive plant species listed on the Third Schedule of the Birds and Habitats Regulations were also recorded during the habitat surveys.

1.8 Consultation

The consultation is ongoing with a number of key stakeholders in relation to EU Natura 2000 sites which includes, but is not limited to the following:

- Dún Laoghaire Rathdown County Council;
- Office of Public Works;
- Inland Fisheries Ireland- consultation was undertaken on 30 July 2024. IFI had no comment to make in reference to AA Screening and Natura 2000 sites.

1 Smith, G.F., O'Donoghue, P., O'Hora, K., and Delaney, E. (2011) 'Best practice guidance for habitat survey and mapping', The Heritage Council: Ireland

- NPWS- an online meeting took place on 12 March 2024. The results of the AA Screening process were discussed, with no significant impacts to any Natura 2000 sites anticipated.

1.9 Limitations and Constraints

The screening assessment necessarily relies on some assumptions, and it was inevitably subject to some limitations. These would not affect the conclusion, but the following points are recorded in order to ensure the basis of the assessment is clear:

- Information on the works and conditions on site are based on current knowledge at the time of writing. Changes to the site since this report was drafted cannot be accounted for. However, the site surveys have followed CIEEM (2019) Advice note on the lifespan of ecological reports and surveys.
- JBA ecologists have been present at the site regularly since 2021 to 2024 when surveys have been undertaken. The last site visit made by an ecologist for this report was in July 2024. Therefore, it is considered this data is current.
- This assessment is based on the design of the proposed flood relief scheme and methodology of proposed works as described in this report. Where changes to methodology or design occur, an ecologist will need to be consulted to determine if the changes are likely to alter the ecological impacts and would therefore need reassessment.
- Data from biological record centres or online databases is historical information, and datasets may be incomplete, inaccurate, or missing. The absence of records for an area may be due to the under recording in the area and not necessarily imply the absence of species. These records are therefore to be treated as minimum information available for the area.
- Where field data and desktop data are limited, the precautionary principle is utilised when determining potential ecological sensitivities within the proposed development's ZoI.

2 Project Description

2.1 The 'Project'

The Proposed Project is not directly connected with, or necessary to the management of any Natura 2000 site and may have potential adverse effects upon the Natura 2000 sites identified in Section 4. Therefore, the Carrickmines-Shanganagh Flood Relief Scheme counts as a project and is subject to the requirements of the AA process.

Generally described, it is a series of flood defences positioned along the banks of the Carrickmines-Shanganagh river system as it flows from the R117 Enniskerry Road towards the sea between Killiney and Shankill. The defences comprise new and upgraded flood walls, culvert adjustments, and instream works.

2.2 Site Location and Context

The Carrickmines-Shanganagh River catchment is approximately 36km2 and encompasses a wide variety of land uses ranging from rural mountainous areas in the west, to urban residential areas in the east. The proposed development will be situated primarily in the built-up residential parts of the catchment. A description of the works areas follows, from west to east (upstream to downstream). References to the areas are as shown in *Figure 2-1*.

Clon Brugh (*Figure 2-1*, 1.A and 1.B, and *Figure 2-2*) is a residential estate situated just east of the R117 Enniskerry Road. It comprises a mix of 3-4 storey apartment blocks and houses, with small green areas, car parking, and footpaths. The proposed works in this area will be located along an area of linear green space and footpath. The area surrounding Clon Brugh is also primarily residential, with green space to the west and south in the Dublin mountains foothills.

Belarmine Park (*Figure 2-1*, 2.B and 2.D, and *Figure 2-3*) is a small public park surrounded by residential areas to the north, east, west, and southwest, and a school to the southeast. The Kilgobbin Stream flows through the park from roughly west to east through a wooded area, with grassy areas to the north and south. A small pond or wetland is also within the park. The stream enters a culvert at the eastern end of the park and emerges approx. 80m upstream of Kilgobbin Road. Works will be taking place at the boundary wall between the park and houses to the north in Sandyford Hall Grove and Sandyford Hall Crescent.

Kilgobbin Road (*Figure 2-2*, 2.E and 2.G, and *Figure 2-4*) is a small road lined with trees and stone walls, with a narrow footpath on one side for much of its length. The works in this area will take place along the boundaries of two houses on the western side of the road, before running beneath the road and turning east down a narrow laneway, finally running across an area of open space to join back with the river approx. 220m downstream. The houses in this area are all detached, on large plots of land. Kilgobbin House is a protected structure (RPS No.1684) whose stone wall boundary will be removed and reconstructed as a flood wall. The stone walls in this area are of cultural heritage value, and are discussed in Chapter 13 Cultural Heritage.

The works at 3.A (*Figure 2-1*, 3.A, and *Figure 2-5*) are centred around the Glenamuck Road North Roundabout, Ballyogan Grove/Castle View, and Priorsland. Works will be in close proximity to Carrickmines Castle (National Monument Service (NMS) /RPS designation here) and in view of houses along Ballyogan Grove/Castle View and Priorsland. Glenamuck Road North is a busy link road between Carrickmines and the M50 Junction 15, with access also to the Carrickmines Luas Park and Ride, and Leopardstown Racecourse. The proposed works along the northern side of the roundabout are adjacent to an existing footpath and segregated two-way cycle lane, while those along Ballyogan Grove/Castle View are adjacent to the existing road surface, and will replace an existing low stone wall.

Cherrywood Road (*Figure 2-1*, 4.A, and *Figure 2-6*) is a tree-lined local road with detached houses on either side. It is situated between the M50 to the west and the N11 to the east, with the Cherrywood Strategic

Development Zone (SDZ) to the north. Land use in this area is primarily residential, with large green spaces separating individual houses. The proposed works will take place within the property of three houses, adjacent to the river. The river has a riparian corridor here consisting of mature trees and other vegetation. Immediately downstream of this point, the river flows beneath the Cherrywood Viaduct, which is a protected structure (RPS No. 1783).

The works at 5.D (*Figure 2-1*, 5.D, and *Figure 2-7*) will take place on the Carrickmines River, between a green field to the west and the rear of buildings on Bray Road to the east. Bray Road is a cul-de-sac adjacent to the N11 with a mix of commercial and residential buildings. The buildings back on to the river which flows south before crossing under the N11 in a culvert. A mix of trees line the river, with an open green field on its western side.

Approximately 100m southeast of the Bray Road works, at Lower Brides Glen -, works will take place within the garden of a private residence called Waterfall Cottage, and to the culvert beneath the N11. The N11 is a busy road corridor and changes to the M11 motorway approx. 500m south of the works area. The downstream end of the N11 culvert overflow works is within Loughlinstown Woods, a densely wooded area which is also designated as a proposed Natural Heritage Area (pNHA). The pNHA is discussed in Chapter 8 Biodiversity.

Works at 5.A (*Figure 2-1*) will take place along the Shanganagh River as it flows from west to east along Commons Road, under the Shanganagh Road Bridge, and between Shanganagh Wood and Brookdene. Upstream of the bridge, Commons Road has residential development along its south side, with the river adjacent to the north. The northern side of the river at this point is wooded, with one house and a bridge providing access at roughly the midway point of the works. North of the wooded area is housing. Shanganagh Road Bridge is a protected structure (RPS No. 1772) and is a narrow two-lane stone arch bridge. Downstream of the bridge, Shanganagh Wood and Brookdene are both residential roads, with a footpath adjacent to the river along Shanganagh Wood, and a riparian strip and tree line on the left (north) bank at Brookdene.

Bayview (*Figure 2-1*, 5.C) is a residential area bound to the east by the railway line and a green area through which the Shanganagh River flows. Bayview comprises semi-detached and detached houses with front and rear gardens. Downstream of this point, the river flows beneath the railway line and past Shanganagh Wastewater Treatment Plant to the south, before discharging into the sea at Killiney Bay.

2.3 Description of Proposed Development

The Carrickmines-Shanganagh Flood Relief Scheme aims to develop an FRS for the Carrickmines-Shanganagh area with a SoP up to and including the 1% AEP event. Potential flood relief options for all locations within the study area where required were developed using combinations of those flood risk management measures which were determined to be technically viable. The measures proposed for the preferred option are listed in the table below (Table 2-1).

Data from the GDSDS was used in hydraulic modelling for the proposed development. The purpose of this was to inform catchment delineation, and the data was included in urban areas of the model to route flows to the watercourses. The data was not connected to the 2D zone of the model to avoid issues with mapping sewer and fluvial flooding.

Level information was used to understand potential impacts on the surface water (SW) network at key locations, such as balancing ponds at Belarmine Park. However, the SW networks itself and existing control measures were not modelled in detail. Measures to mitigate potential impacts on the drainage network, e.g., flap vales, will form part of the detailed design.

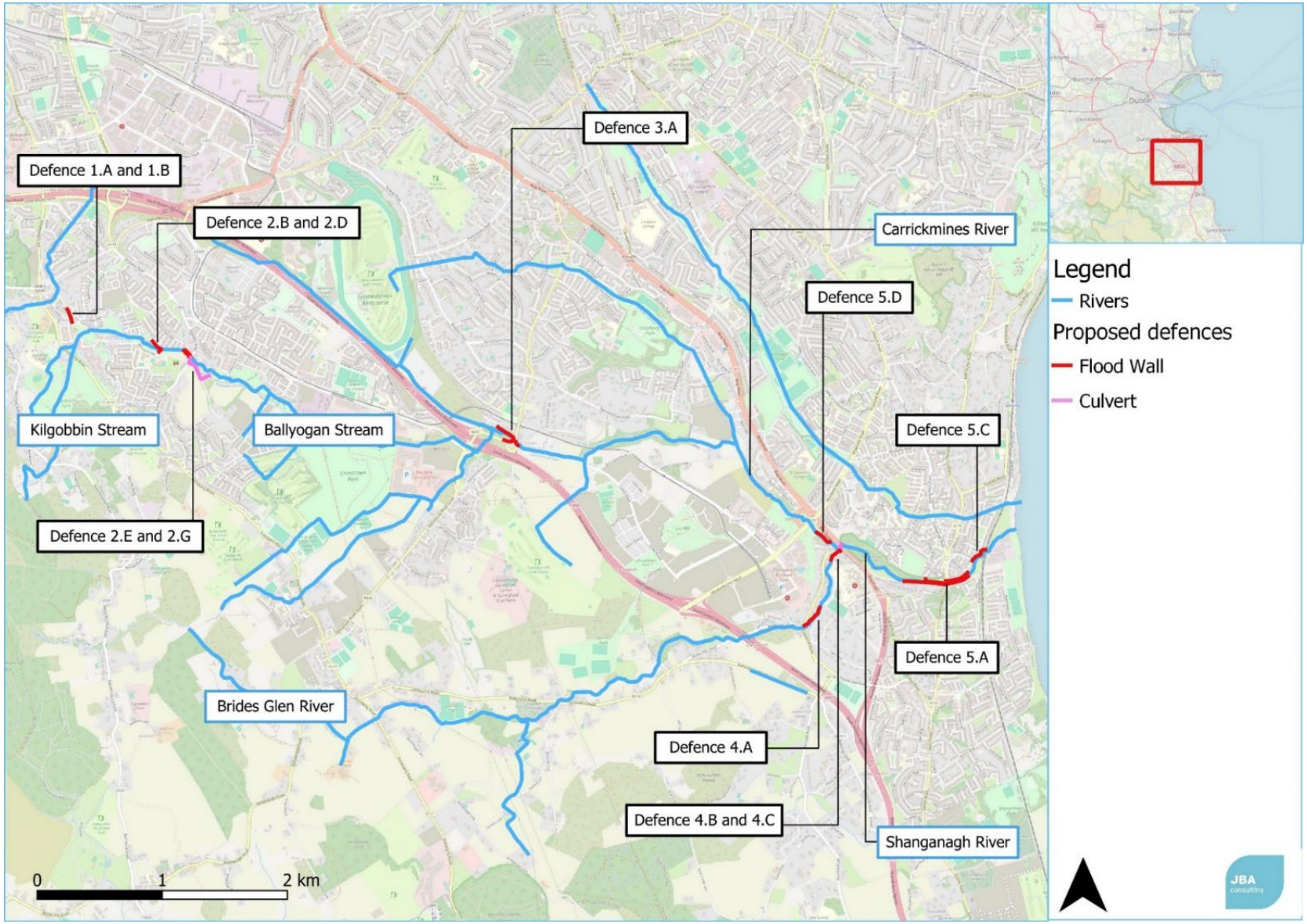

Figure 2-1: Carrickmines - Shanganagh FRS Overview

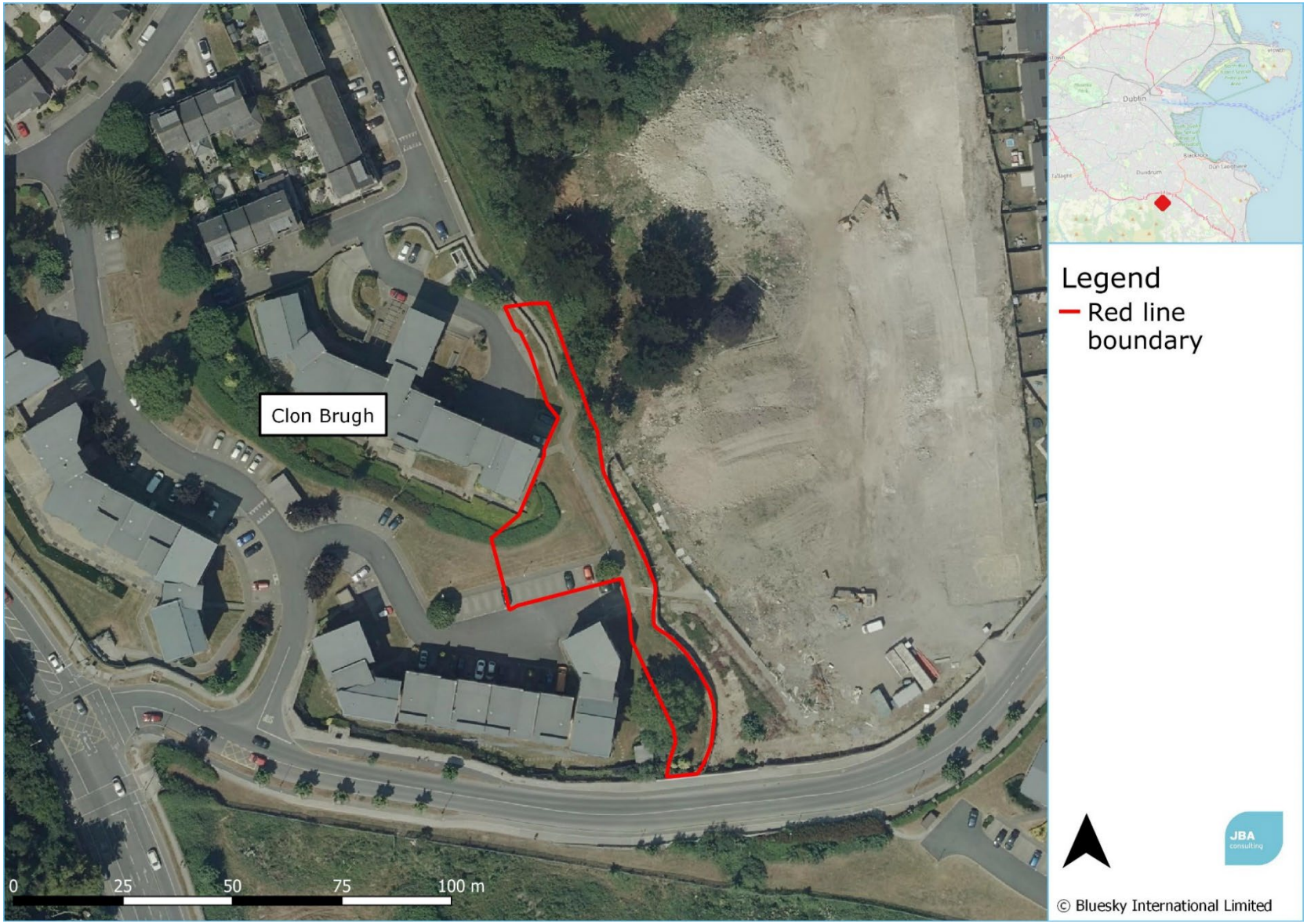

Figure 2-2: Proposed works at Clon Brugh – 1.A and 1.B

Figure 2-3: Proposed works at Belarmine Park – 2.B and 2.D

Figure 2-4: Proposed works at Kilgobbin Road – 2.E and 2.G

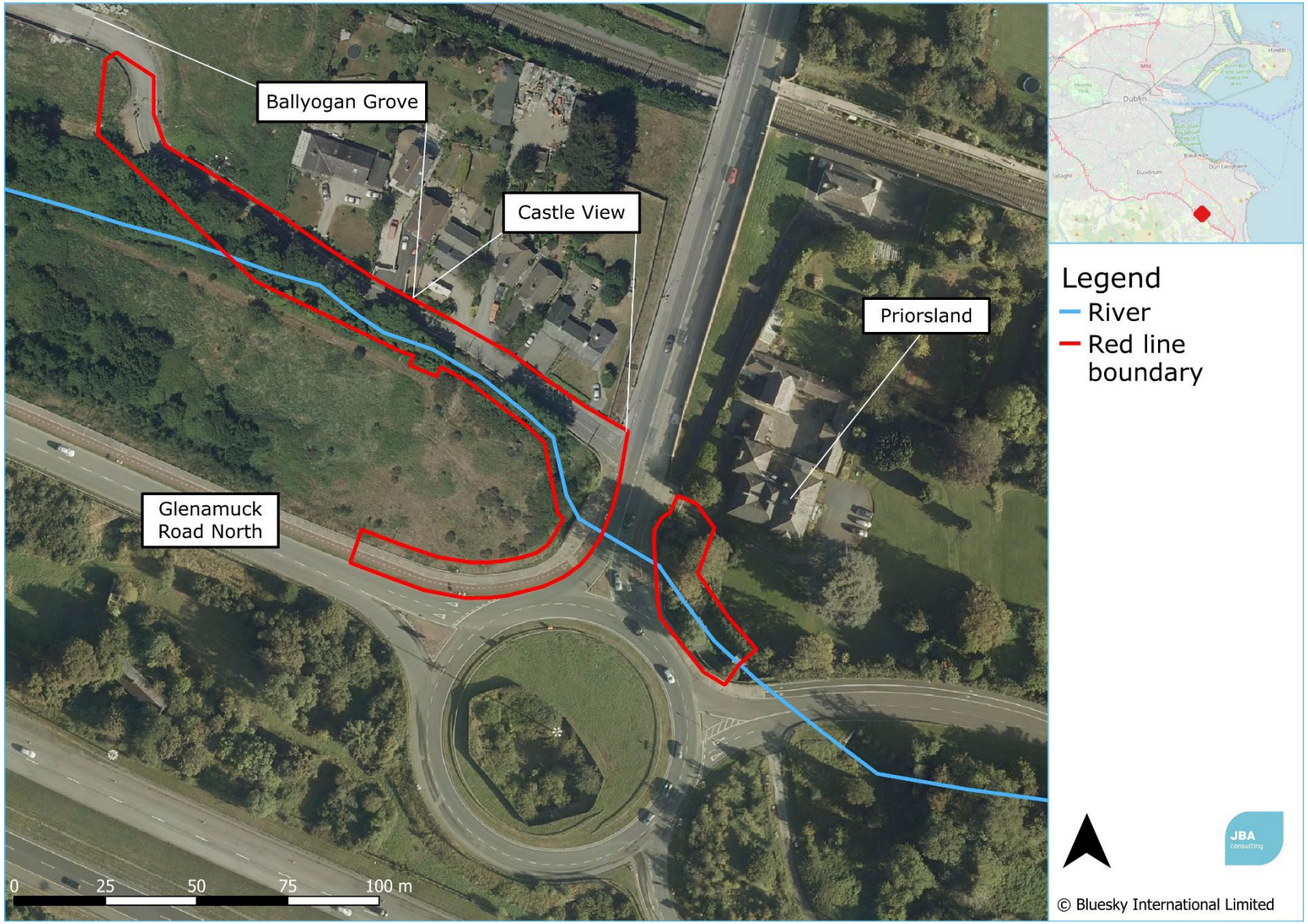

Figure 2-5: Proposed works at Glenamuck Road North - 3.A

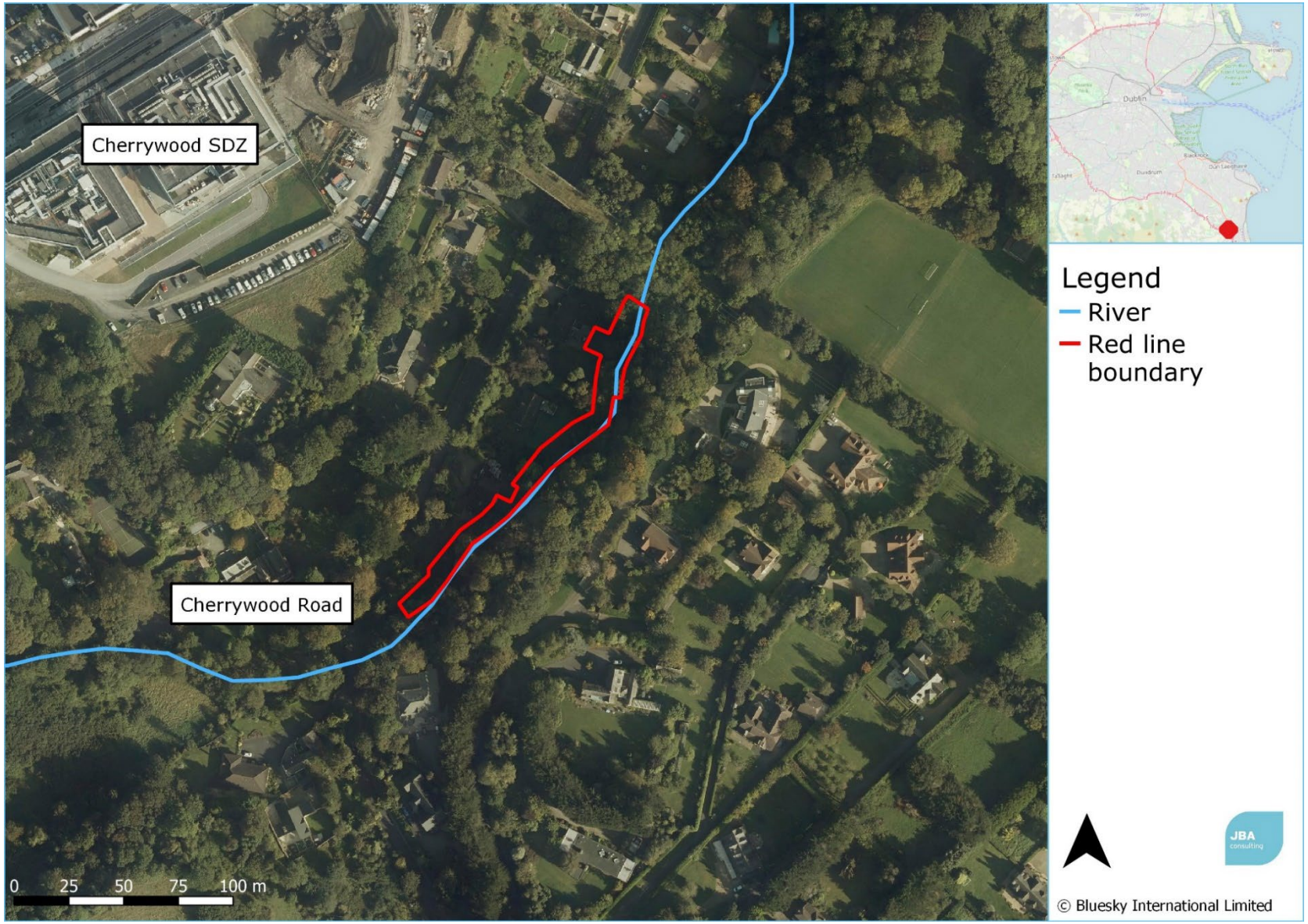

Figure 2-6: Proposed works at Cherrywood Road – 4.A

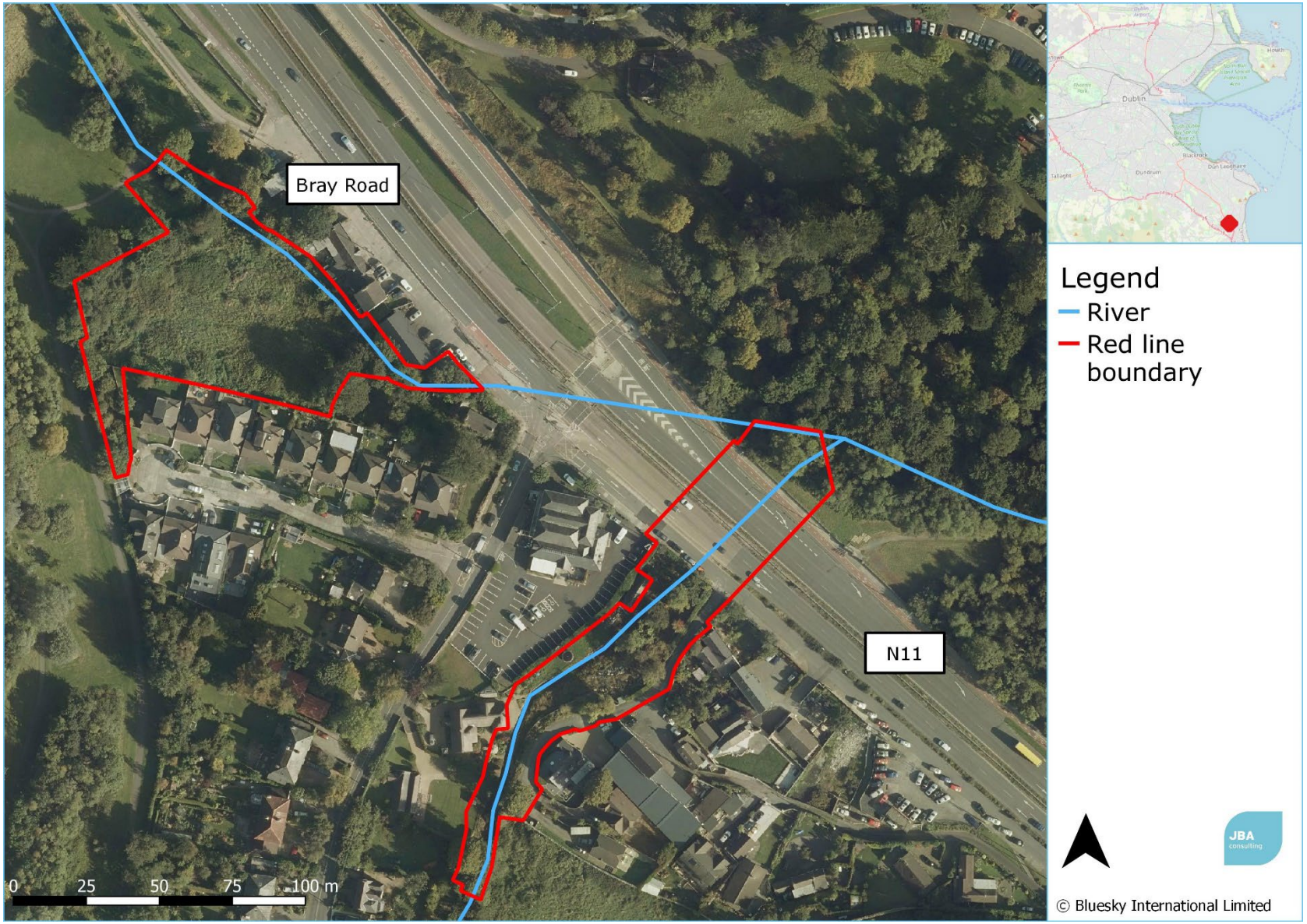

Figure 2-7: Proposed Works at Lower Brides Glen and Bray Road - 4.B, 4.C and 5.D

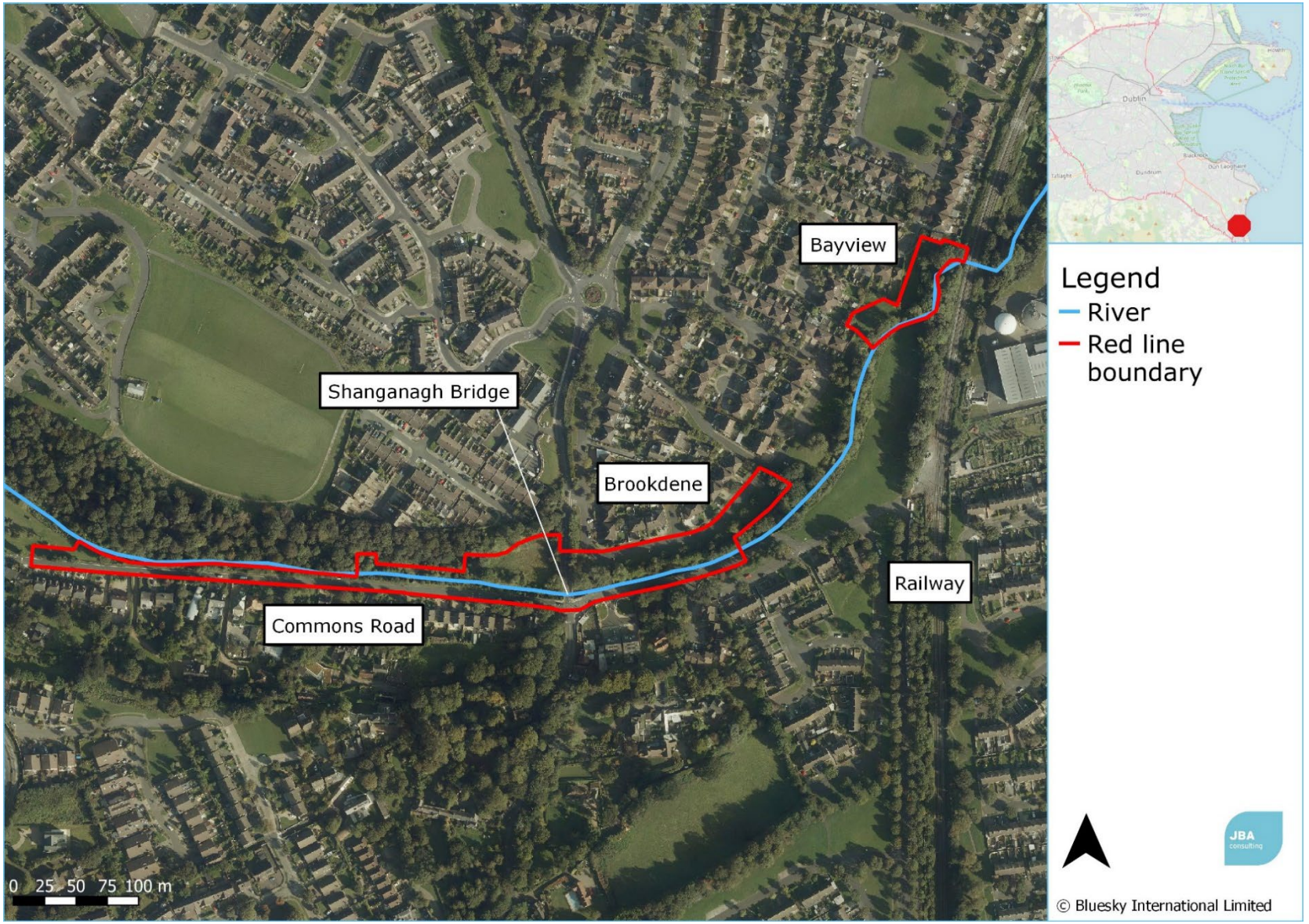

Figure 2.8: Proposed red line boundary at Commons Road, Brookdene, and Bayview – 5.A, 5.C

Table 2-1 Measures included in FRS Preferred Option

Measure	Description
1.A	Addition of defences at Clon Brugh
1.B	Closing existing openings at walls at Clon Brugh
2.B	Upgrade of Belarmine culvert inlet
2.D	Addition of defences at Belarmine culvert inlet
2.E	Addition of defences upstream of Kilgobbin Road
2.G	Installation of flood relief culvert upstream of Kilgobbin Road Bridge
3.A	Addition of defences in the area around Glenamuck Rd North Roundabout
4.A	Addition of defences upstream of the existing Cherrywood Viaduct (Brides Glen River)
4.B	Addition of defences upstream of N11 culvert (Brides Glen River)
4.C	Addition of flood relief culvert at the N11 crossing
5.A	Raising and addition of walls at Commons Road and Brookdene
5.C	Addition of defences upstream of railway line, at Bayview
5.D	Addition of defences at Bray Road

2.3.1 Clon Brugh – 1.A, 1.B

The proposed measures at Clon Brugh will protect from flood overflows from the Carysfort-Maretimo stream. This watercourse is not within the Carrickmines-Shanganagh catchment, however during flood events, flood water from this watercourse overflows into the Clon Brugh housing development. The measures as described below will be constructed along an open green space area, with a stretch of existing flood wall that will be realigned.

- Construction of c. 113m of new flood defence walls up to 1.35m high adjacent to the existing overland flow path from the Carysfort Maretimo Stream.
- Demolition of c. 16m of existing masonry walls and realignment works to the existing footpath.

2.3.2 Belarmine Park – 2.B, 2.D

Belarmine Park is a small open green space with housing to the north, east, west, and southwest, and a school to the south. Mature trees are present in the area of works.

- Replacement of c. 100m of the Sandyford Hall boundary wall with a new concrete flood defence wall up to 2.6m high.
- Construction of c. 36m of new flood defence walls in Belarmine Park up to 1.65m high to tie into the existing culvert inlet.
- Minor upgrade works to the existing culvert inlet structure.

2.3.3 Kilgobbin – 2.E, 2.G

Proposed measures in this area will be along the boundaries of private gardens, and underneath the public road. One of the houses, Kilgobbin House, is a protected structure.

- Replacement of c.69m of existing stone boundary wall to a protected structure Kilgobbin House (RPS Ref: 1684) and construction of c.100m of stone finished flood defence walls up to c.1.7m upstream of Kilgobbin Bridge.
- Installation of c.298m of culvert from a proposed flow control weir at Kilgobbin Bridge to a discharge point adjoining Meadowbrook downstream.

2.3.4 Glenamuck Road North – 3.A

The area of works here is a busy link road between Glenamuck Road North and the M50 Junction 15, with access also to the Carrickmines Luas Park and Ride, and residential properties at Ballyogan Grove/Castle View and east of the Glenamuck Road North roundabout. The existing walls at Ballyogan Grove/Castle View have existing vegetation along them, including mature trees.

- Demolition and removal of c. 128m of existing masonry walls.
- Construction of c. 259m of stone finished flood defence walls up to 1.9m high, including flood gate, along Castle View/Ballyogan Grove and the upstream face of the bridge at Glenamuck Road roundabout.
- Construction of c. 90m of flood defence wall up to 1.5m high adjacent to the river immediately downstream of Glenamuck Road roundabout.
- Installation of a new in-channel debris screen immediately upstream of the existing bridge.

2.3.5 Cherrywood Road – 4.A

This measure is within the gardens of 3 no. existing residential properties. Mature trees and vegetation are present along the river in this area.

- Construction of c. 178m of concrete flood defence wall ranging from 1.1m to 2.7m high, including demountable barriers and railings, on the bank of the Brides Glen River adjoining the existing properties and upstream of the Cherrywood Viaduct (RPS Ref. 1783).

2.3.6 Bray Road – 5.D

This measure will be constructed along the rear of commercial properties at Bray Road. This area is generally not accessible to the public, but is partially visible from houses in Cherrywood Park and the open green space to the west.

- Construction of c. 133m of concrete flood defence wall ranging from 1.1m to 3.1m high, including flood gate, on the Carrickmines River to the rear of existing properties on Bray Road.
- Circa 75m of river channel realignment, replacement of the existing access bridge and strengthening works to the existing masonry arch.

2.3.7 Lower Brides Glen – 4.B

This measure will be constructed within a private garden (Waterfall Cottage).

- Construction of c. 129m of flood defence walls ranging from 1.2m to 2m in height. The walls are to be located along the north bank of Brides Glen River, within the curtilage of existing properties including a protected structure Waterfall Cottage (RPS Ref: 1770) and immediately upstream of the N11 culvert. Works include demountable barriers and decorative railings.

2.3.8 N11 Overflow Culvert – 4.C

The current proposal allows for the installation of an overflow culvert to the Loughlinstown River South under the N11 to alleviate flooding immediately upstream of the current culvert under the N11, consisting of the following elements. Several trees will require removal.

- Installation of c. 53m of new 2.4m diameter overflow pipe beneath the N11 dual carriageway including an inlet upstream of the N11 and an outlet structure in Loughlinstown Park.

2.3.9 Commons Road and Brookdene – 5.A

An existing flood wall is present along part of Commons Road and Shanganagh Wood, on the right bank of the Shanganagh River. This flood wall will be upgraded to the required height, with new flood wall built to match it at the western end of the area. In Brookdene on the north side of the river, a new flood wall will be constructed in green open space, between an existing treeline/woodland and the road.

- Construction of c.209m of flood defence walls up to 2.4m high on Commons Road adjoining the river.
- Structural works to upgrade c. 324m of existing flood defence walls upstream of Shanganagh Road Bridge to an overall height of up to c.3.6m.
- Structural remedial works to the existing Protected Structure, Shanganagh Bridge (RPS Ref: 1773) including underpinning, scour protection and reinforcement of the masonry parapet.
- Upgrading of c.113m of existing flood defence wall on River Lane to a height of up to c.1.8m and construction of c. 185m of flood defence wall to a height of up to c.1.2m in in the Brookdene Estate.

2.3.10 Bayview – 5.C

This measure will be located in an existing green open space, to the rear and side of houses in Bayview. Access to the grass area will be maintained following construction.

- Construction of c. 95m stone finished flood defence walls up to c.1.8m high in the green area adjacent to Bayview Grove/Lawns.
- Replacement of c.17m of existing boundary wall at 20 Bayview Lawns with a new flood defence wall to match existing wall height and finishes and
- Replacement of remaining c.10m of fence and wall tying into the culvert under the railway with a concrete flood defence wall.

2.4 Construction Activities

It is expected that the construction phase will take place over c. 18-24 months.

2.4.1 Construction Compounds

Several compound areas will be established during the construction phase, for use in different areas of the scheme. Establishment of these areas will include the following:

- Site offices;
- Site facilities (canteen, toilets, drying rooms, etc.);
- Secure compound for the storage of all on-site machinery and materials;
- Temporary car parking facilities;
- Temporary fencing;
- Site Security to restrict unauthorized entry;
- Bunded storage of fuels and refuelling area.

A separate container will be located in the Contractors compound to store absorbents used to contain spillages of hazardous materials. The container will be clearly labelled, and the contents of the container will be disposed of by a licenced waste contractor at a licenced site. Records will be maintained of material taken off site for disposal;

Drainage collection system for washing area to prevent run-off into surface water system.

It is expected that the following areas will be used as construction compounds, subject to agreement with the landowners, where located in private lands. Where located in private lands, compounds will be temporarily acquired by agreement with the landowners.

- At Clon Brugh, in the open green space adjacent to the works area.
- At Belarmine Park, lands immediately south of the works area. The public open space in use as the site compound will not be accessible to the public during the works.

- At Kilgobbin Road, in the greenfield on the left bank of the river, behind Riverside house. Access will be through an existing gate off Kilgobbin Road.
- At Glenamuck Road North, in the greenfield at the end of Ballyogan Grove. Access to the compound will be from the Leopardstown Racecourse Road.
- At Bray Road, in the greenfield on the right bank of the Loughlinstown River North, adjacent to the Bray Road channel widening works.
- At Commons Road, in the DLRCC-owned greenfield area on the left bank of the Shanganagh River, immediately upstream of Shanganagh Road Bridge and accessed from Shanganagh Road.

The compound locations described above are shown in Figure 2-9, Figure 2-10, and Figure 2-11.

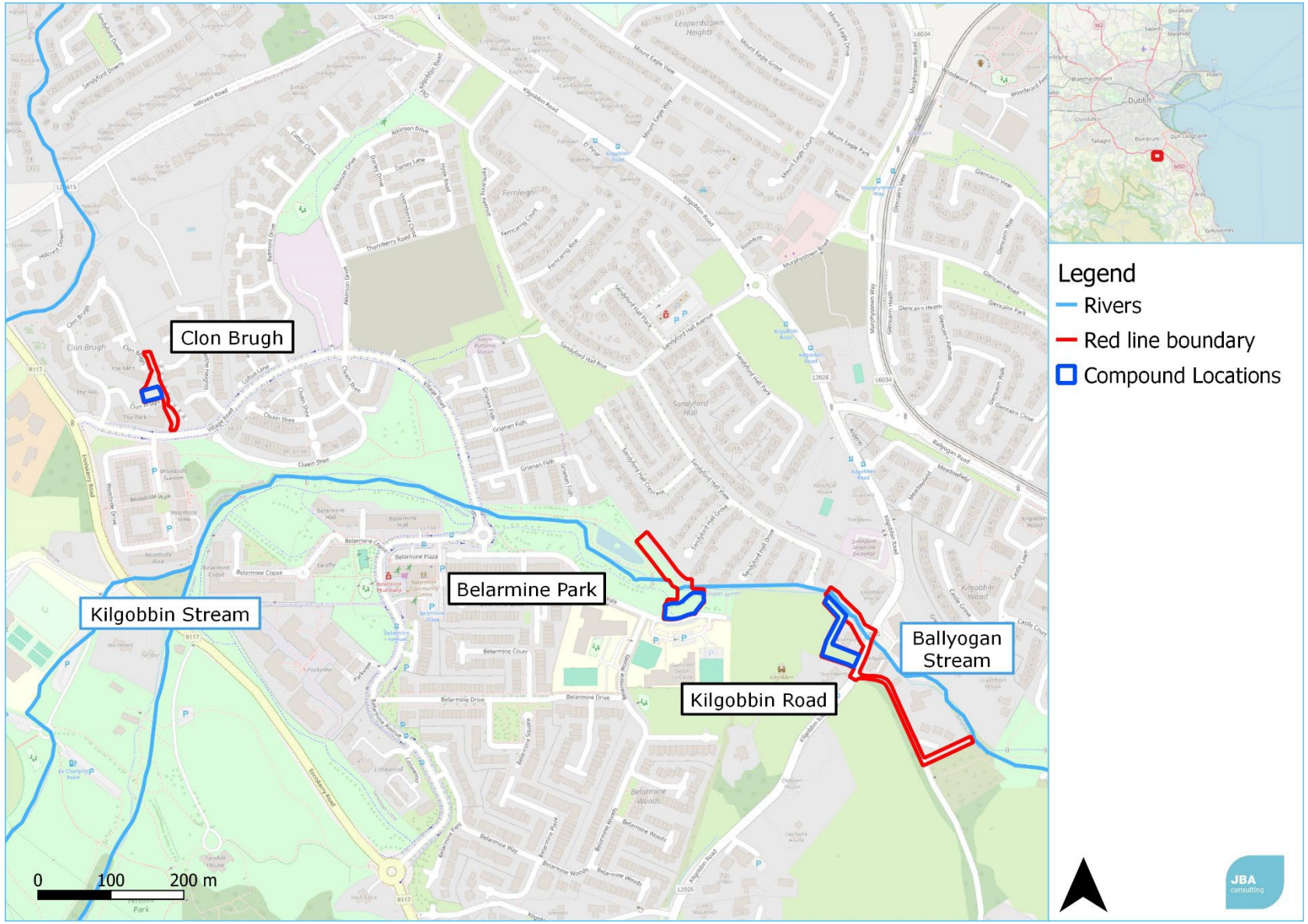

Figure 2-9: Compound locations, Clon Brugh, Belarmine Park, and Kilgobbin Road

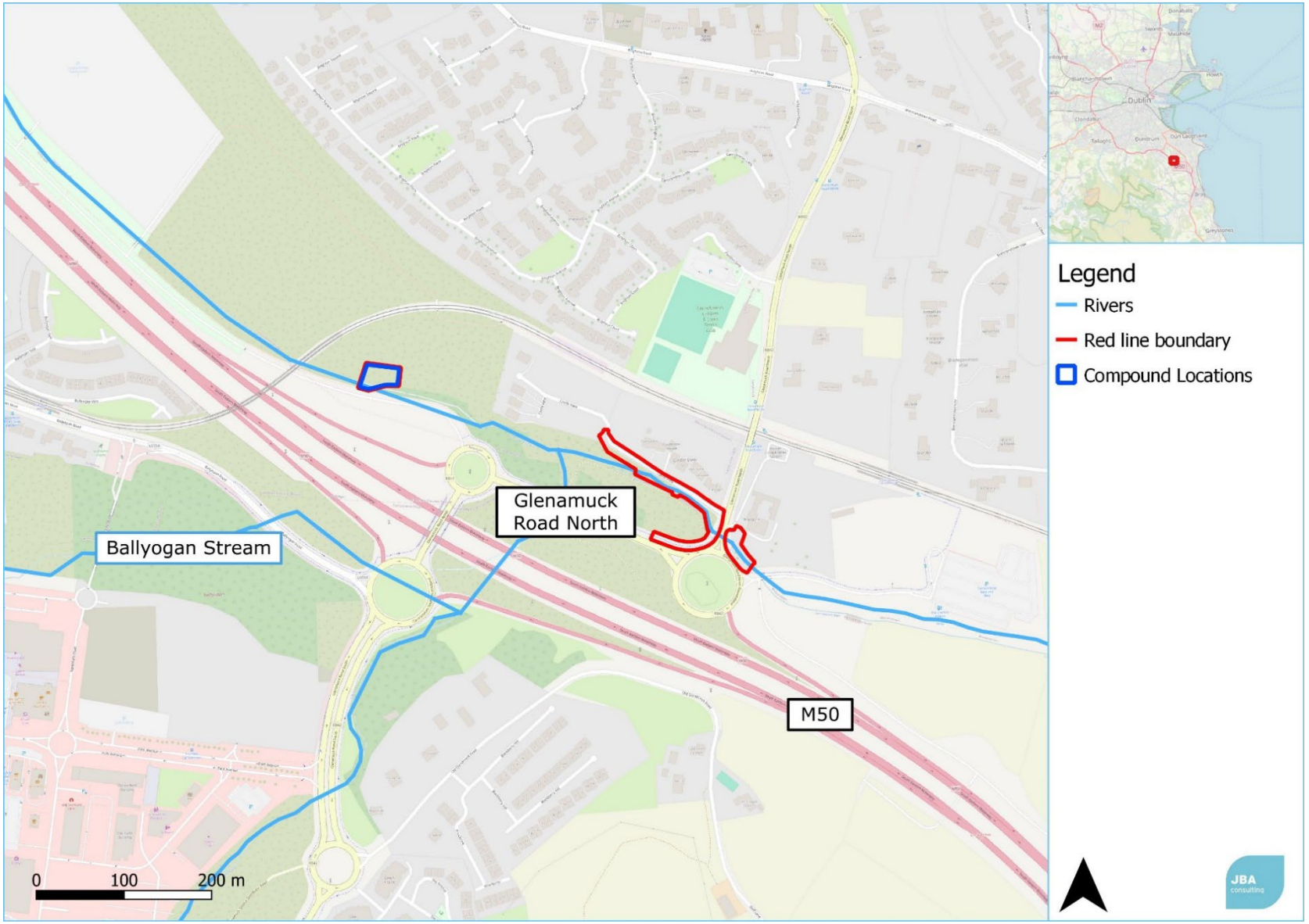

Figure 2-10: Compound location at Glenamuck Road North

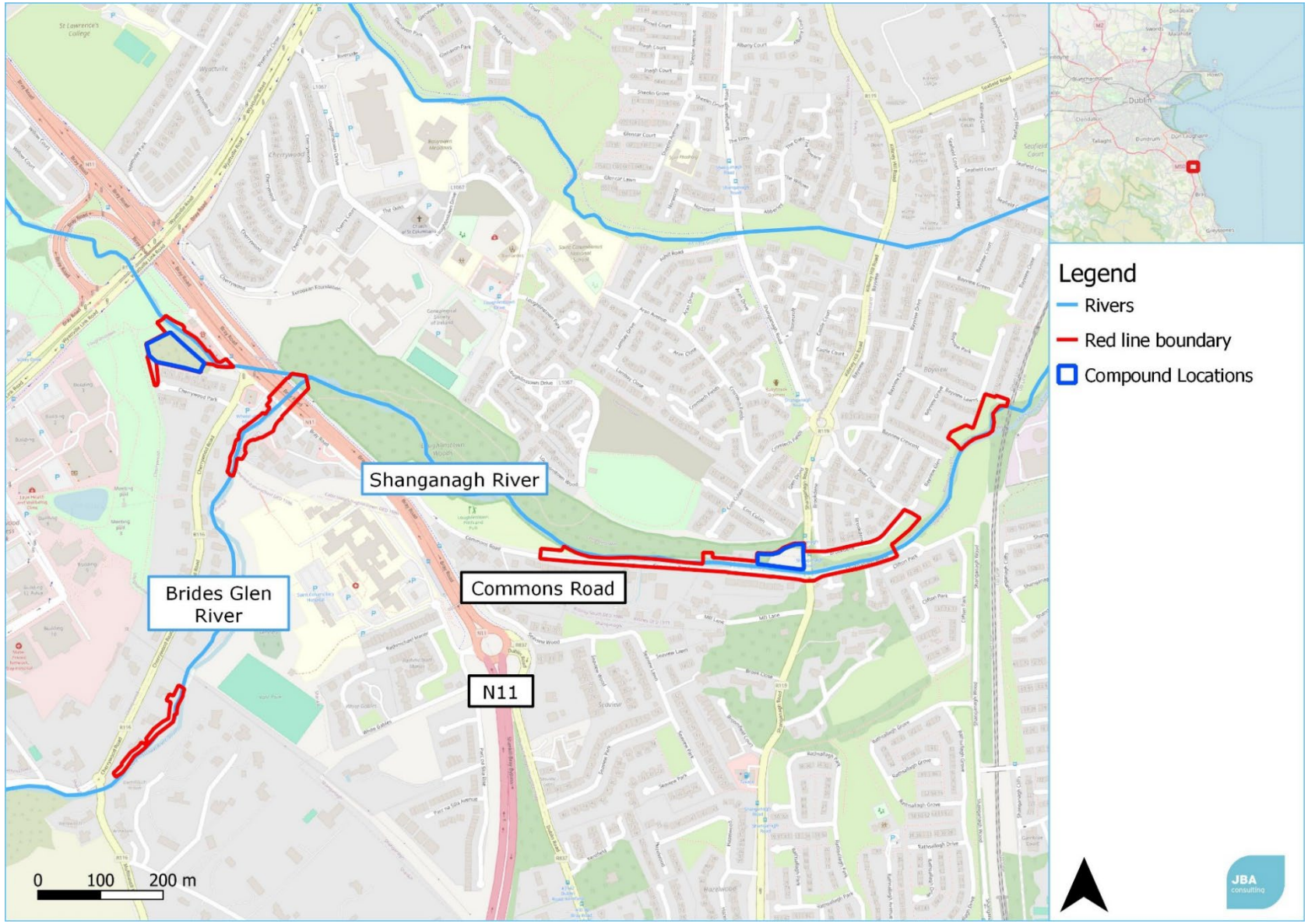

Figure 2-11: Compound locations at Bray Road and Commons Road

2.4.2 Construction Traffic Route

Construction traffic will travel to and from the site via the M50, N11, and local roads.

2.4.3 Excavation and Infilling

Excavation and import of soil and other materials will be required for construction of the walls and foundations. The Design Team has calculated that approx. 12438 m^3 of material will be excavated and removed from site. Approx. 6822 m^3 of soils will be imported for the backfill, and in addition to this, approx. 1456.5 m3 of other construction materials will be imported to site for roadworks.

2.4.4 Instream Works and Works Near Water

There will be instream works at Belarmine Culvert, Kilgobbin, Glenamuck Road North, Bray Road, N11 Culvert, and Shanganagh Road Bridge. Works will take place near water throughout the scheme.

At Belarmine Park, instream works will be necessary for the installation of the culvert upgrade and wall foundations. The instream phase will consist of:

- Installing protections prior to works commencing.
- Regrading the inlet structure and upgrading the existing screen.
- Excavating and installing wall foundations.
- Removing temporary works following construction.

At Kilgobbin Road, instream works will be required for the installation of the new weir structure. The instream phase of the works will consist of:

- Installing protections prior to works commencing
- Installing a reinforced concrete weir structure, including excavation of the river bedding, foundations, superstructure, scour protection and reinstatement of the river bedding.
- Removing temporary works following construction.

At Glenamuck Road North, instream works will be required for the construction of the debris screen. The instream phase of the works will consist of:

- Installing protections prior to works commencing
- Installing the proposed debris screen.
- Removing temporary works following construction.

At Cherrywood Road, instream works will be required for the installation of the new flood wall. The instream phase of the works will consist of:

- Installing protections prior to works commencing.
- Excavating and installing wall foundations.
- Removing temporary works following construction.

At Bray Road, instream works will be required for the installation of wall foundations and for channel widening. The instream phase of the works will consist of:

- Installing protections prior to works commencing.
- Excavating the left bank upstream of the footbridge to foundation level, stabilisation works may be required.
- Installing the flood defence walls, including any joint installation and treatment between the sections.

- Reinstate the sides of the left bank to the new design level.
- Rearranging protections as may be required to allow for the channel realignment.
- Excavating the realigned section of the stream.
- Planting vegetation along the new riverbank as required.
- Removing temporary works following construction.

At the N11 culvert and Lower Brides Glen, instream works will be necessary for the installation of the new weir structure and new flood defence wall. The instream phase of the works will consist of:

- Installing protections prior to works commencing.
- Installing the new flood defence wall.
- Installing a reinforced concrete weir structure, including excavation of the river bedding, foundations, superstructure, scour protection and reinstatement of the river bedding.
- Removing temporary works following construction.

At Commons Road, instream works will be necessary for the bridge reinforcement works and installation of flood defences. The instream phase of the works will consist of:

- Installing protections prior to works commencing.
- Carry out reinforcement works to bridge foundations and masonry and works on walls.
- Reinstate soil removed for instream works.
- After the concrete has reached its design strength, remove temporary supports.
- Relocate instream protection elements to the other half of the riverbed.
- Repeat steps above in the other half of the stream.

At Bayview, instream works will be necessary at the interface with the existing culvert beneath the railway line. The instream phase of works will consist of:

- Installing protections prior to works commencing.
- Temporary trench supports (e.g. sheet piles) or other temporary works (cofferdam) may be required to accommodate a safe working for construction of the flood defence walls. Continual over pumping of water will be required to maintain the safe working space. A cofferdam for instream works will create a temporary restriction of the existing channel width.
- Liaison with Íarnród Eireann and CIE will be necessary prior to works commencing close to the railway line.

2.5 Maintenance and Operational Activities

Following construction, each proposed measure will have its own bespoke management plan.

Regular inspections of the proposed structures will take place, together with investigations of their performance after each flood event.

A routine inspection and maintenance plan will be developed whereby Dún Laoghaire Rathdown County Council and/or nominated maintenance contractors will inspect and maintain the proposed structures once per year to examine them for any defects and to ensure that staff are trained and familiar with the operational process for them. It is assumed that this will primarily be a combination of visual inspection for any damage, spot repairs to walls where needed, and removal of materials which could act as blockages, e.g., large tree branches which have fallen into the river or waste. Maintenance will not include removal of natural sediment deposition or in-channel or riparian vegetation.

2.6 Decommissioning

Decommissioning of the proposed development is not expected to occur. Regular maintenance of structures will take place to identify any damage or deterioration. The proposed development has been designed to be adaptable to changing conditions as a result of climate change. This will allow it to remain in use in the future and be adapted when necessary.

2.7 Project Zone of Influence (ZoI)

The proposed FRS will primarily impact the area within its site boundary, but a wider zone of influence is used for impacts relating to surface water, groundwater, land and air source-receptor-impact pathways.

Natura 2000 sites within the Zone of Influence (ZoI) were assessed using the source-pathway receptor model (OPR, 2021) in relation to surface water and groundwater / ground-to-surface water pathways (i.e., local surface water sub-catchments and groundwater bodies / aquifers), with a 15km range for those with a downstream hydrological connection. In respect to ZoI for air pollution (emissions and dust), Natura 2000 sites within a 250m buffer zone of the development were considered as per the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2014), including ex-situ foraging habitats utilised by QI species associated with local Natura 2000 sites. Furthermore, a400m disturbance buffer (Cutts et al, 2013) from boundaries of the proposed Scheme has been incorporated into the ZoI in order to account for QI species potentially foraging within ex-situ habitats.

This disturbance buffer and 400m ZoI assesses potential ex-situ habitats that may be present, that could potentially support QI species from more distance Natura 2000 sites, i.e., birds travelling many kilometres from SPAs to ex-situ foraging habitat. If ex-situ foraging habitat is found within this disturbance buffer, this is considered an impact pathway and the Natura 2000s sites with the listed QIs that could potentially use this foraging habitat are included in the assessment.

3 Ecology Baseline Data

3.1 Baseline conditions

The proposed development area is comprised of a wide range of habitats, including stone structures, earth banks, built artificial surfaces, agricultural and amenity grasslands, ponds, spoil, swamps, rivers, ditches, grassy meadows and verges, bracken, woodlands, hedgerows, treelines, scrub. Descriptions of habitats and associated species are provided in the sub-sections below and are grouped by proximity of measures to each other.

3.2 Habitats

A list of habitats recorded during the ecological habitat survey is listed in Table 3-1 below and are presented in detail in the following sub-sections. The table below also contains QI species associated with Natura 2000 sites within the ZoI. These QI species have been recently recorded by Inland Fisheries Ireland (IFI) or JBA Ecologists within specific habitats. An overview of how the sections of the scheme have been split is shown in *Figure 3-1*, while individual habitat maps of these sections are found at the beginning of each sub-section. The sub sections include the following:

- Area A: Measures 1.A and 1.B (Clon Brugh) (*Figure 3-2*)
- Area B: Measures 2.B and 2.D (Belarmine Park) (*Figure 3-7*)
- Area C: Measures 2.E and 2.G (Kilgobbin Road) (*Figure 3-15*)
- Area D: Measure 3.A (Glenamuck Road) (*Figure 3-18*)
- Area E: Measures 4.A, 4.B, 4.C and 5.D (Bride's Glen River and Bray Road) (*Figure 3-19*)
- Area F: Measures 5.A and 5.C (Commons Road, Brookdene and Bayview) (*Figure 3-22*)

None of the habitats listed below are Annex I listed habitats.

Table 3-1: Habitats recorded during the site visits

Habitat	Fossitt Code
Stone walls and other stonework	BL1
Earth banks	BL2
Mosaic: Earth banks / Scrub	BL2 / WS1
Buildings and artificial surfaces	BL3
Recolonising Bare Ground	ED3
Other artificial lakes and ponds	FL8
Eroding/upland rivers	FW1
Mosaic: Eroding/upland rivers / Depositing/lowland rivers	FW1 / FW2
Drainage ditches	FW4
Improved agricultural grassland	GA1
Amenity grassland (improved)	GA2
Dry meadows and grassy verges	GS2
Wet grassland	GS4
Marsh	GM1
Dense Bracken	HD1
Mosaic: Dense Bracken / Scrub	HD1 / WS1
(Mixed) broadleaved woodland	WD1
Mosaic: (Mixed) broadleaved woodland / Scrub	WD1 / WS1
Mixed broadleaved/conifer woodland	WD2
Mosaic: Mixed broadleaved/conifer / Scrub	WD2 / WS1
Scattered trees and parkland	WD5
Hedgerow	WL1
Treelines	WL2
Scrub	WS1
Mosaic: Scrub / Dry meadows and grassy verges	WS1 / GS2

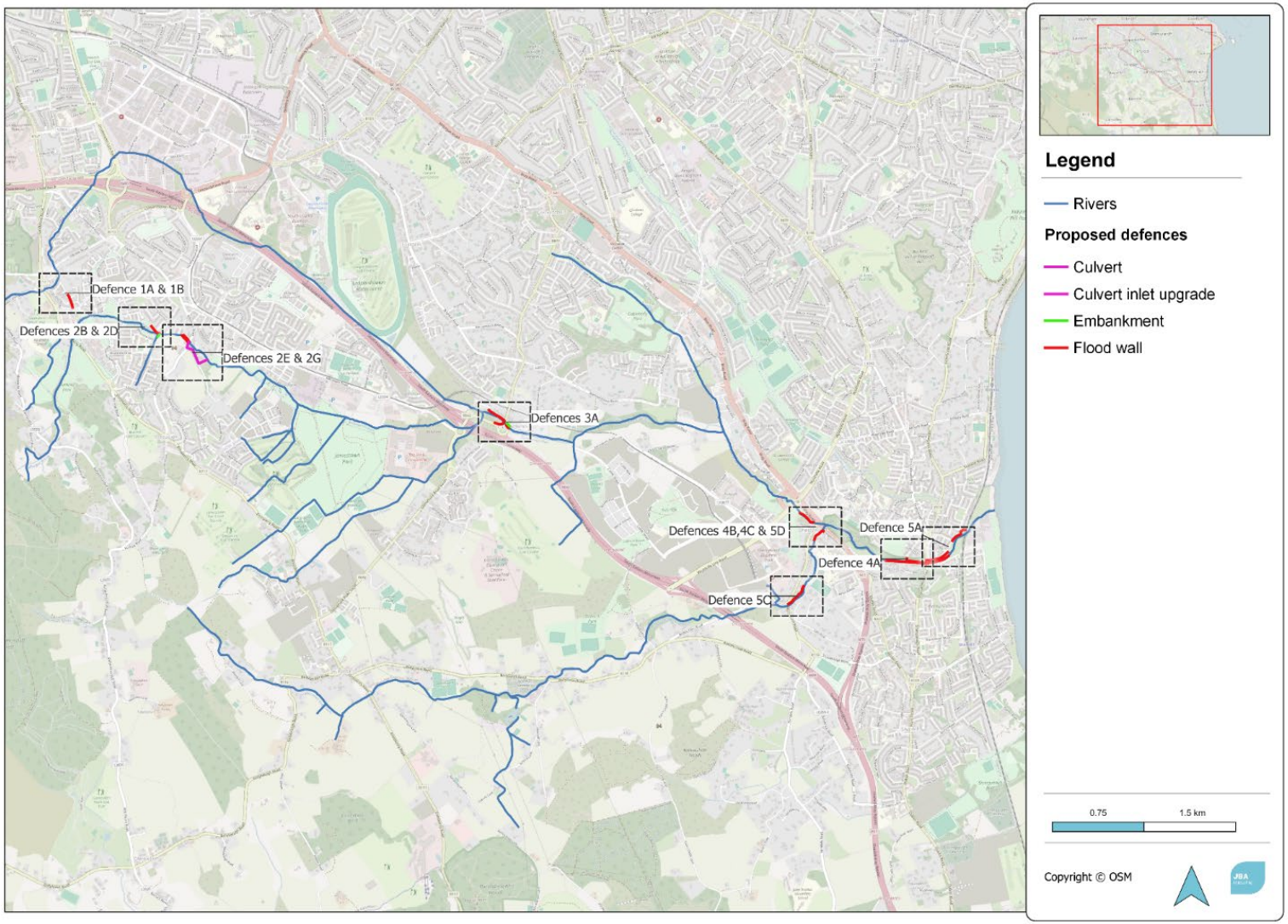

Figure 3-1: Location of the measures throughout the scheme area

3.2.1 Habitat map Area A: Measures 1.A and 1.B (Clon Brugh)

A habitat map of section A near Defence 1A & 1B area is found in Figure 3-2 below.

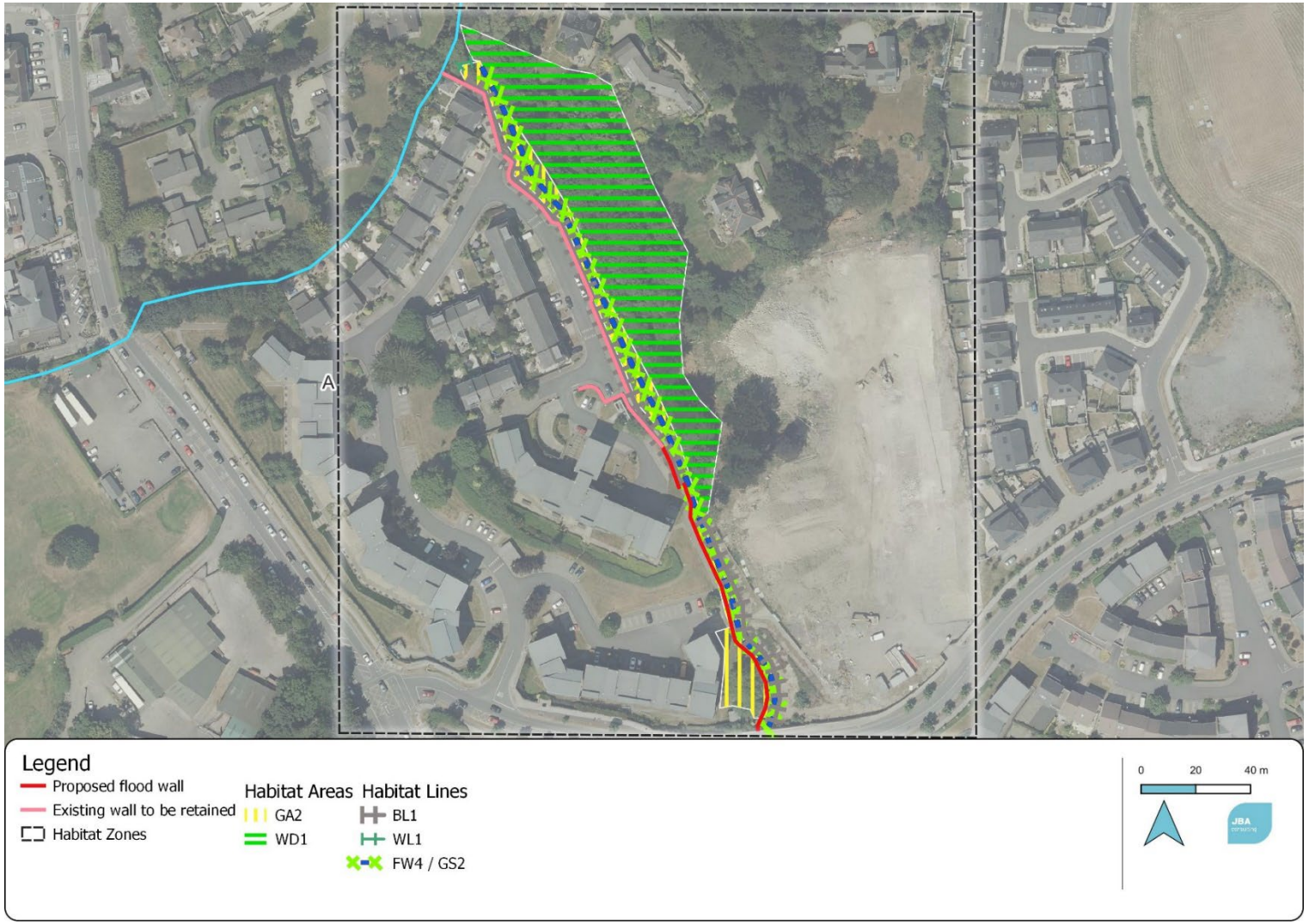

Figure 3-2: Clon Brugh habitats

The habitats for Area A are described below:

3.2.2 Stone walls and other stonework (BL1)

There are stone walls present within the housing estate at Clon Brugh. There were neither floral nor faunal species present on this stone wall.

In the context of the site and its surrounds, this habitat is considered to be of less than local ecological importance given the absence of supported species of ecological interest.

3.2.3 Buildings and artificial surfaces (BL3)

A large portion of the site is dedicated to roadways, houses, footpaths or adjacent housing. These areas that have few species present or associated with them.

In the context of the site and its surrounds, this habitat is considered to be of less than local ecological importance given the absence of supported species of ecological interest.

3.2.4 Drainage ditches / Dry meadows and grassy verges (FW4, GS2)

Located through Clon Brugh is a ditch that has a distinct grassy verge located along its course (*Figure 3-3*). At the time of the survey on the 16th of May 2024. This ditch was wet at the very northern tip of this section, and dry for the remainder. The flora located along the ditch's course include: Willowherb *Epilobium* sp; Hogweed *Heracleum sphondylium*; Perennial Rye-grass *Lolium perenne*; Cuckooflower *Cardamine pratensis*; Dandelion *Taraxacum* spp.; Red Clover *Trifolium pratense*; Bramble *Rubus fruticosus* agg.; Hedge Crane's-bill *Geranium pyrenaicum*; Ragwort *Jacobeae vulgaris*; Lesser Stitchwort *Stellaria graminea* ; Creeping Cinquefoil *Potentilla reptans*; Ribwort Plantain *Plantago lanceolata*; Black Medick *Medicago lupulina*; Wild Carrot *Daucus carota*; Red Fescue *Festuca rubra*; Cock's-foot *Dactylis glomerata*; Oxeye Daisy *Leucanthemum vulgare*; Herb Robert *Geranium robertianum*; Smooth Sow-thistle *Sonchus oleraceus*; Common Vetch *Vicia sativa*; Meadow Buttercup *Ranunculus acris*; Creeping Buttercup *Ranunculus repens*; and Broad-leaved Dock *Rumex obtusifolius*. Some garden Marigolds were also located within this area.

Figure 3-3: The ditch running through the Clonbrugh stretch of the scheme, with the distinct floral diversity visible in contrast to the amenity grassland on either side.

Figure 3-4: The wet section (left) and dry section (right) in the vicinity of Measures 1.A and 1.B Clonbrugh

3.2.5 Amenity grassland (improved) (GA2)

On either side of the ditch in this area, is a section of amenity grass (Figure 3-3). While some of the plants from the ditch and its verges have spread into these amenity areas, it is managed moderately, and so it consists mainly of Ragwort, Perennial Rye-grass, Dandelion and Daisy *Bella perennis*.

3.2.6 (Mixed) broadleaved woodland (WD1)

East of Defences 1A and 1B is a woodland (*Figure 3-5*) which consists of a mixture of trees, native and non-native. This woodland is dominated by Sycamore *Acer pseudoplatanus*, while also containing other tree species such as: Ash *Fraxinus excelsior*; Silver Birch *Betula pendula*; Scots Pine *Pinus sylvestris*; Hawthorn *Crataegus monogyna*; Blackthorn *Prunus spinosa*; Elder *Sambucus nigra*; Holly *Ilex aquifolium*; Alder *Alnus glutinosa*; Pedunculate Oak *Quercus robur*; Horse Chestnut *Aesculus hippocastanum*; and Barberry *Barberis* sp., while also having a light layer of English Ivy *Hedera helix* on some of the trees.

The understory of this woodland section includes Cleavers *Gallium aparine*, Bramble, Lords-and-ladies *Arum maculatum*; Burdock *Arctium minus*; Hedge Mustard *Sisymbrium officinale*; Dandelion; Creeping Buttercup; Perennial Rye-grass; Cleavers; Ragwort; Sunspurge *Euphorbia peplus*; Scaly Male Fern *Dryopteris affinis*, Shepherd's-purse *Capsella bursa-pastoris*, Creeping Thistle *Cirsium vulgare*; Broad-leaved Dock; Garlic Mustard *Alliaria petiolata*, Green Alkanet *Pentaglottis sempervirens*; Common Vetch; Nettle *Urtica dioica*; Wood Sorrel *Oxalis acetosella*; White Clover *Trifolium repens* and Common Fumitory *Fumaria officinalis*.

Figure 3-5: The woodland in the area of Measures 1.A and 1.B

This woodland was also inspected for bat roosting features, and was deemed to have low potential for roosting, given the lack of dense Ivy growth of cracks within trees and limbs.

3.2.7 Hedgerows WL1

There is a small hedgerow located to the north of this location, made entirely of Cherry Laurel *Prunus laurocerasus*, before beginning to merge with the woodland section (Figure 3-6).

Figure 3-6: Cherry Laurel hedging at the north of this location

3.2.8 Habitat Map Area B: Measures 2.B and 2.D (Belarmine Park)

Habitat map for Area B: Measures 2.B and 2.D is seen below in *Figure 3-7*.

Figure 3-7: Belarmine habitats

Habitats for Area B are described below

3.2.8.1 Other artificial lakes and ponds (FL8)

West of the Belarmine culvert inlet, lies an acting water storage and flood relief pond with an island (Figure 3-8). In the area of this pond and along the bank are, both mature and immature Willow *Salix* spp., Willowherb, Broadleaved Dock, Creeping Buttercup; Bulrush *Typha latifolia*, Pendulous Sedge *Carex pendula*, Soft Rush *Juncus effusus*; Hard Rush *Juncus inflexus*; Common Vetch; Creeping Buttercup; Meadow Buttercup; Lesser Stitchwort; Dandelion; Broad-leaved Dock; Yorkshire Fog *Holcus lanatus*; Bent *Agrostis* sp., Yarrow *Achillea millefolium*; White Clover; Hogweed; Sweet Vernal-grass *Anthoxanthum odoratum*; Ragwort; Creeping Thistle; Red Clover and Common Daisy.

Figure 3-8: The lake in Belarmine Park

3.2.8.2 Amenity grassland (improved) (GA2)

There are large areas of amenity grassland located within the vicinity of Defences 2 A-E. These areas are predominantly Perennial Rye-grass with some small sections of Ragwort, Dandelion and Daisy.

3.2.8.3 Marsh (GM1)

There is a small section of marshland within the Belarmine Park. This area exhibits little management, and this has allowed for stands of Yellow Iris, Bramble, Willowherb and some singular stands of Grey Willow *Salix cinerea* and Alder to develop (Figure 3-9).

Figure 3-9: The Marsh within Belarmine Park

3.2.8.4 Dry meadows and grassy verges (GS2)

There are patches of unmown grassy verges and small meadow patches in the south of Belarmine Park. These verges include Annual Meadow-grass Poa annua; Yorkshire Fog; Bent *Agrostis* sp.; Dandelion; Perennial Rye-grass; Cuckooflower; Dandelion; Red Clover; Ragwort; Lesser Stitchwort; Creeping Cinquefoil; Cock's-foot; Herb Robert; Meadow Buttercup and Creeping Buttercup.

In the south-east of this section, near to the bridge on Kilgobbin Road, is a small patch of grassy verge that contains the species: Red Valerian *Centranthus ruber*; Curled Dock *Rumex crispus*; Meadow Buttercup; Ivy; Creeping Buttercup; Nettle; Creeping Thistle; Tutsan *Hypericum androsaemum*; Willowherb; Cow Parsley *Anthriscus sylvestris*; Dandelion; Mouse-ear *Cerastium fontanum* ; Yorkshire Fog, Hart's-tongue Fern *Asplenium scolopendrum*; Pendulous Sedge and Cleavers.

3.2.8.5 Wet grassland (GS4)

A section of wet grassland is present in the center of the Belarmine Park, in a clearing of the Wet willow-alder-ash woodland and grading from the Marsh. Within this wet grassland are varied management sections. While there were sections of lower growth height that contained lots of Cuckooflower, along with Creeping Buttercup; Daisy; Dandelion; Chickweed *Stellaria media*; Soft Rush *Juncus effusus* and Willowherb (Figure 3-10) there were additional sections in this area that had undergone some mowing, while still retaining the soft and waterlogged ground (Figure 3-10 and *Figure 3-11*).

Figure 3-10: The unmanaged sections of wet grassland within Belarmine Park

Figure 3-11: The mown and heavily managed sections of wet grassland

3.2.8.6 (Mixed) broadleaved woodland (WD1)

There is a small stretch of Mixed Broadleaved woodland in the east of Belarmine Park, which consists of two interlocking treelines. These treelines contain Beech *Fagus sylvatica* and Ash *Fraxinus excelsior* with a minimal ground layer of Perennial Rye-grass and some Ground Ivy *Glechoma hederacea*.

3.2.8.7 Scattered trees and parkland (WD5)

In the west of Belarmine Park is a small section of scattered trees in an amenity grass area. These trees consisted of Pedunculate Oak *Quercus robur*.

3.2.8.8 Treelines (WL2)

In and the west and east of this section, are rows of trees bordering the roadways or the grassland areas, which contain the species Ash, Hawthorn *Crataegus monogyna*, Beech, Sycamore, Elder *Sambucus nigra* and Holly with a low cover of Bramble.

3.2.8.9 Wet willow-alder-ash woodland (WN6)

Throughout Belarmine Park is a woodland (Figure 3-12) that consists of high content of Ash and White Willow, while also containing other tree species Elder *Sambucus nigra*, Sycamore, Dogwood *Cornus sanguinea*, Silver Birch, Hazel *Corylus avellana* and Beech. The understory of this woodland consisted of a variation of Bramble; Cleavers; Cow Parsley; Creeping Buttercup; Ivy; Gorse *Ulex europaeus*; Ribwort Plantain *Plantago lanceolata*; Nettle; Hogweed; Bush Vetch *Vicia sepium*; Annual Meadow-grass; Lords-and-ladies; Male Fern *Dryopteris filix-mas*; Tutsan; Harts-tongue Fern; Pendulous Sedge; Hedge Bindweed *Calystegia sepium*; Field Horsetail *Equisetum arvense*; Greater Stitchwort *Stellaria holostea*; Brooklime *Veronica beccabunga*, Lesser Celandine *Ficaria verna*; Herb Robert; Nipplewort *Lapsana communis*, Gorse, and Ground Ivy.

The Carrickmines Stream ran directly through this woodland (Figure 3-13), whilst there were sections of the woodland that were off from the main water body, but still had pools of standing water present (Figure 3-14).

Figure 3-12: The northern boundary of the Belarmine Park woodland

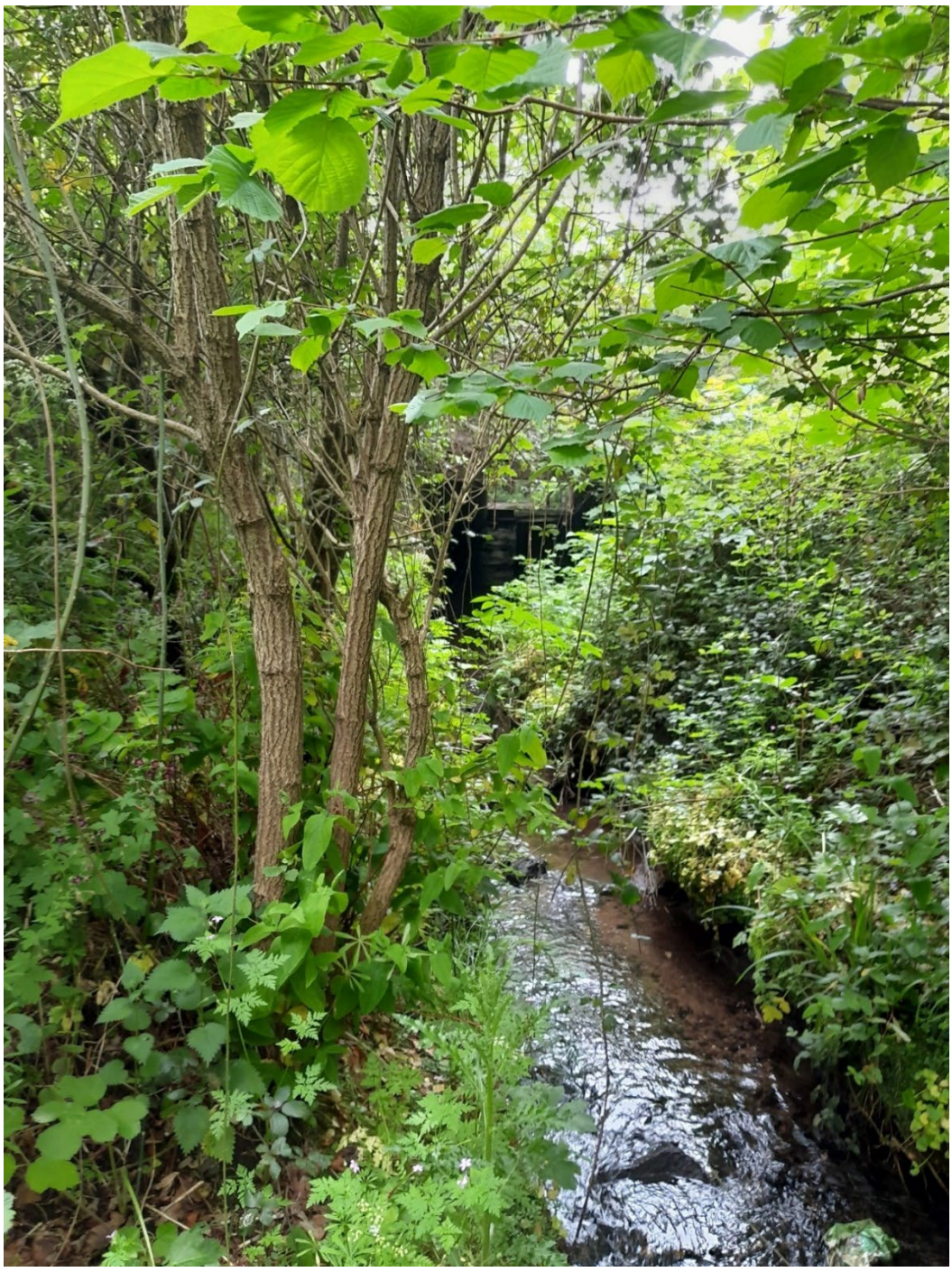

Figure 3-13: The centre of the Belarmine Park woodland, with the Carrickmines Stream running through it

Figure 3-14: Areas of Belarmine Park woodland that were not part of the main woodland body, but had standing pools of water

3.2.8.10 Scrub (WS1)

West of the Belarmine culvert, and north-east of the attenuation pond, is an area that widens into a dense scrub. This scrub section was largely a section of Bramble at the time of surveying. Additional species present include Beech; Ash; Broad-leaved Dock; Cow Parsley; Creeping Buttercup; Nettle; Sycamore; Ash; Crab Apple *Malus sylvestris* and Cleavers.

Invasive Species

There is widespread Skunk Cabbage *Lysichiton americanus* and Three-cornered Garlic *Allium triquetrum* present along the stretch of the Carrickmines Stream.

3.2.9 Habitat Map Area C: Measures 2.E and 2.G (Kilgobbin Road)

Habitat map for Area C: Measures 2.E and 2.G is seen below in *Figure 3-7*

Figure 3-15: Kilgobbin Road habitats

Habitats for Area C are described below:

3.2.9.1 Stone walls and other stonework (BL1)

There is a stone wall that lines either side of Kilgobbin Road This wall was species poor, including Ivy-leaved Toadflax Cymbalaria muralis; Ivy; Herb Robert; Stonecrop Sedum sp and Dandelion.

3.2.9.2 Buildings and artificial surfaces (BL3)

There are houses, roads and driveways located within the area of this section of the Scheme. These areas do not have any species associated with them.

3.2.9.3 Improved agricultural grassland (GA1)

There is a field to the west of Kilgobbin Road, that at the time of surveying had a horse present in it. Due to the grazing of the horse (*Figure 3-16*), the field was not entered, however, from the roadside it was apparent that the grassland was species-poor, likely due to over-grazing.

Figure 3-16: The grazed field located west of Kilgobbin Road

3.2.9.4 Amenity grassland (improved) (GA2)

Areas of amenity grass within this section of the Scheme include the gardens of local residents that were not surveyed due to their maintenance and low ecological value.

3.2.9.5 Dry meadows and grassy verges (GS2)

There are two large field areas that are located within this section of the Scheme, which had previously been utilised as agricultural land. At the time of the survey, these areas have been allowed to diversify and develop into meadow areas with species including Cow Parsley; Meadow Buttercup; Cock's-foot; Yorkshire Fog; Cuckooflower; Cleavers; Nettle and have begun to be encroached by Bramble, in particular along the edges of the field boundary.

3.2.9.6 Scattered trees and parkland (WD5)

In the east of this section of the Scheme is a housing estate that has a planted woodland present (*Figure 3-17*). Trees in this area include Sycamore; Ash; Horse Chestnut and Scots Pine. The ground flora in this area is amenity grassland that is tightly mown and managed.

Figure 3-17: Section of the planted woodland in the housing area east of Kilgobbin Road

3.2.9.7 Hedgerows (WL1)

There is one hedgerow within this section of the scheme that is located within the centre of the grazed field. As with the rest of this field, the area was not surveyed due to the presence of the horse, however, from a distance it was apparent that the hedge was heavily fragmented.

3.2.9.8 Treelines (WL2)

There are treelines located throughout this section of the Scheme, with one treeline consisting of Horse Chestnut; Bramble; Ivy, Sycamore and Hawthorn with Nettles and Creeping Buttercup present at its base.

The treelines that are present within the rest of this section include Ash; Sycamore and Beech.

3.2.10 Habitat Map Area D: Measure 3.A (Glenamuck Road)

Habitat map for Area D: Measure 3.A is seen below in *Figure 3-7*

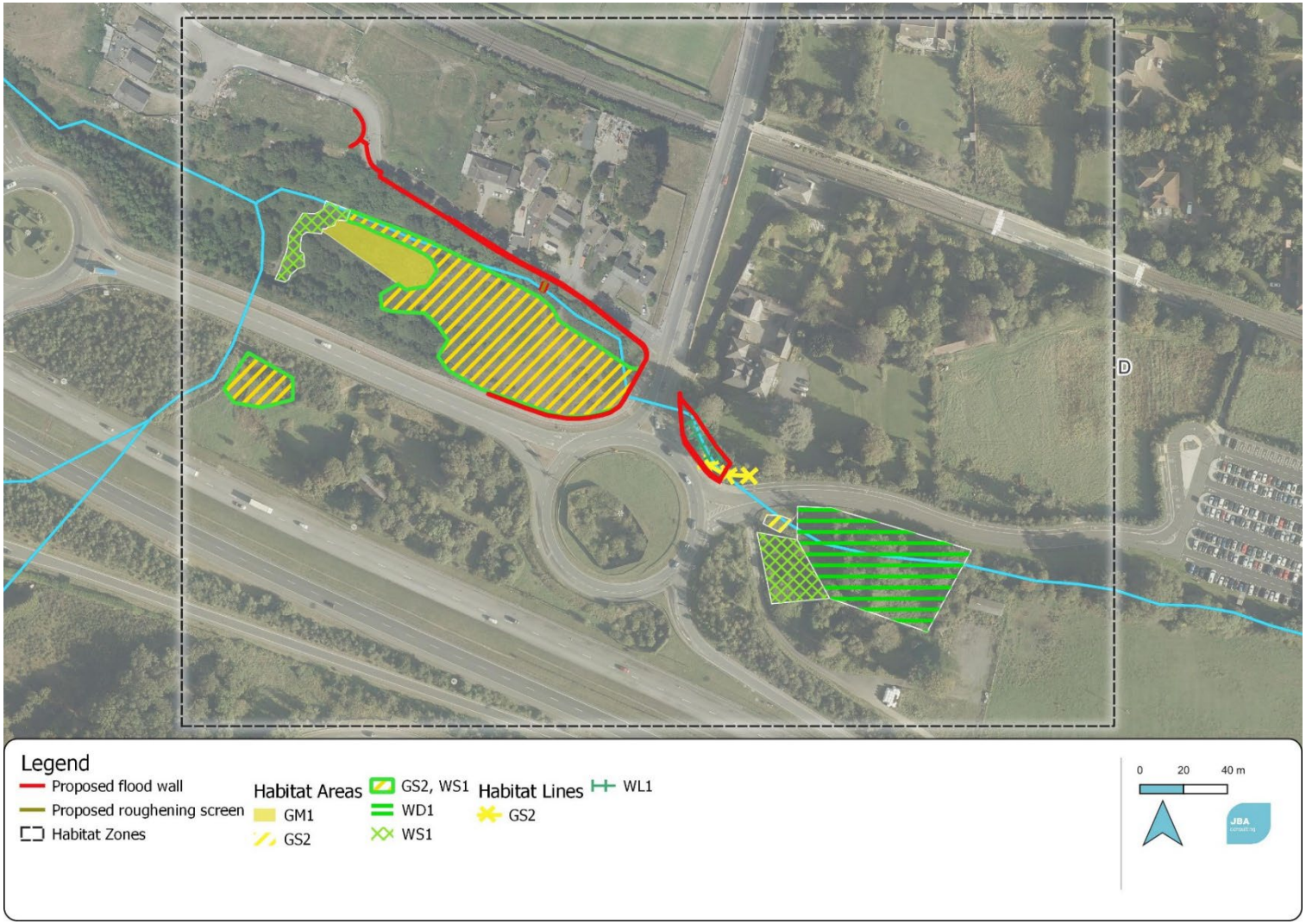

Figure 3-18: Glenamuck Road habitats

Habitats for Area D are described below

3.2.10.1 Recolonising Bare Ground (ED3)

There is a narrow, linear section of recolonising bare ground in the north-east of the roundabout section. This linear feature includes Field Mustard *Brassica rapa*; Ragwort; Field Speedwell *Veronica persica*; Wavy Bittercress *Cardamine impatiens*; American Willowherb *Epilobium Ciliatum*; Groundsel *Senecio vulgaris*; Alder; Ivy; Nettle and Bilbao Fleabane *Conyza floribunda*. This habitat was less than 0.5m in width so not mapped, due to its small scale.

3.2.10.2 Marsh (GM1)

There is a section of marsh located in the patch east of the roundabout. This marshland contains Green Alkanet, Nettle, Pendulous Sedge; Cleavers; Water Figwort *Scrophularia nodosa*; Cow Parsley, Great Willowherb *Epilobium hirsutum*; Hogweed, Curled Dock; Bramble and Marsh Marigold *Caltha palustris*.

A patch of marsh also exists north-west of the roundabout section. This marsh area also contains Cleavers; Hogweed; Bramble; Great Willowherb; Pendulous Sedge, Nettle; while it contained the additional species Yellow Iris, Field Scabious *Knautia arvensis*, False Oat-grass; Meadowsweet *Filipendula ulmaria*; Meadow Buttercup; Greater Stitchwort; Red Clover; White Clover; Yarrow and Cock's-foot with occasional sapling Alder and Goat Willow, and the invasive non-native species Butterfly Bush *Buddleja davidii*.

3.2.10.3 Dry meadows and grassy verges (GS2)

A small section of meadow is located to the east of the roundabout which contains Cow parsley; Dandelion; Bramble; Common Vetch; Meadow Buttercup; Bush Vetch; Cleavers; Downy Oat-grass *Avenula pubescens*; Hedge Bindweed; Cock's Foot; Creeping Buttercup; Creeping Thistle; Yorkshire Fog; Ragwort; Curled Dock; Broad-leaved Dock; Meadow Foxtail *Alopecurus geniculatus*; Hogweed; English Cinquefoil *Potentilla anglica*; Horsetail; Dandelion; Ragwort; Rough Hawk's-beard *Crepis biennis*; Red Fescue; Butterfly Bush; Yorkshire Fog; Wood Avens *Geum urbanum*; Ribwort Plantain; Spear Thistle *Cirsium vulgare*; Fleabane spp.; Herb Robert; Yarrow; Cock's-foot; Smooth Sow-thistle and American Willowherb.

3.2.10.4 (Mixed) broadleaved woodland (WD1)

A stretch of woodland is located east of this roundabout section. This woodland contains Sycamore; Ash; Hawthorn; Cypress Cupressus sp; Nettle; Alexanders *Smyrnium olusatrum*; Bramble; Ivy; Hogweed; Cleavers; Lords-and-ladies; Pendulous Sedge; Soft Shield-fern *Polystichum setiferum*; Harts-tongue Fern; Giant Knotweed *Reynoutria sachalinensis*; Wych Elm *Ulmus glabra*; Winter Heliotrope *Petasites pyrenaicus*; Palm Tree, Holly; Irish Yew, Cherry Laurel and Beech.

3.2.10.5 Treelines (WL1)

There are two small treelines located north of the roundabout. These treelines contain a mixture of tree species Alder; Ash; Wych Elm; Sycamore and Beech, with an understory of Bramble; Alexanders, Nettle; Water Figwort and Pendulous Sedge.

3.2.10.6 Scrub (WS1)

A patch of scrub exists to the east of the roundabout, adjacent to the local woodland. This scrub consists mainly of Bramble, while also containing occasional Cow Parsley; Tutsan; Hawthorn; Sycamore; Alder; Elder, Butterfly Bush; Pendulous Sedge; Dogwood and Rowan *Sorbus aucuparia*.

An additional patch of scrub is located in the west of this section, containing the same species as in the east.

3.2.10.7 Scrub / Dry meadows and grassy verges (WS1 / GS2)

There is one small section of meadow grassland, east of the roundabout, that is transitioning into a patch of scrub. The species in this area include False Oat-grass, a dense growth of Bramble, Hogweed, Meadow Buttercup, ferns, Great Wood-rush *Luzula sylvatica*, Ivy, Ribwort Plantain, Hedge Bindweed *Calystegia* spp.,

Fairy Flax *Linum catharticum*, Tufted Vetch *Vicia cracca*, Hawthorn, Creeping Thistle, Meadow Foxtail and Creeping Cinquefoil.

In the western part of this section, is a larger patch of meadow grassland / scrub. This western section also contains Bramble; Hogweed; Hawthorn; False Oat-grass; Meadow Buttercup; Creeping Cinquefoil; Creeping Thistle; Ribwort Plantain and Ivy.

In the east of this area of scrub/grassland, were the invasive non-native species Japanese Knotweed *Reynoutria japonica*, Winter Heliotrope and Giant Knotweed *Heracleum mantegazzianum*.

This western section also included additional species Yorkshire Fog; Meadowsweet; Cock's-foot; Common Vetch; Bush Vetch; Gorse; Ash; Nettle; Herb Robert; Silverweed; Great Willowherb; Sweet Vernal-grass; Pedunculate Oak; Ragwort; Alder; Smooth Sow-thistle; Smooth Meadow-grass *Poa pratensis sens lat*; Curled Dock; Dandelion; Cleavers; Perennial Rye-grass; Soft Rush; Hedge Woundwort; Common Couch *Elymus repens*; Perforate St John's Wort *Hypericum perforatum*; Pendulous Sedge; Colt's-foot *Tussilago farfara*; Smooth Hawkbit; Elm; Italian Alder *Alnus cordata*; Cow Parsley; Cluster Dock; Soft Rush; Sycamore; Horsetail; Meadow Vetchling *Lathyrus pratensis*; Black Medick; Common Bent *Agrostis capillaris*; Creeping Bent *Agrostis stolonifera* and Oxeye Daisy.

3.2.11 Habitat Map Area E: Measures 4.A, 4.B, 4.C and 5.D (Bride's Glen River and Bray Road)

Habitats for the western section are mapped in Figure 3-19 overleaf. Given the widespread nature of measures 4 and 5, these areas are addressed east and west of the pitch and putt.

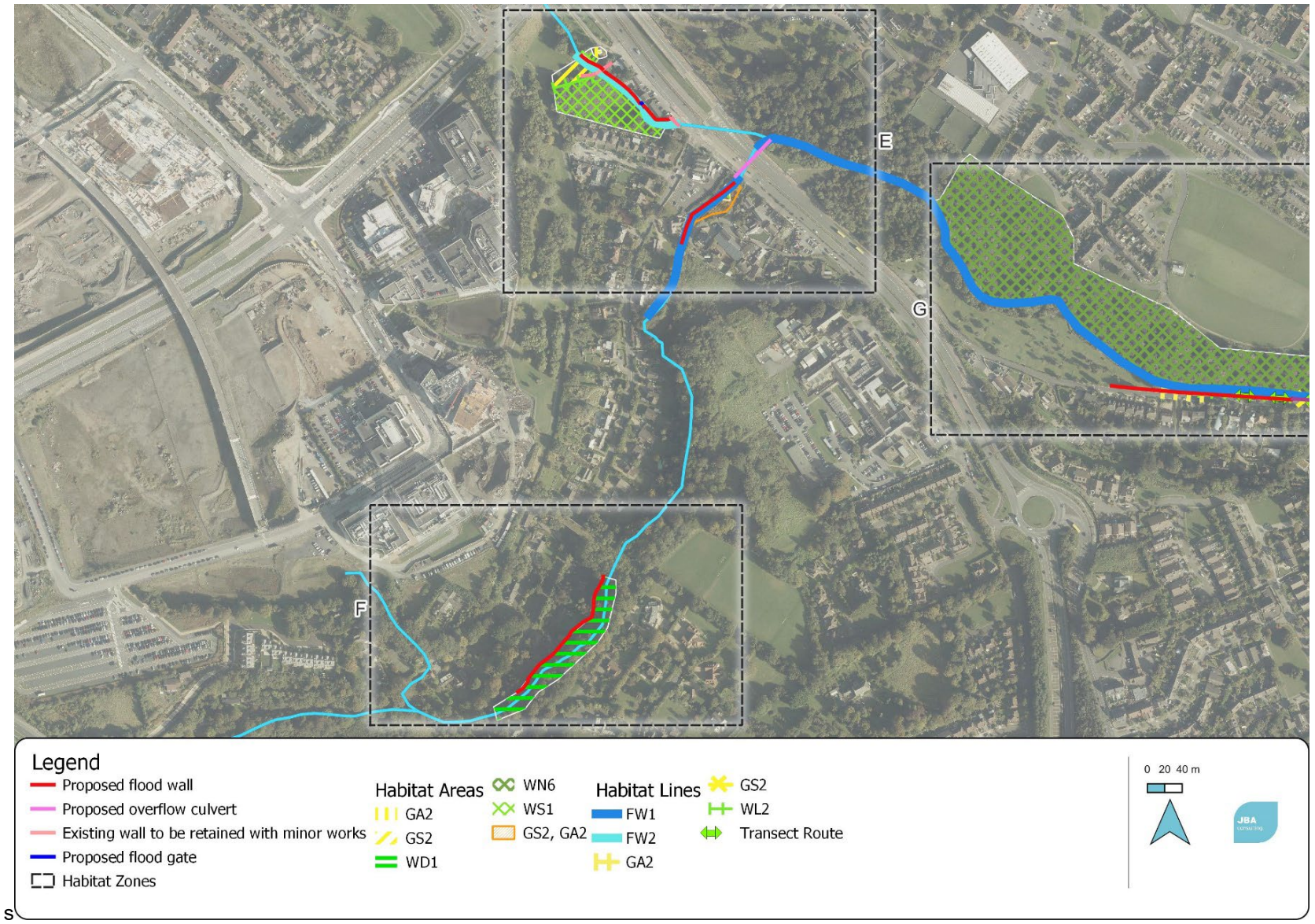

Figure 3-19: Brides Glen River and Bray Road habitats

Habitats for Area E are described below:

3.2.11.1 Eroding/upland rivers (FW1)

Throughout this section of the scheme is a continuation of the Shanganagh River (*Figure 3-20*). Where it flows under the railway line, there is no access to the north between houses and railway line. In this area, the watercourse is approximately 5.5 m wide, containing boulders cobbles, gravel. At the time of the survey it was approximately 0.5m deep and fast flowing. The channel banks are vegetated with Bramble, Alexanders, Hart's Tongue Fern, Pendulous Sedge and Reed Canary-grass *Phalaris arundinacea*. The banks also support the non-native species Winter Heliotrope and Butterfly Bush.

Figure 3-20: The lower section of the Shanganagh River (FW1) is confined by the walls on each bank.

3.2.11.2 Mosaic: Eroding/upland rivers / Depositing/lowland rivers (FW1 / FW2)

There is a section where the river transitions between an eroding and a depositing river. The river varies in depth from 10cm to 50cm deep, and is fast flowing, having a cobble base with sections of a sandy gravel substrate and stone walled edges. The banks of the river include Pendulous Sedge, Bramble, Ferns, Alder and Ash Saplings.

3.2.11.3 Dry meadows and grassy verges (GS2)

There are sections of meadow located throughout the northern parts of this section of the site which include unmown grassy areas within the local parkland and in the vicinity of some local businesses. These areas include Dandelion, White Clover, Red Clover, Hogweed, Creeping Buttercup, Ragwort, Common Bird's-foot-trefoil, Cuckooflower, Ribwort Plantain, Common Bent, Mouse-ear, Common Sorrel *Rumex acetosa* and Meadow Buttercup.

3.2.11.4 Dry meadows and grassy verges / Amenity grassland (improved (GS2 / GA2)

This habitat comprises Perennial Rye-grass, Dandelion, White Clover, Creeping Buttercup, Ribwort Plantain, Colts-foot, Cow Parsley, Hogweed, Broad-leaved Dock, Winter Heliotrope, Bush Vetch, Curled Dock, Rough Hawk's-beard, Common Vetch, Cleavers, False Oat-grass, Herb Robert, Common Bent, Nettle, Brome Bromus sp. and Three corner garlic. Common Carder Bee was also recorded in this area.

3.2.11.5 (Mixed) broadleaved woodland (WD1)

There are stretches of mixed broadleaved woodland along the banks of the river in the west of this section, one at the back of the local Pitch and Putt, which includes Alder, Sycamore and Ash, with an understory of Bramble and the invasive species Butterfly Bush and Fuchsia *Fuchsia magellanica*.

In the south of this section is another stretch of woodland, which contains the species Elm, Beech, Willow, Ash, Alder, Pine, Holly and an understory of Bramble and Fern (Soft Shield-fern *Polystichum setiferum* and Male-fern *Dryopteris filix-mas*, while continuing further south there are areas of Elder and Elm, with an understory of Nettle, Ivy, Lords-and-Ladies, Ramsons *Allium ursinum,* Sweet Violet *Viola odorata*, Speedwell Veronica spp., Lesser Celandine and Primrose *Primula vulgaris*.

There is a small section of broadleaved woodland in the west of the site adjacent to the river, which comprises Willow, Alder, Ash and a ground flora of Ivy, Pendulous Sedge, Cow Parsley and Lesser Celandine.

Figure 3-21: Mixed Broadleaved woodland (WD1) and Treelines (WL2) found along the Eroding River (FW1) running behind the houses next to Cherrywood Road.

3.2.11.6 Scrub (WS1)

There is an area of scrub which comprises: Elder; Bramble; Rowan, Wych Elm; Dog rose; Willow; and Hawthorn. This area has a ground flora of Cow Parlsey, Cleavers, Colt's-foot, Spurge, Broad-leaved Dock, Common Vetch, Germander speedwell, Teasel *Dipsacus fullonum*, Water Figwort, Pendulous Sedge and Hedge Bindweed. There are a number of non-native species including Leillandii, Buddleja, an ornamental Holly and Giant Hogweed.

Giant Hogweed was recorded within the scrubland located behind the local businesses.

3.2.12 Habitat Map Area F: Measures 5.A and 5.C (Commons Road, Brookdene and Bayview)

Habitat map for Area F: Measures 5.A and 5.C (is seen below in *Figure 3-22.Figure 3-7*

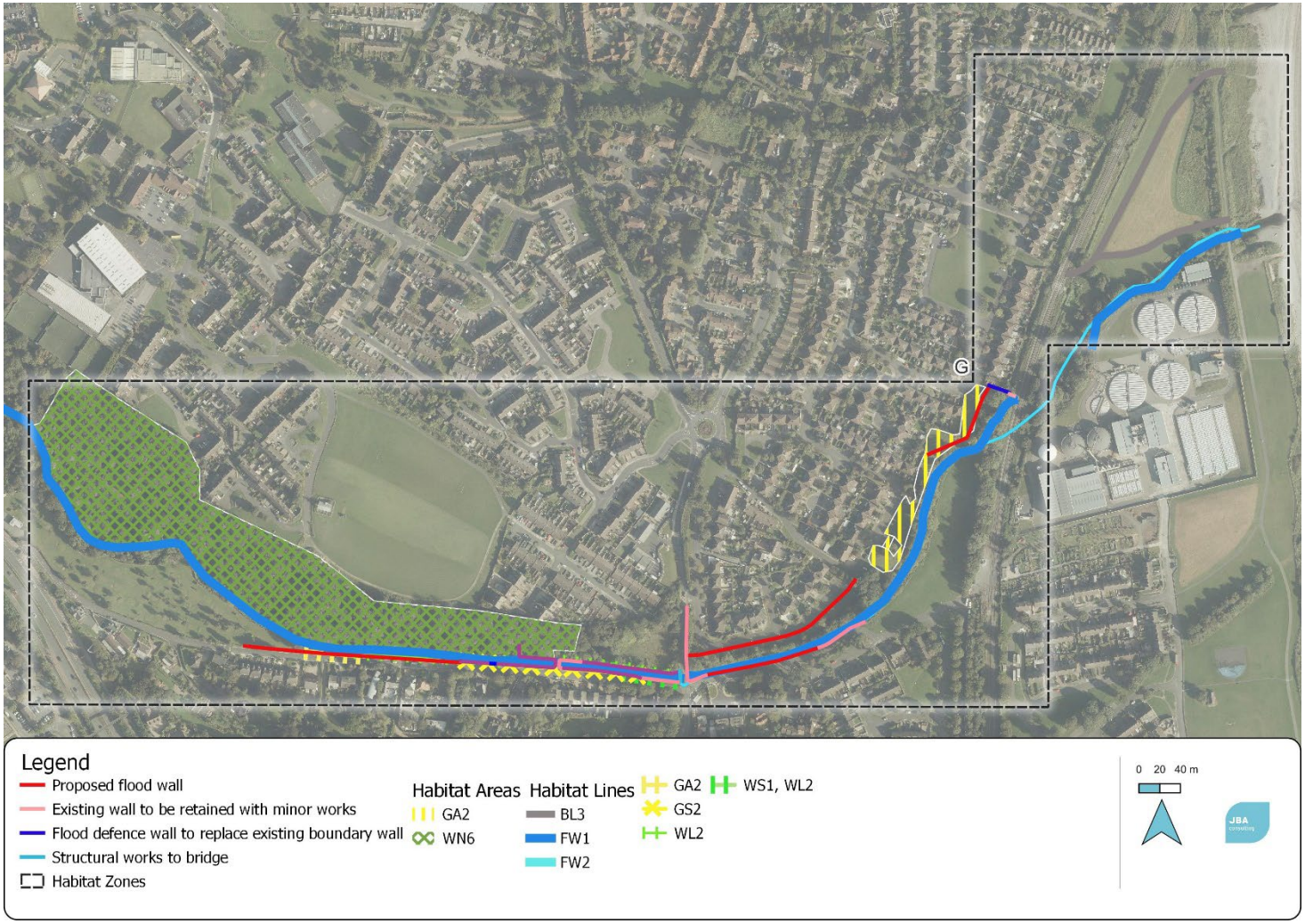

Figure 3-22: Commons Road, Brookdene and Bayview habitats

Habitats for Area F are described below:

3.2.12.1 Stone walls and other stonework (BL1)

There are stone walls in the east and the west of this section, these walls have no notable ecological characteristics, and no species present. The stone wall along the back of the houses had Bramble, Ivy and Willowherb.

3.2.12.2 Amenity grassland (Improved) – GA2

A small stretch of mown amenity grassland occurs along the footpath of Commons Road. This grassland patch contains Ragwort, Daisy, Perennial Rye-grass, Dandelion, Meadow Buttercup, Yarrow, Red Clover, Meadow Vetchling and Ribwort Plantain. Giant Hogweed was also present.

3.2.12.3 Dry meadows and grassy verges – GS2

Linear sections of grassy verge occur near to the banks of the River Shanganagh along Commons Road. These verges include Curled Dock, Nettle, Cleavers, Dandelion, Smooth Sow-thistle, Creeping Buttercup, Cut-leaved Crane's-bill *Geranium dissectum*, Wood Avens *Geum urbanum*, White Clover, Hogweed, Common Bent, Daisy, Tufted Hair-grass *Deschampsia cespitosa*, Herb Robert, Ribwort Plantain, False Oat-grass, Roughs Hawk's-beard, Black Medick, Nightshade, Bramble, Cow Parsley, French Crane's-bill *Geranium endressii*, Field bindweed, Ash, Cock's-foot, Lesser Trefoil *Trifolium dubium*, Perennial Rye-grass, Hedgerow Crane's-bill *Geranium pyrenaicum*, Field forget-me-not Myosotis arvensis, Field Marigold Calendula arvensis, Common Vetch, Field Mustard and the non-native species *Montbretia Crocosmia* x *crocosmiiflora*, Winter Heliotrope, Giant Hogweed, *Cotoneaster* sp and Sycamore.

There is a large meadow section in the east of this stretch of the project (Figure 3-23), near to the coastline. This meadow is divided by a footpath and contains Creeping Buttercup; Meadow Buttercup; Ribwort Plantain; Cuckooflower; Brome; Meadow -grass; Dandelion; Cock's-foot; Red Clover; Curled Dock; Hedge Mustard; Hogweed; Cow Parsley, Alexanders; Daisy; Red Fescue; Lesser Trefoil; Ragwort, Common Couch; Yorkshire Fog, Meadow Foxtail; Sweet Vernal-grass; Cleavers; Lesser Celandine; Rough Hawk's-beard and False Oat-grass.

Figure 3-23: Meadow patch in the east, near the coastline

3.2.12.4 Dry meadows and grassy verges / Scrub – GS2/WS1

The meadow near to the coastline begins to grade into an area of showing characteristics of scrub, gradually transitioning into a section more dominated by Common Reed *Phragmites australis* while also containing Horsetail; False Oat-grass; Creeping Thistle; Bramble; Bush Vetch; willowherb; Hogweed; Brome.; Ribwort Plantain; Alexanders and a single standing Hawthorn (Figure 3-24).

Figure 3-24: The transitional period between the meadow and the coastline in the far east of the scheme

3.2.12.5 (Mixed) broadleaved woodland - WD1

There are stretches of broadleaved woodland located throughout the Hacket Island housing estate. These include a main woodland stretch along the river bank (Figure 3-25), and a series of isolated woodland pockets among the housing estate's amenity grass areas (Figure 3-26).

The woodland stretches include a ground layer of Fumitory; Alexanders; Broad-leaved Dock; Cow Parsley; Dandelion; Creeping Buttercup; Nettle; Ivy; Hedge Bindweed; Bramble; Cleavers; dock; Creeping Thistle; Daisy; Shepherd's Purse; Germander Speedwell *Veronica chamaedrys*; Green Alkanet; Wood Speedwell *Veronica montana*, Spear Thistle; Herb Robert; Hogweed; Pendulous Sedge; Ribwort Plantain; Field Forget-me-not; Yarrow; Garlic Mustard; Wood Sorrell; Nettle; Wood Dock *Rumex sanguineus*; Wood Avens; Meadow Buttercup; Creeping Buttercup; Lords-and-ladies; willowherb; Cuckooflower; Ribwort Plantain; Cowslip *Primula veris*; and Cock's-foot.

The tree cover of this woodland stretch includes Sycamore; Alder; Pedunculate Oak; Ash; Crack Willow *Salix fragilis*; Turkey Oak Quercus cerris; Field Maple Acer campestre; Elm; Cherry; Crab Apple; Leaf Little Box Wood, Leylandi; Chestnut Saplings; Hawthorn, Cypress, White Willow, Japan Chestnut; Silver Birch; Linden; Privet; Sessile Oak, Cherry Laurel; Eucalyptus. This woodland stretch also contains some Three-cornered Garlic, Winter Heliotrope, Giant Hogweed; and Snowberry *Symphoricarpos albus*.

The pockets of woodland within these areas include Italian Alder; Yarrow; Beech; Wood Avens; Herb Robert; Nettle; Dandelion; Meadow Buttercup; *Fringecups Tellima grandiflora*; Common Vetch; Field Maple; Cottonwood; Ivy; Nipplewort, Firethorn *Pyracantha coccinea*, Hedge Periwinkle Vinca sp., Common Vetch, Ragwort, Creeping Thistle, Bent, Nettle, Burdock *Arctium minus*, Cleavers, Dock, Creeping Buttercup, Hogweed; Spear Thistle; Bramble; Field Maple; and Elm.

Figure 3-25: The woodland running along the River Shanganagh in the east of the scheme

Figure 3-26: The woodland pockets within amenity grasses in the east of the scheme

3.2.12.6 (Mixed) broadleaved woodland / Scrub – WD1 / WS1

There is a patch in the far east of the site, near to the grassy meadows and the coastline, that contains a mixture of mature trees and a scrub layer (*Figure 3-27*). This area contains Holly, Sycamore, Elm, Hart's-tongue Fern; Bramble; Cow Parsley; Soft Shield-fern *Polystichum setiferum*; Buckler Fern Dryopteris sp.; Hedge Bindweed; Nettle; Cleavers; Alder; Butterly Bush; Bluebell *Hyacinthoides non-scripta*; Green Alkanet; and Bush Vetch. There was also widespread Three-cornered Garlic and Giant Hogweed in this area.

Figure 3-27: Scrubby growth and woodland patch in the far-east of the site

3.2.12.7 Treeline – WL2

There is a small treeline at the entrance to the estate at Hacket Island. This treeline contained Elder; Beech; Bramble; Cleavers; Cherry Laurel; Creeping Buttercup; Dandelion; Nettle; Wild Cherry Sycamore; Hedge Bindweed; Broadleaf Dock, Alexanders, Daisy and Herb Robert.

Additional treelines include those along the Shanganagh Stream parallel to Commons Road. These treelines contain Wavy Bitter-cress *Cardamine flexuosa*; Lesser Celandine; Bush Vetch; Red Clover; Wood Spurge *Euphorbia amygdaloides*; Daffodil *Narcissus pseudonarcissus*; Dog Rose *Rosa canina*; willow; Alder; Pendulous Sedge; Butterfly Bush; Ivy; Tutsan, Water Figwort; Elder; Sycamore; Herb Robert; Birch; Horsetail; buttercup; *Vetch Vicia* spp.; White Willow and Gorse. These treelines also contained the garden escapee Cyclamen spp. and the invasive non-native Giant Hogweed. These treelines connect to the grassy verge located within this area.

3.2.12.8 Wet willow-alder-ash woodland – WN6

There is a section of the Loughlinstown Wood pNHA that is classified as a Wet willow-alder-ash woodland and runs along the Shanganagh River that is in close proximity to some of the works. This downstream section of the pNHA includes Ash; Willow; Alder; Sycamore; Tutsan; Nettle; Herb Robert; Ivy; Bramble; Creeping Buttercup; Pendulous Sedge; Common Vetch; Cow Parsley; Soft Shield-fern; Hart's-tongue Fern; Elder; and Hawthorn. This woodland also had widespread Giant Hogweed along the woodland both through the main body of the woods, and along the riverbank.

3.2.13 Invasive Non-native Species (INNS)

Table 3-2 below provides a list of non-native species recorded during the ecological surveys. It includes species, their level of impact, and whether they are listed on the third schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I No.477/2011.

Table 3-2: INNS recorded within or immediately adjacent to study area

Invasive Non-Native Species	Impact	Regulation S.I. 477/2011
American Skunk Cabbage	Medium	Yes
Butterfly Bush	Medium	No
Cherry Laurel	High	No
Giant Butterbur		No
Giant Hogweed	High	Yes
Japanese Knotweed	High	Yes
Rhododendron	High	Yes
Sika Deer	High	Yes
Sycamore	Medium	No
Three-corner Garlic	Medium	Yes
Winter Heliotrope	Low	No

3.3 Offshore Reefs

Reefs [1170] are a protected habitat and Qualifying Interest of the nearby Rockabill to Dalkey Island SAC (*Figure 3-28* below). A comprehensive survey of the reefs within the vicinity of Killiney Bay was completed by MERC consultants in 2022 (MERC, 2022) on behalf of DLRCC. These reefs included Littoral (intertidal) reef habitats and Sublittoral (Subtidal) reef habitats.

Littoral reef habitats include all areas of geogenic rock (bedrock, boulders and cobbles) which occur in the intertidal zone (the area of the shore between high and low tides) as well as the marine communities, and their associated species, that colonise this area are adapted to withstand a range of physical processes, not least the diurnal flooding and ebbing tides.

The sublittoral reef habitat is generally divided into two categories, infralittoral and circalittoral. The infralittoral reef habitat is the area in the shallow subtidal zone and typically supports seaweed communities. As depth increases, and light levels drop further the circalittoral zone commences. This zone is characterised by animal dominated communities, as opposed to the algae dominated communities of the infralittoral zone.

Littoral and sublittoral reefs within Killiney Bay are mapped below (Figure 3-28) in relation to the proposed site location. A sublittoral reef is present approximately 300m off the coast of the proposed sports facility. Littoral (intertidal) reef communities are also present approximately 900m north-east of the site. The sublittoral reef is mainly made up of two biotopes, 1) Sediment-affected or disturbed kelp and seaweed communities and 2) Echinoderms and crustose communities (MERC Consultants, 2022). The reef habitats in Killiney Bay are not included within either Dalkey Islands SPA or Rockabill to Dalkey Island SAC.

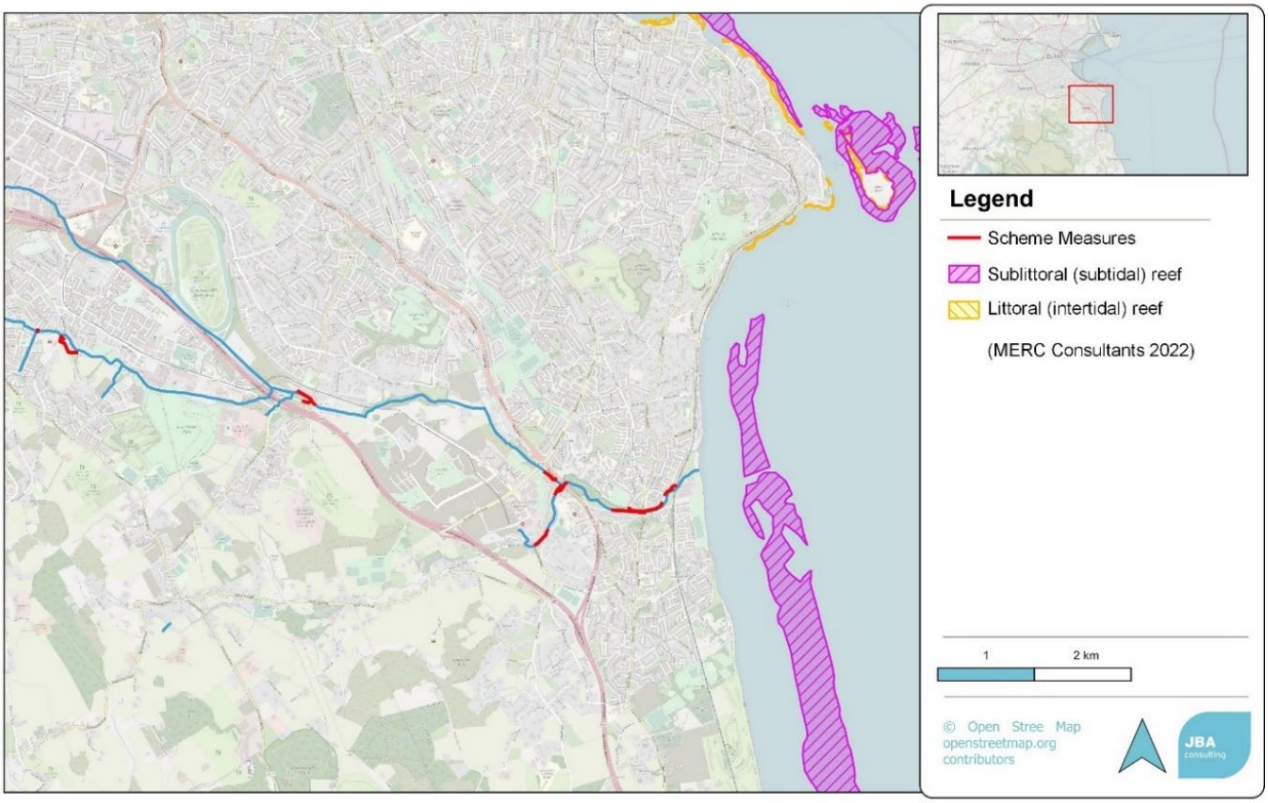

Figure 3-28 Offshore reefs

3.4 Waterbodies within the Vicinity of the Proposed Site

The entirety of the proposed project is located within the Water Framework Directive (WFD) Ovaca-Vartry catchment, and within the Dargle_SC_010 sub-catchment (EPA, 2023). The scheme takes place along various points of the (Carrickmines Stream_010), and along the (Shanganagh_010). These two watercourses are both considered to be "Not at risk", while they are also considered to be of "Good" quality. These locations of the scheme along these waterbodies in and are shown in *Figure 3-29*. Water from both of these streams flows east before reaching the Irish Sea.

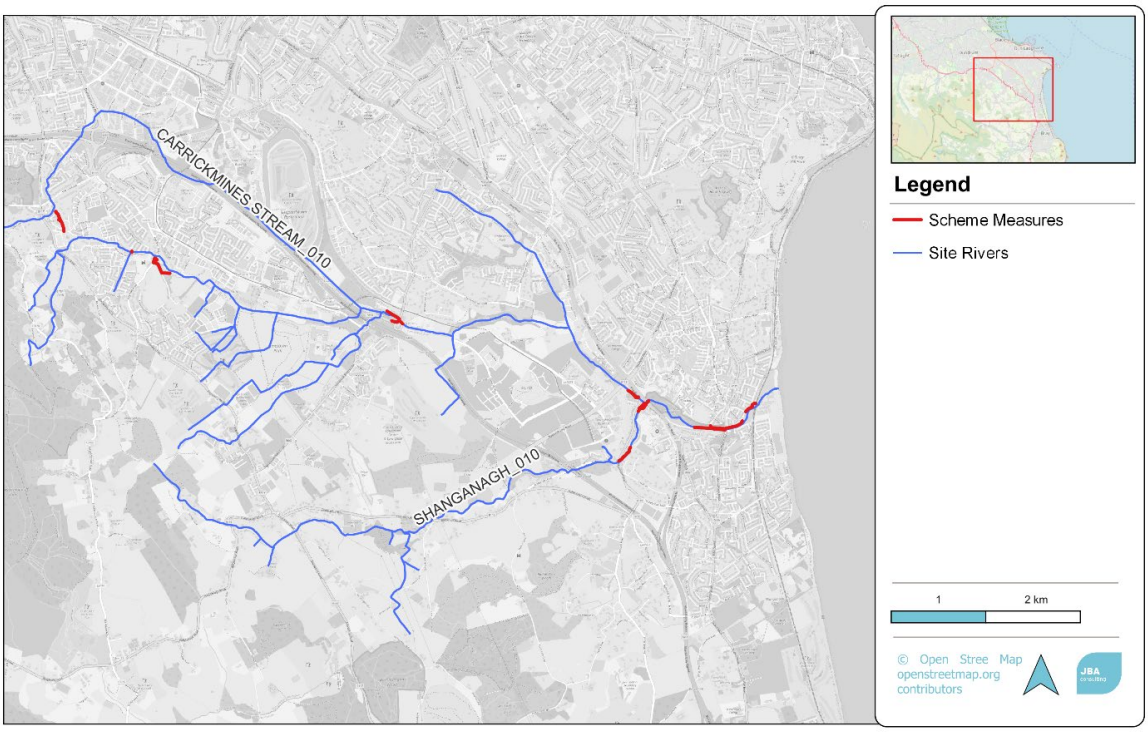

Figure 3-29: River waterbodies in the vicinity of the site (OSM, 2023)

3.5 Groundwater

The entirety of the scheme is located within the Wicklow groundwater body Figure 3-30. The Wicklow groundwater body currently holds "Good" WFD status (2016-2021); and is considered to be 'At Risk'.

Due to the spread of the measures for the FRS, there is a variety in the underlying bedrock throughout the site. Sections are dominated by Granite with Muscovite Phenocrysts of the Type 3p Muscovite Porphyritic formation, Granite with microcline phenocrysts of the Type 2 Microcline Porphyritic formation, and Dark blue-grey slate, phyllite and schist of the Maulin Formation. Meanwhile, the soil is derived of a variety of Made Ground, Alluvial deposit and Till derived chiefly form Granite. Given this spread of bedrock and derived soils, the permeability of the site's different areas similarly are varied, ranging from Low in the eastern areas, to Moderate in the western areas, while there are intermittent sections that have yet to have their permeability classified. This spread of permeability is mirrored in the recharge capacity throughout the site, ranging from 7.5-20% in areas of Low permeability, and a higher recharge rate of 85%. The variation of the groundwater's permeability and recharge is reflected in the changing vulnerability throughout the site, shown in Figure 3-31.

The site is split between two types of aquifer. Most of the site is "Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones", an aquifer with poor connections and a low permeability, low storage, short flow paths, and a very restricted discharge to streams. The site also contains a small area of "Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones" Vulnerability which also has poor connections, low permeability, discharge restricted to a few hundreds of metres and general restricted groundwater discharge to streams.

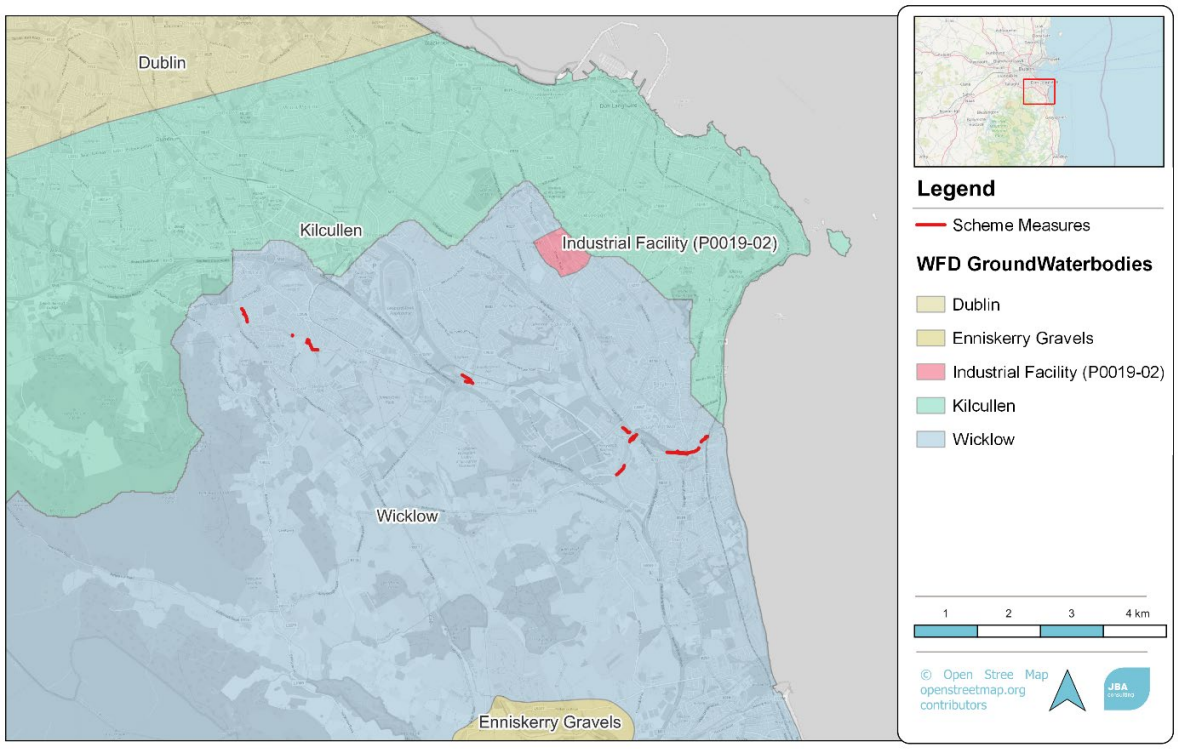

Figure 3-30: Groundwater bodies in the vicinity of site (OSM, 2023)

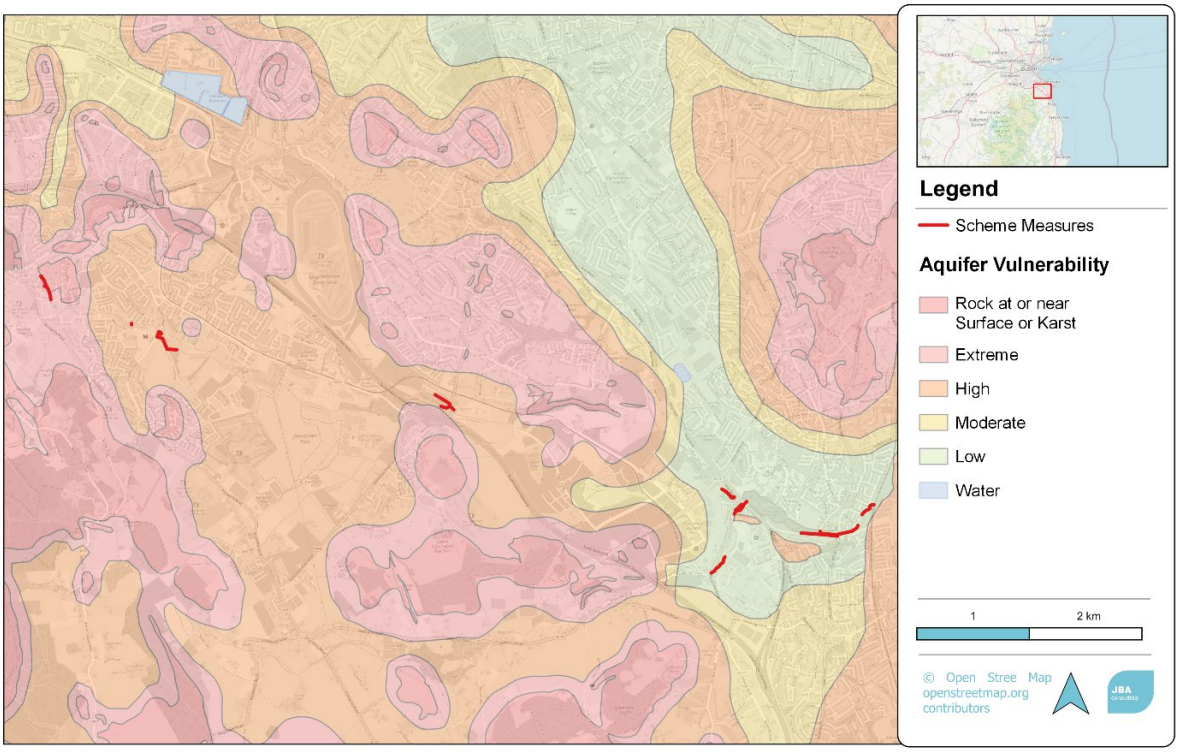

Figure 3-31: Aquifer vulnerability of the site (OSM, 2023)

4 Natura 2000 Sites

The DEHLG (2009, Rev 2010) guidance identifies that Screening for Appropriate Assessment of a plan or project should consider the following Natura 2000 sites:

- Any Natura 2000 sites within or adjacent to the plan or project area.
- Any Natura 2000 sites within the likely zone of effect of the plan or project. This is dependent on the nature and scale of the plan, with 15km generally recommended for plans, but potentially much less for projects.
- Any Natura 2000 sites that are more than 15km from the plan or project area, but may potentially be affected upon, for example, through a hydrological connection.
- Furthermore, the OPR guidance is to use a Source-Pathway-Receptors model, therefore only directly connected sites will be retained (OPR, 2021).

Natura 2000 sites were examined using the source-pathway receptor model (OPR, 2021) in relation to surface water and groundwater / ground-to-surface water pathways (i.e., local surface water sub-catchments and groundwater bodies / aquifers). Sites within a 15km range were included for those with a downstream hydrological connection.

In respect to ZoI for air pollution (emissions and dust), Natura 2000 sites within a 250m buffer zone of the site were considered' as per the Institute of Air Quality Management's 'Guidance on the Assessment of Dust from Demolition and Construction' (IAQM, 2024), including ex-situ foraging habitats utilised by QI species associated with these local Natura 2000 sites. Additionally, a 400m disturbance buffer from boundaries of the proposed Scheme has been incorporated into the ZoI in order to account for local QI species potentially foraging within ex-situ habitats (see Cutts et al, 2013).

The Natura 2000 sites within the range are listed in *Table 4-1* below and their location are shown in Figure 4-1 (overleaf).

Table 4-1 below lists a total of 4 European Natura 2000 sites (see Figure 9-2) which were determined to be within the ZoI of the proposed Scheme.

Table 4-1: Natura 2000 sites located within the Zone of Influence (ZoI) of the proposed development.

Natura 2000 site	Site Code	Approximate Distance from Site	Hydrological Distance from Site
Ballyman Glen SAC	000713	4km	n/a
Bray Head SAC	000714	5.5km	n/a
Carrigower Bog SAC	000716	14.6km	n/a
Dalkey Islands SPA	004172	3.4km	3.4km downstream (in bay)
Glen of the Downs SAC	000719	10.7km	n/a
Glenasmole Valley SAC	001209	9km	n/a
Howth Head SAC	000202	13.1km	n/a
Howth Head Coast SPA	004113	13.5km	n/a
Knocksink Wood SAC	000725	5km	n/a
North Bull Island SPA	004006	10.2km	n/a
North Dublin Bay SAC	000206	10.2km	n/a
North-West Irish Sea cSPA	004236	10.2km	n/a
Rockabill to Dalkey Island SAC	003000	1.8km	1.8km downstream (in bay)
South Dublin Bay and River Tolka Estuary SPA	004024	4.8km	n/a
South Dublin Bay SAC	000210	4.8km	n/a
Wicklow Mountains SAC	002122	4.7km	n/a
Wicklow Mountains SPA	004040	4.9km	n/a

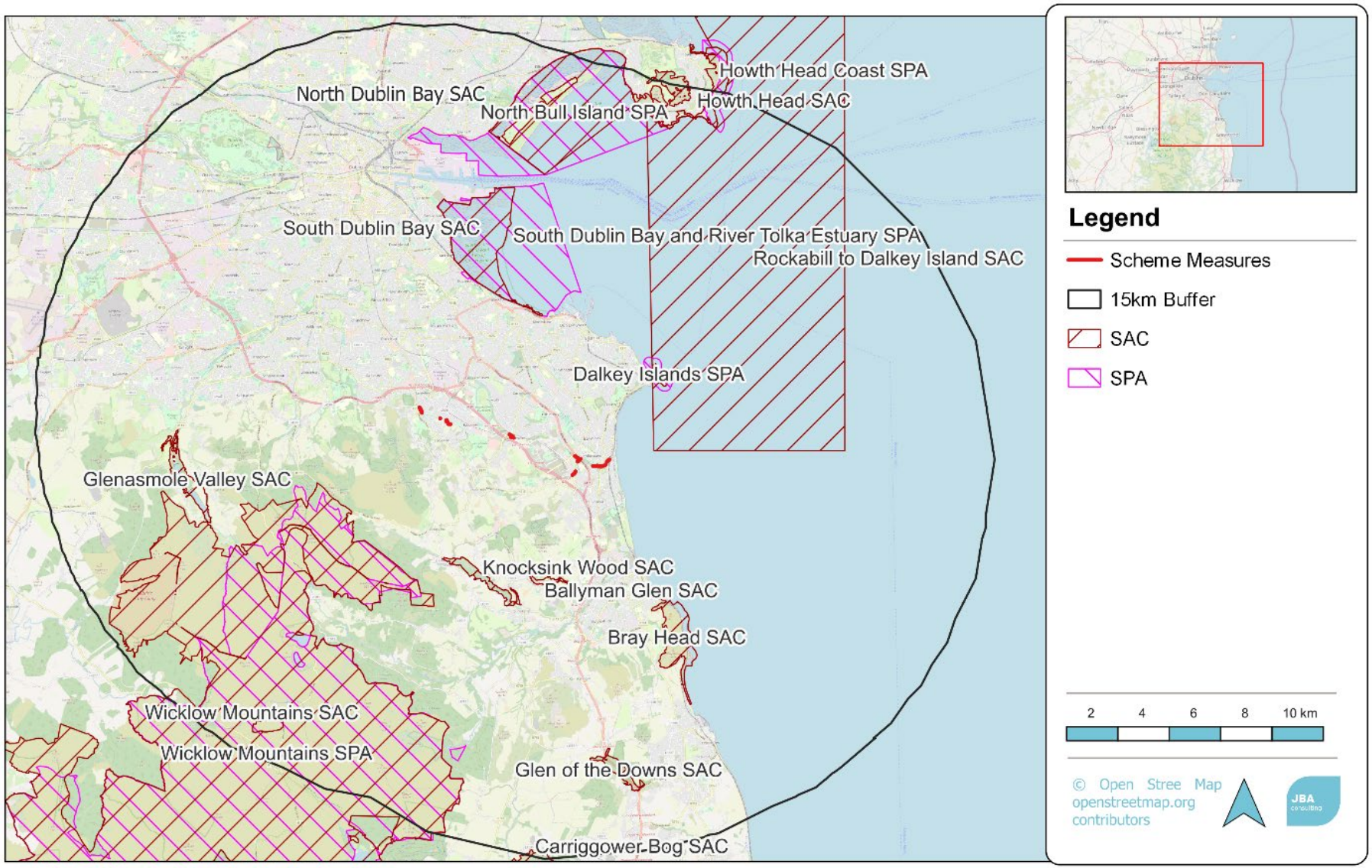

Figure 4-1: Natura 2000 sites within the ZoI (OSM, 2024)

Of the Natura 2000 sites listed above, the following are excluded from the report for any further consideration due to a lack of connectivity to the site:

- Ballyman Glen SAC
- Bray Head SAC
- Carrigower Bog SAC
- Glen of the Downs SAC
- Glenasmole Valley SAC
- Howth Head SAC
- Howth Head Coast SPA
- Knocksink Wood SAC
- North Bull Island SPA
- North Dublin Bay SAC
- North-West Irish Sea cSPA
- South Dublin Bay and River Tolka Estuary SPA
- South Dublin Bay SAC
- Wicklow Mountains SAC
- Wicklow Mountains SPA

Given their proximity and the associated hydrological connections to the site, the following Natura 2000 sites (*Figure 4-2*) are considered further within this report.

- Dalkey Islands SPA
- Rockabill to Dalkey Island SAC

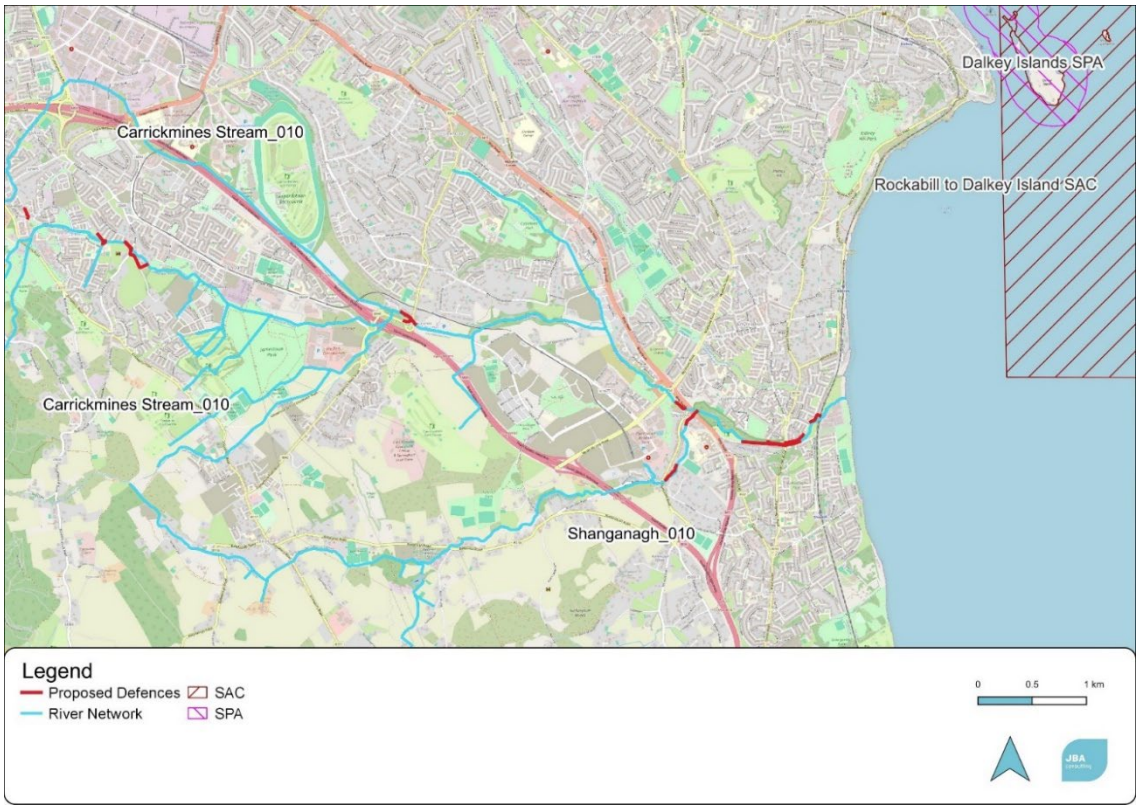

Figure 4-2: Natura 2000 sites with hydrological connection within ZoI (OSM, 2024)

Site descriptions, Qualifying Interests (QIs) and threats/pressures for these two Natura 2000 sites are provided in Table 4-2 (overleaf)

Neither of these Natura 2000 sites have groundwater dependent QI's and as such groundwater impact pathways are not considered further in this assessment.

Table 4-2: Site briefs; Qualifying Interests; and project-relevant threats /pressures and their effects and sources in relation to the connected Natura 2000 sites within the 15km ZoI (including hydrological connectivity extension).

Site Name	Brief	Qualifying Interests	Project-relevant Threats / Pressures: Impact (Source)
Dalkey Islands SPA	The site comprises Dalkey Island, Lamb Island, Maiden Rock, the intervening rocks and reefs between Dalkey Island, Lamb Island and Clare Rock, and the sea area around Maiden Rock to a distance of 100 m. The site is of importance for both breeding and staging Sterna terns. There is a well-established colony of *Sterna hirundo* and smaller numbers of *Sterna paradisaea*. *Sterna dougallii* bred in 2003 and 2004, one of only three known sites in the country - this came about after several years of conservation management aimed at attracting the species. The site along with other parts of south Dublin Bay is used by the three Sterna tern species as a major post breeding/pre-migration autumn roost area. (NPWS, 2015)	- Roseate Tern *Sterna dougallii* [A192] - Common Tern *Sterna hirundo* [A193] - Arctic Tern *Sterna paradisaea* [A194] (NPWS, 2022)	N/A (Full list of threats / pressures - EEA, 2020a
Rockabill to Dalkey Island SAC	The selected site forms a strip of dynamic inshore and coastal waters in the western Irish Sea, extending approximately 40 km in length and encompassing a range of comparatively shallow marine habitats, including diverse seabed structures, reefs, islets and islands. The area selected for designation represents a key habitat for the Annex II species - harbour porpoise, within the Irish Sea. The species occurs year-round within the site and comparatively high group sizes have been recorded. Porpoises with young (i.e. calves) are observed at favourable, typical reference values for the species. The selected site contains a wide array of habitats believed to be important for harbour porpoise including inshore shallow sand and mud-banks and rocky reefs scoured by strong current flow. The site also contains two Annex II seal species – Harbour seal *Phoca vitulina vitulina*, Grey seal *Halichoerus grypus* for which terrestrial haul-out sites occur in immediate proximity to the site. Bottlenose dolphin *Tursiops truncatus* has also occasionally been recorded in the area. Along the eastern seaboard the habitat type Reef is uncommon due to prevailing geology and hydrographical conditions. Expansive surveys of the Irish coast have indicated that the greatest resource of this habitat within the Irish Sea is found fringing offshore islands which are concentrated along the Dublin coast. These Reefs are subject to strong tidal currents with an abundant supply of suspended matter resulting in good representation of filter feeding fauna such as sponges, anemones and echinoderms. (NPWS, 2014)	- Reefs [1170] - Harbour Porpoise *Phocoena phocoena* [1351] (NPWS, 2013)	Discharges: High Impact (outside) Siltation rate changes, dumping, depositing of dredged deposits: Low Impact (outside) (Full list of threats / pressures - EEA, 2019b)

* = priority Annex I habitat

= indirect threat via the increase in the local populace and recreational activities as a result of the development.

5 Screening Assessment

5.1 Introduction

This screening exercise will focus on assessing the likely adverse effects of the project on the Natura 2000 sites identified in Section 4 and listed below:

- Dalkey Islands SPA
- Rockabill to Dalkey Islands SAC

This section identifies the likely significant effects which may arise as result of the proposed project. It then goes on to identify how these effects could potentially impact on the Natura 2000 sites listed in above. The significance of likely effects is also assessed, with any potential in-combination effects also identified.

5.2 Assessment Criteria

5.2.1 Description of the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to effects on the Natura 2000 sites

Potential adverse impacts that could cause a significant effect on the qualifying interests of the Natura 2000 sites, during the construction and operational phases of the project, will impact on the sites via surface water pathways, groundwater pathways and land and air pathways. Surface water pathways can impact on surface water quality and surface water dependent habitats and species. Groundwater pathways can impact on groundwater quality and quality of groundwater dependent habitats and species. Land and air pathways can impact by direct physical disturbance and dust or other air-based emissions.

The proposed project is not anticipated to have likely significant effects on the qualifying interests of the Dalkey Islands SPA and Rockabill to Dalkey Islands SAC. The rationale for including and excluding specific impacts via the main pathways is given in more detail in the following sub-sections

5.2.2 Surface Water Pathways

The site is located along the Carrickmines Stream (Carrickmines Stream_010), and sections of the Shanganagh River (Shanganagh_010) which has its outfall into the Killiney Bay (*Figure 5-1*).

The QIs of Dalkey Islands SPA are Roseate Tern, Common Tern and Arctic Tern each of which forage in shallow coastal waters within 10km of their breeding/staging sites. Each of these species are presumed to forage within Killiney Bay and any potential impact on their prey species could indirectly impact on the success of their populations.

Harbour Porpoise *Phocoena phocoena* are a QI of the Rockabill to Dalkey Island SAC and prey on pelagic shoaling fish and inshore benthopelagic species which converge on inlets and shallows such as those between headlands and islands. They are dependent on the success of these populations as a food source and any impact on these species via potential surface water pathway may have a negative impact on this QI.

Reefs are a QI of the Rockabill to Dalkey Island SAC. Degradation of the water quality of Killiney bay via a surface water pathway may impact negatively on this species community.

Construction Phase

During the works, potential sediment could be released, and accidental oil and concrete spill could enter the stream which would end up downstream.

There is a very low potential for a relatively small volume of hydrocarbons and/or cement to be spilled via machinery on-site during the construction phase. This likelihood is considered low as all refuelling other than that required for the rotary boring rig will occur outside of the site area, with all fuel stored away from the site area also. There will be a relatively low level of machinery active on site at any one time and the duration of each works phase is considered short.

Given the relatively small scale of the various elements of the project and their construction on a staged basis, any such pollutions would be limited and there would be a significant dilution effect when the water enters the marine environment. Rockabill to Dalkey Island SAC covers a length of approximately 40km off the Dublin coast and there is no likelihood of any significant effects on the QIs of Rockabill to Dalkey Island SAC.

The QIs of Dalkey Islands SPA (Arctic Tern, Common Tern and Roseate Tern,) nest and roost on the land area of Dalkey Island, and no impact from reduced water quality is anticipated on the nesting habitat due to lack of hydrological connectivity.

Tern species forage in the Irish Sea, and any potential impact on their prey species could indirectly impact on the success of their populations. However, given their approximate foraging range of 10km and the wide area of the Dublin Bay, and offshore sandbanks of the Irish Sea available for foraging, as well as the scale and nature of the project, it is not anticipated to have a significant impact on these species, and therefore no likely significant effect on Dalkey Island SAC.

Increased velocities resulting from containment of flood waters within the river will result in a small increase (3.45%) in flow rate at the Killiney Bay outfall during peak flow (1% AEP). This increase is not considered to be high enough to result in any significant increases in beach erosion or changes in flow currents within Killiney Bay. The likelihood of impacts on Reefs or Harbour Porpoise QI's is considered less than significant.

Given initial filtration by topsoil in the event that small number of hydrocarbons were released, paired with the temporary and localised nature of the project and the very large dilution factor of Killiney Bay/Irish Sea, it is not anticipated that the proposed project will have a significant effect on the QI species. Therefore, a significant effect on any of the QIs is not expected for the Rockabill to Dalkey Island SAC and Dalkey Islands SPA.

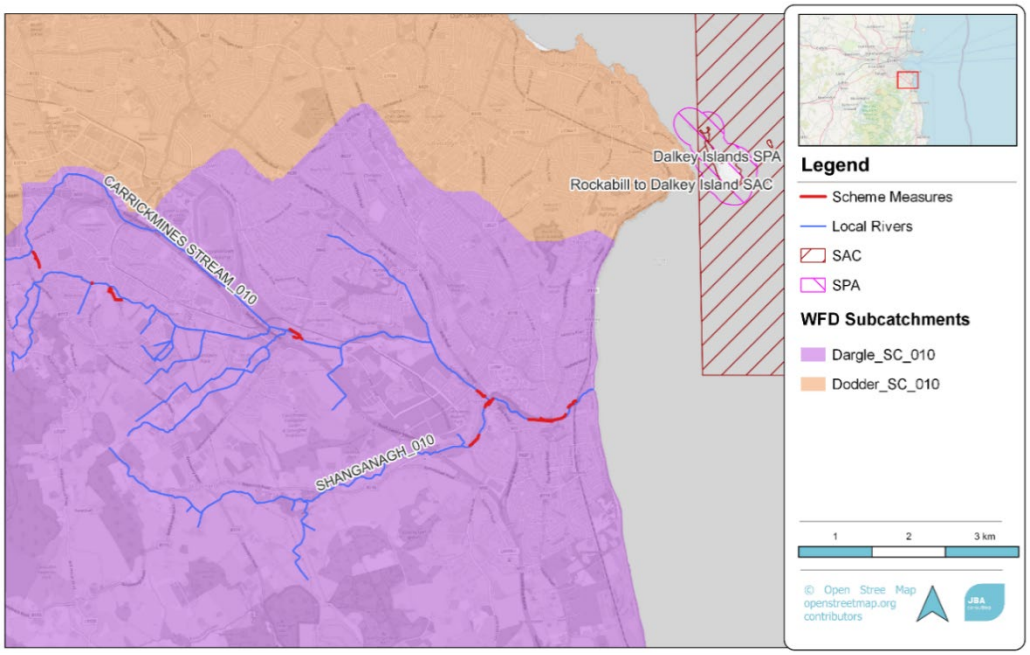

Figure 5-1: Study area location and Natura 2000 sites, with local surface water sub-catchments and watercourses (OSM, 2024)

5.2.3 Land and Air

5.2.3.1 Land (physical on-site and noise disturbance)

Since the proposed site is in a largely urban area, are a series of small constructions and are not directly adjacent to any Natura 2000 site, impacts via land pathways are not expected on any of the Natura 2000 sites. The site is approximately 1.8km from Rockabill to Dalkey Island SAC, and 3.4km from Dalkey Islands. The locations of the measures for the scheme do not provide any ex-situ foraging opportunities for the bird species of the Dalkey Islands SPA, thus the proposed works will not cause disturbance to any of the QIs of the SAC and SPA.

5.2.3.2 Noise

The threats of lower importance facing the Common Porpoise within Rockabill to Dalkey Island SAC include noise nuisance and noise pollution (NPWS, 2019). The induction of behavioural changes based on acoustical disturbance is known as the Temporary Threshold Shift (TTS), which suggested by Tougaard et al (2015) could be reached at Sound Exposure Level (SEL) of 100-110db in relation to pulses that are derived from pile driving works. A review of the EIAR for the River Poddle Flood Alleviation Scheme and the Arklow Bank Wind Park NIS (RPS, 2021) indicates that sound level data on piling and ancillary operations in Ireland estimates typical noise levels to reach 89dB at 10m, meanwhile the TTS injury zone for porpoises is estimated to a several hundred meters. These noise estimations are provided for works that take place within the marine environment. The proposed works are more than 300m from the seashore at its closest point, with the railway line and Shanganagh River riparian zone acting as a buffer between the works and the seashore. Vibration levels and noise within Killiney Bay as a result of the proposed works is considered below that of the general background noise created in the vicinity of the shoreline. As such there will be no impact on the QIs of the Natura 2000 sites within

5.2.3.3 Air Pollution

Dust release and vehicle emissions can travel considerable distances and could potentially affect the Annex habitats and species of the two Natura 2000 sites, even if they are not located within close distance to the proposed project. The distance and direction of travel is dependent upon wind speed and direction. The proposed site has a west south-west prevailing wind year-round (Windfinder.com, 2022), therefore, any dust generated on-site will most likely be transported towards Rockabill to Dalkey Island SAC and Dalkey Islands SPA. Given the small scale of the project, the urban location and the distance from the Natura 2000 sites, any dust and vehicle emissions are not anticipated to have a significant impact on the QIs of the Natura 2000 sites.

5.2.4 In Combination Effects

As part of the Screening for an Appropriate Assessment, in addition to the proposed works, other relevant plans and projects in the region that may induce in-combination or cumulative effects must also be considered at this stage.

5.2.4.1 Plans

The following projects or plans were identified as potential sources of cumulative effects:

- Dun Laoghaire Rathdown County Development Plan 2022-2028
- Dun Laoghaire Rathdown Coastal Defence Strategy
- Greater Dublin Drainage Strategy
- Third Cycle River Basin Management Plan for Ireland 2022-2027

Dún Laoghaire Rathdown County Development Plan 2022--2028

The County Development Plan (DLRCC, 2022a) has a vision and policy statement that aims to continue to facilitate appropriate levels of sustainable development predicated on the delivery of high quality community, employment and recreational environments - allied to the promotion of sustainable transportation and travel patterns - all the while protecting Dún Laoghaire Rathdown's unique landscape, natural heritage and physical fabric, to ensure the needs of those living and working in the County can thrive in a socially, economically, environmentally sustainable and equitable manner. An Appropriate Assessment Screening and an Appropriate Assessment Natura Impact Statement (NIS) was carried out on the plan. This concluded that there are no likely significant direct, indirect or secondary impacts of the project on any Natura 2000 sites (DLRCC, 2022b).

This report outlines the potential for the plan to have a negative impact on water quality within the streams and rivers which flow into Killiney Bay, however a number of Policies and Objectives outlined in the same development plan mitigate for any significant decrease in water quality, which is outlined in Policy Objective EI1: 'Sustainable Management of Water' and other objectives outlined in section 10.2 of the plan. The same plan also identifies the requirement for Killiney Bays protection in Policy Objective GIB7, GIB9 and GIB10 which refer to assurances that there is no water quality deterioration within the bay.

In spite of these objectives and mitigation measures, there is still potential for a less than significant deterioration in water quality which may have a cumulative impact on water quality when combined with the less than significant surface water impacts outlined in Section 5.2.2 above. This cumulative impact is considered below.

Dun Laoghaire Rathdown Coastal Defence Strategy

The DLRCC coastal defence strategy is a management plan designed to provide a framework for policy decision making and action related to both the provision and the management of sustainable coastal defence policies (Malachy Walsh and Partners, 2010a). The plan summarises its key points as:

- The identification of coastal defences, habitats, natural features, landscape and amenity issues.
- The identification of risk to people, property and natural environment from coastal erosion, cliff instability, wave action and tidal flooding.
- The determination of appropriate options and policies for each discrete length of coastline which are technically, environmentally and economically sound.
- The recommendation of the extent and type of future coastal defences.
- The provision of a prioritised programme of works.

While dealing with the key coastal processes of

- Water levels, including normal tide levels, extreme water levels and the potential impact of sea level rise.
- Waves, including normal and extreme offshore waves and normal and extreme nearshore waves,and the joint occurrence of extreme waves and extreme water levels.
- Wave modelling was used to estimate nearshore extreme waves and nearshore wave climate for use in outline design and in an assessment of sediment transport due to wave action.
- Tidal current modelling was used to assess potential sediment transport along the study coastline due to tidal currents and to assess the tidal currents for use in the assessment of wave driven sediment transport.
- Sediment transport. An assessment of sediment transport was undertaken in order to provide an understanding of the coastal process context in which the coastal defence strategy is developed.
- The assessment includes wave and tidal current driven transport and the likely sediment budget relating to the study shoreline.

- The type and condition of existing coastal defences was also assessed during the study and input into the risk assessment, and the evaluation of options.

The principal potential impacts of the coastal defence measures to reinforce the cliffsides along the Bray - Shanganagh coastline. It has been assessed that in this area, by reinforcing the cliffside along Bray-Shanganagh area would reduce the overall sedimentation flow reaching the coast along the beach levels of the Killiney area. This reduction of sediment input, which would range from being significant if large lengths of the coastline are protected from further erosion, which have been suggested to be delayed until the point that they are actually necessary.

The coastal defence strategy has identified these impacts, and provided suggestions that would not interfere in a major way with alongshore sediment transfer, allowing for the continuous movement of materials through longshore drift inhibited by coastal defences. Specific impacts regarding the area around Killiney Beach include:

Coastal Defence at Killiney Station

The area around Killiney Station has been identified as being at risk of cliff instability. Currently there is a low wall fronted by a footpath as a means of preventing erosion. A selection of options for this cliff instability has been provided to stabilise the cliff, with the preferred option being to utilise soil nailing and shotcreting (the spraying of concrete) over the full height of the cliff face which have been assessed result in impacts limited to the area of the works.

Coastal Defence North of Killiney Station

The area north of Killiney station has a well-vegetated cliff with the appearance of stability, however this stability is uncertain. Localised repairs are required in this area, including the monitoring of the cliff slopes.

Conclusion

An SEA (Malachy Walsh and Partners, 2010b) and NIS (Malachy Walsh and Partners, 2010c) have been completed for the Dun Laoghaire Rathdown Coastal Defence Strategy. Mitigation measures have been put in place in regard to concrete, fuel, oil, and timing of works. Including these preventative measures, each project as part of the coastal defence strategy will be subject to future AA Screenings and EcIAs. In regard to the impacts of the coastal protection plan has been assessed to have an insignificant impact on Annex I habitats, designated sites, seabed habitats, coastal processes and seabirds.

Following the initial assessment of the coastal defence strategy, a review of the plan was conducted in 2023 (MWP, 2023) to identify the number of the recommendations have been undertaken; further erosion and damage to the Dun Laoghaire coastline has been observed. At the time of this review in 2023, the coastal defences north and around Killiney Station had not been carried out, however, surveys had shown that the areas had not significantly deteriorated since the initial assessment.

This review includes specific mentioning of the offshore reef habitats that were discovered in the interim of the reports and assessed that works south of White Rock (in the area of Killiney Beach) would pose no threat to these habitats.

Overall, the Dun Laoghaire Rathdown Coastal Defence Strategy is not considered to adversely impact any Natura 2000 sites, or features of otherwise ecological importance, nor it is it expected to contribute to any cumulative or in-combination effect.

Greater Dublin Drainage Strategy

The Greater Dublin Drainage Strategy sets out the strategic planning for the development of waste water treatment in the Greater Dublin area in relation to the Ringsend waste water treatment plant (WWTP) Upgrade, Greater Dublin Drainage Project and associated wastewater network drainage projects (Irish Water, 2018b). The Ringsend WWTP Upgrade includes plans to expand the WWTP to its ultimate capacity, together with associated network upgrades required. The Greater Dublin Drainage Project is planned to relieve both the Ringsend WWTP and network loading by construction of a new WWTP at Clonshaugh, an orbital sewer and provision of an outfall pipe discharging 1km north-east of Ireland's Eye. The Ringsend WWTP upgrade is in progress and carried out in stages, with an increased capacity of 400,000 PE by Q1 2020 and the ultimate capacity of 2.4 million PE to be in operation by 2024 (Irish Water, 2018b).The Greater Dublin Drainage Project is strategically important to the Dublin Region in that it will provide capacity for residential and commercial growth (Irish Water, 2018b).

Less than significant impacts from the proposed drainage strategy may contribute to a cumulative impact on the Dalkey Island SPA and the Rockabill to Dalkey Island SAC.

Overall, the Greater Dublin Drainage Strategy is not considered to adversely affect any Natura 2000 site, nor is it expected to contribute to any cumulative or in-combination effects.

River Basin Management Plan for Ireland 2018-2021 / 2022-2027

The 2nd cycle River Basin Management Plan (RBMP) for Ireland 2018-2021 sets out the actions that Ireland will take to improve water quality and achieve 'good' ecological status in water bodies (rivers, lakes, estuaries and coastal waters) by 2021 (DoHPLG, 2018a). Changes from previous River Basin Management Plans is that all River Basin Districts are merged as one national River Basin District. The Plan provides a more coordinated framework for improving the quality of our waters — to protect public health, the environment, water amenities and to sustain water-intensive industries, including agri-food and tourism, particularly in rural Ireland.

The first cycle of River Basin Management Plans included the Eastern River Basin District - River Basin Management Plan 2009 – 2015 (WFD, 2010). The plans summarised the waterbodies that may not meet the environmental objectives of the WFD by 2015 and identified which pressures are contributing to the environmental objectives not being achieved. The plans described the classification results and identified measures that can be introduced in order to safeguard waters and meet the environmental objectives of the WFD;

- Prevent deterioration of water body status.
- Restore good status to water bodies.
- Achieve protected areas objectives.
- Reduce chemical pollution of water bodies.

The River Basin Management Plan for Ireland (2018-2021) outlines the new approach that Ireland will take to protect our waters over the period to 2021. It builds on lessons learned from the first planning cycle in a number of areas:

- stronger and more effective delivery structures have been put in place to build the foundations and momentum for long-term improvements to water quality.
- a new governance structure, which brings the policy, technical and implementation actors together with public and representative organisations. This will ensure the effective and coordinated delivery of measures.

Ireland's third River Basin Management Plan 2022-2027 (EPA, 2021a) was out for public consultation until March 31st 2022. The Consultation report was published in July 2022. Following review of the submissions, the DHLGH will commence a review and where necessary update the draft RBMP with a view to finalisation and publication in Q3/Q4 of 2022.

The 3rd cycle Catchment Reports were published in August 2024. These assessments provide an overview of the situation in the catchment and will help support the River Basin Management Plan 2022-2027 implementation process.

Each Catchment Report provides a summary of the water quality assessment outcomes for respective catchments, including status and risk categories, significant threats and pressures, details on protected areas, and areas for action and a comparison between the various cycles.

The third cycle Catchment Report for Ovoca-Vartry Bay Catchment (EPA, 2024) identified that between Cycles 2 and 3 there has been an overall slight improvement in the catchment's status. The overall change in quality between Cycles 2 and 3 include an increase in three waterbodies achieving a High Status. There was also a decrease in waterbodies that achieved a Bad status, going from 3% in Cycle 2 to 1% in Cycle 3. The number of waterbodies which are achieving a Good and Poor statuses remains unchanged between cycles, while there is a reduction of waterbodies achieving a moderate status by three. There remains to be eighteen waterbodies that are unassigned.

Less than significant impacts from the proposed River Basin Management Plan may contribute to a cumulative impact on the Dalkey Island SPA and the Rockabill to Dalkey Island SAC. This cumulative impact is described below.

The Third Cycle River Basin Management Plan for Ireland 2022-2027 is not anticipated to contribute to significant cumulative or in-combination effects.

5.2.4.2 Other Projects

Figure 5-2, Figure 5-3 and Figure 5-4 show the location of other projects and Table 5-1 below provides summary details of the projects/developments that have the potential to have in-combination effects with the proposed flood relief scheme. Planning Applications were retrieved from Data.gov.ie - Planning Application Sites in 2024.

Only those projects whose duration of permission overlaps with the likely construction period of the proposed development (i.e., 2025 onwards) are included. Small developments such as house extensions and alterations, or the construction of a single dwelling or structure, have been excluded as the likely effects of such developments will not be significant either in isolation or cumulatively with the proposed development, except where they are taking place adjacent to or in close proximity to the proposed defences.

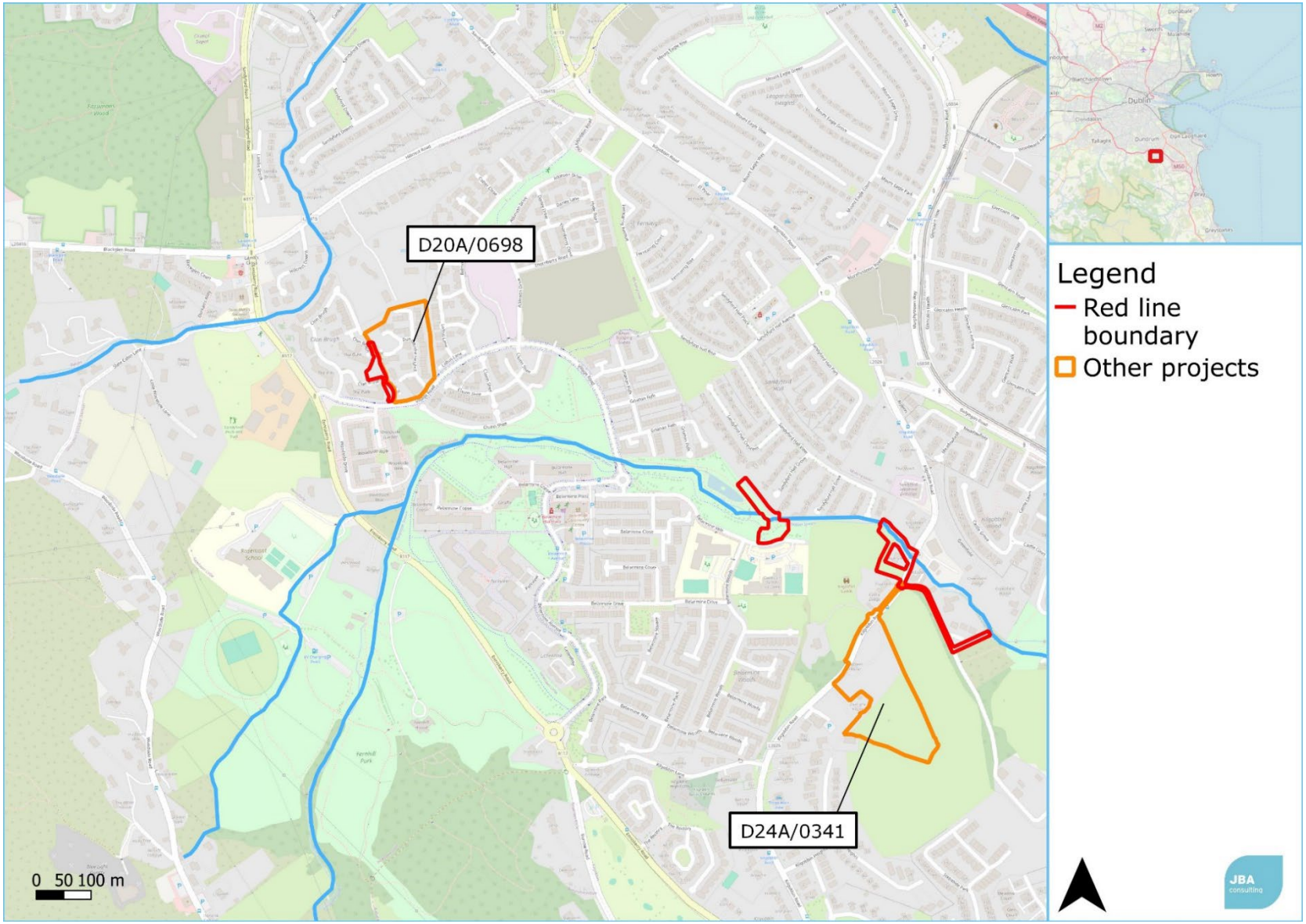

Figure 5-2: Other projects considered, Clon Brugh to Kilgobbin Road

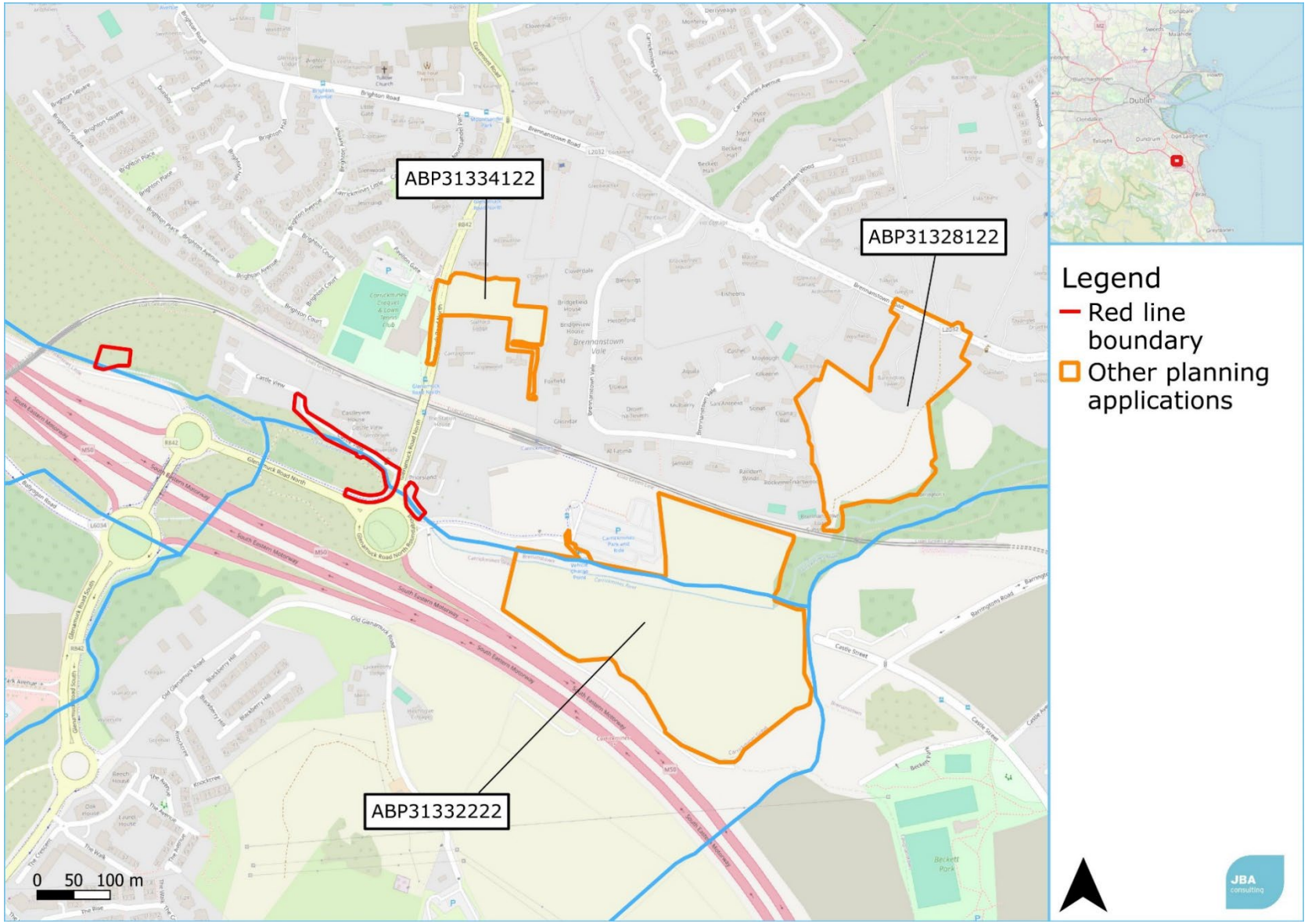

Figure 5-3: Other projects considered, Glenamuck Road North Roundabout

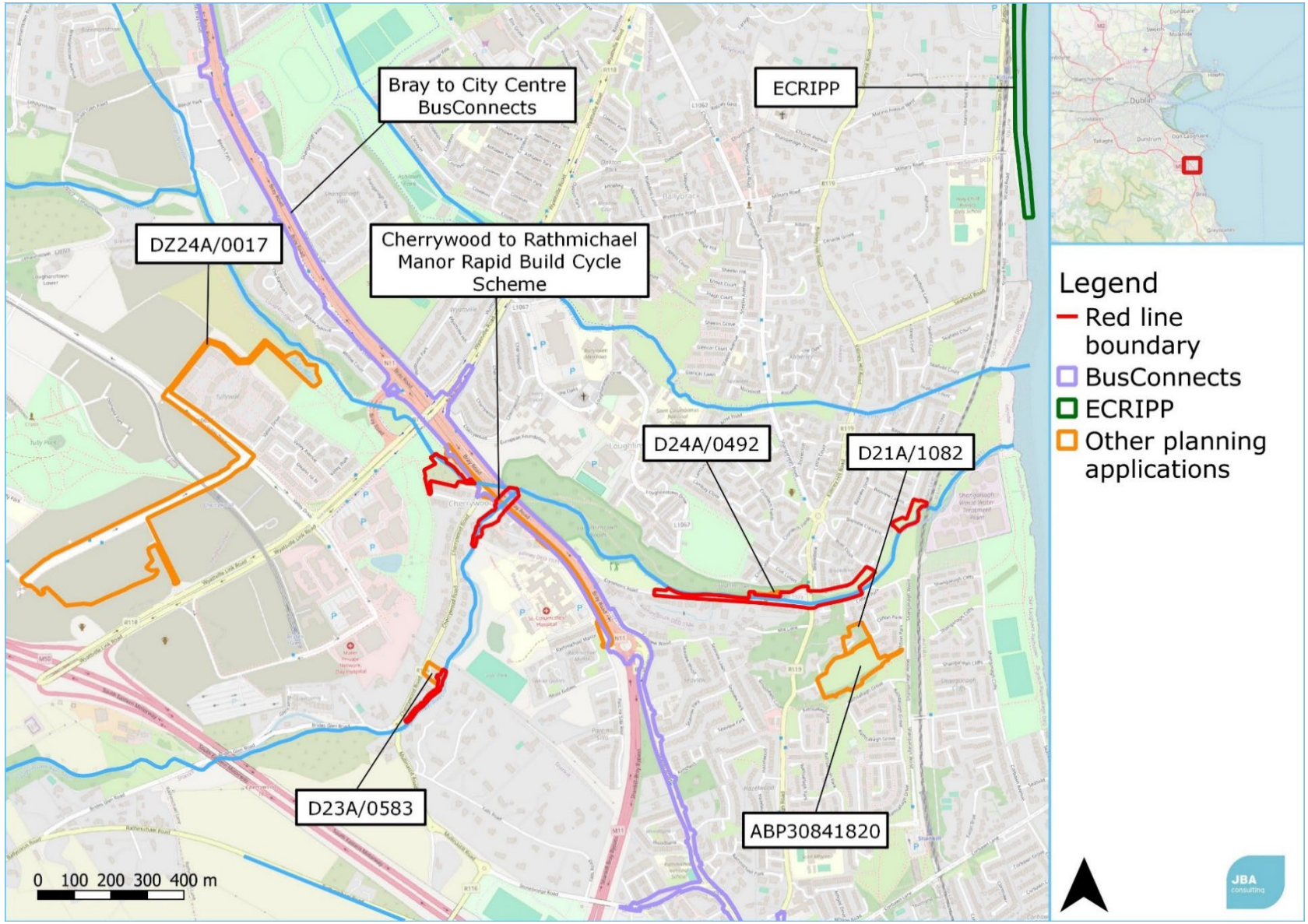

Figure 5-4: Other projects considered, Cherrywood to Bayview

Table 5-1: List of projects considered for In-combination Effects

Project name or Reg. Ref.	Location	Description	Status	ZoI Overlap Potential for In-Combination Effect	Conclusion: Is there potential for other projects to act in-combination with the proposed project which will result in likely significant effects on the Natura 2000 sites?
Cherrywood to Rathmichael Manor Rapid Build Cycle Scheme	Bray Road, Cherrywood Park to Rathmichael Manor	The Cherrywood to Rathmichael Manor Rapid Build Cycle Scheme is approximately 720 metres long. The scheme commences at the Cherrywood Park access, routing along Bray Road on the western side of the N11 as far as Rathmichael Manor. Access will be maintained to all existing properties along the route. A 'cycle street' design is proposed along the Bray Road (slip road from N11) which utilises the low-traffic nature of the Bray Road. The 'cycle street' transitions briefly into a shared path where the N11/Bray Road slip lane merges onto the cycle street. A two-way cycle track and footpath is proposed south of the N11/Bray Road slip road. The two-way cycle track and footpath lead to a new pedestrian and cycle crossing at Rathmichael Manor. The works will include ancillary upgrade works to the public footpath, modifying the St Columcille's Hospital bus stop (stop 3143) to an island-style bus stop together with a pedestrian crossing of the cycle lane at that point. A 3-metre-wide shared path will link the footpath and cycle track with the Loughlinstown pedestrian bridge. The scheme will include additional traffic calming measures including new road markings, signage and two raised tables along the Bray Road.	Due to go to construction Q2 2025. Construction expected to be finished before FRS construction begins.	Shares the same surface water sub-catchment with the proposed Scheme, therefore has the capacity to act in a cumulative or in-combination manner in respect surface water impacts on the downstream Natura 2000 sites. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. Construction expected to be finished before FRS construction begins.

ABP31332122	1.938 ha at Balally and Woodside at Blackglen Road and Slate Cabin Lane, Dublin 18	Permission for Strategic Housing Development consists of demolition of the existing, derelict, former residential structures on the site and construction of 101no. residential units and a creche (13,127 sq m gross floor area in total). The residential element comprises a mix of houses (9no. 2-beds, 16no. 3beds, 6no. 4 beds and 1 no. 5 beds); duplexes (3no. 2 beds and 10no. 3 beds) and apartments (14no. 1 beds, 35no. 2 beds and 7no. 3 beds). The houses are provided in 2 storey terraces and include one dormer-style unit. The duplexes and apartments are provided in 2no. blocks (A and B) connected by a landscaped podium with undercroft car parking level (including plant/ stores). Block A is 3-4 storey in height and contains 52no. apartments. It has frontage to Blackglen Road. Block B is to the rear and contains 13no. duplexes and 4no. apartments. It is 3-4 storeys in height. All houses are provided with private rear gardens and all apartments and duplexes are provided with private terraces or balconies. The creche (109.6 sq. m) is located in Block B and includes a dedicated open space of 120 sq m. The development includes 2no. ESB Substations (c. 16 sq. m each) and bin stores (c. 22.5 sq. m). The roof of Block A includes a green sedum roof and photovoltaic panels. Public open space is provided in 3no. separate areas, with a total of 3,559 sq. m provided. 1,458 sq.m of semi-private communal open space is provided at podium level between Blocks A and B. Road infrastructure works proposed on site to include new internal access road, cycle and pedestrian facilities. 1no. new vehicular access to the scheme from Blackglen Road (currently subject of improvement works) with dedicated pedestrian and cycle access, 2no. additional, dedicated pedestrian accesses to the site from Blackglen Rd and 1no. new pedestrian and cycle access to the site from Slate Cabin Lane. 170no. car parking spaces, including: 83no. spaces at undercroft level and the remaining 87no. spaces at surface level. 5no. motorcycle spaces are provided at undercroft level. 152no. bicycle parking	Case is due to be decided by 02/08/2022	Shares the same surface water sub-catchment with the proposed Scheme The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effects. AA screening assessed that this project lacks direct connection to Natura 2000 sites to act in a cumulative or in-combination manner during construction and operation.

		spaces are provided, of which 126no. are provided within the undercroft (includes 2no. cargo cycle spaces). The remaining 26no. spaces are provided at surface level in a covered cycle store. And, all associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works, including drainage and SUDS infrastructure. The application contains a statement setting out how the proposal is consistent with the objectives of the Dún Laoghaire - Rathdown County Development Plan 2016 – 2022 (currently in force) and the Dún Laoghaire - Rathdown County Development Plan 2022 – 2028 (adopted, not yet in force). The application contains a statement indicating why permission should be granted for the proposed development, having regard to a consideration specified in section 37(2)(b) of the Planning and Development Act, 2000, as amended, notwithstanding that the proposed development materially contravenes a relevant development plan or local area plan other than in relation to the zoning of the land.			

D20A/0698	Dun Gaoithe at Aikens Village, Village Road, Sandyford, Dublin 18, to the west of 29 Dun Gaoithe Heights, 40-43 Dun Gaoithe Heights and to the southwest of Dun Gaoithe Hall	Retention and completion of a retaining wall in the residential development, permitted under planning reg. ref. D16A/0393, and subsequent planning reg. ref. D18A/0509. Permission is sought to retain and complete a partially built retaining wall along the western part of the site, along with all associated site works.	Permission granted 30/07/2021	Shares the same surface water sub-catchment with the proposed Scheme, therefore has the capacity to act in a cumulative or in-combination manner in respect surface water impacts on the downstream Natura 2000 site. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. The small scale of project and its location set back from a mostly dry swale is not likely to have a significant effect on any European sites alone, and also in-combination with the proposed project.

D24A/0341 ABP-320491-24	Site at Oldtown House, Kilgobbin road, Dublin 18.	The proposed development provides for the construction of 89 no. residential units, comprising 39 no. houses and 50 no. apartments, to be provided as follows: 1 no. single storey, 3 bed (Type H3D) house; 12 no. 2 storey, 3 bed (Types H3B, H3B1, H3BL, and H3BR) houses; 3 no. 2 storey, 3 bed (Types H3C, H3CL, and H3CR) houses; 4 no. 2 storey, 4 bed (Types H4A1 and H4A2) houses; 4 no. 2 storey, 4 bed (Type H4B) houses; 1 no. 2 storey, 4 bed (Type H4C) house; 14 no. 3 storey, 4 bed (Types H4D, H4D1, H4DL, and H4DR) houses; 4 no. 1 bed apartments; 45 no. 2 bed apartments; and 1 no. 3 bed apartment. The 50 no. apartments are proposed to be provided within 1 no. part 4 and part 5-storey apartment block, over a lower ground floor level. Balconies are provided for all apartments on the western and eastern elevations. The houses consist of 2 and 3 storey terraced, semi-detached and detached dwellings and one single storey dwelling. An ESB substation, plant rooms, external apartment storage, and bin and cycle storage areas are proposed within the lower ground floor of the apartment block, and bin and bicycle stores are proposed for the houses. The proposed development includes for the removal of part of an existing wall fronting Kilgobbin Road to facilitate the proposed new vehicular access from Kilgobbin Road, alterations to and the use of the existing entrance for a pedestrian and cyclist access only, provision of a new pedestrian ramp connection to Kilgobbin Road from the proposed public open space adjacent to the Kilgobbin Road boundary wall in front of Oldtown House, and associated alterations and conservation works within the setting of and to Oldtown House (RPS Ref.: 1700), including new boundary treatments, with the house	Refused by DLRCC. Appeal lodged with ABP	Shares the same surface water sub-catchment with the proposed Scheme, therefore has the capacity to act in a cumulative or in-combination manner in respect surface water impacts on the downstream Natura 2000 sites. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. Considering the Mitigation measures included in the NIS for this project to avoid significant impacts and that the project alone will not adversely affect the integrity of any European sites, the project will not act in combination with the Proposed project to have a likely significant effect on any European sites.

		remaining in residential use. The application includes the site of an Inn (Recorded Monument Ref. No. DU025-017002) which is incorporated into Oldtown House, and the ruins of structures associated with the Inn will be retained as part of the private open space for Oldtown House, with public open space located to the south and east of the ruins and Oldtown House. The proposed development also includes a single storey dwelling within the former kitchen garden area associated with the Inn site, situated to the west of the protected structure. A total of 133 no. car parking spaces, 173 no. cycle parking spaces and 2 no. motorcycle spaces are proposed. The proposal includes associated internal roads, pedestrian and cycle paths, and the provision of the proposed infrastructure up to the application site boundary to facilitate future connections to adjoining lands. The associated site and infrastructural works include site clearance, foul and surface water drainage, including attenuation system, provision of public and communal open space, cycle stores / spaces, boundary treatment, lighting, landscaping and PV panels at roof level. The proposal incorporates alterations and improvements to Kilgobbin Road, including relocation of a bus stop, 2 no. pedestrian crossings, and raised tables/ramps for the purpose of traffic calming.			

ABP31334122	Glenamuck Road North, Carrickmines, Dublin 18, (Bounded by 'Tullybeg to the north, 'Chigwell to the northeast, 'Stafford Lodge' to the south, and 'Carricail' to the southeast)	Permission for a strategic housing development shall provide for the construction of (a) 118 no. residential apartment units in the form of 3 no. residential blocks of apartments ranging in height from 4 storey's and transitioning to 6-7 storeys overall. The overall development proposal shall provide for the following: Block A (7 storeys) comprising 44 no. units (13 n0. 1 bed units, 28 no. 2 bed. units and 3 no. 3 bed units); Block B (6-7 storeys overall) comprising 38 no. units (11 no. 1 bed units, 26 no. 2 bed units and 1 no. 3 bed units); and Block C (6 storeys overall) comprising 36 units (10 no. 1 bed units; 22 no. 2 bed units and 4 no. 3 bed units); Each new residential unit has an associated area of private open space in the form of balcony / terrace area and set back upper floor levels; Open space (approx. 2,071 sqm) is provided by one major centrally located public open space (1158.4 sqm) between blocks A and B which include a play area of 63.2 sqm, two further communal open space areas are provided adjoining Blocks B (471.8 sqm) & Block C (440.8 sqm); Communal Area located at the ground floor of Block B (approx. 161.3 sqm) comprising of a shared working space (35.6 sqm), meeting rooms (42.2 sqm.), a gym (36.6 sqm) and changing/tea stations (46.7 sqm) is also proposed; 2 no. basement level areas (approx. 2,340.9 sqm) are also proposed at lower ground / ground floor level of Blocks A, B (1,470.0 sqm) and C (834.9 sqm) and include car parking, bicycle parking, refuse storage areas, plant areas and ESB Substation which is located between Block B and C; A total of 103 no. car parking spaces (67 no. at basement level and 36 no. at surface level to include 17 no. electric power points and 5 no. accessible parking spaces) are proposed. In addition, 5 no. motorcycle parking spaces (3 no. at basement level A and B, and 2 no. at basement level C). A total of 280 no. bicycle parking spaces (254 no. at basement level and 26 no. at surface level) are also proposed; Proposals for vehicular and pedestrian access comprise via Glenamuck Road North and all associated upgrade works; The access point to the	Case is due to be decided by 03/08/2022-	Shares the same surface water sub-catchment with the proposed Scheme, therefore has the capacity to act in a cumulative or in-combination manner in respect surface water impacts on the downstream Natura 2000 sites. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. Considering the Mitigation measures included in the NIS for this project to avoid significant impacts and that the project alone will not adversely affect the integrity of any European sites, the project will not act in combination with the Proposed project to have a likely significant effect on any European sites.

		south (via Carricáil) is for pedestrians and cyclists only; Associated site and infrastructural works including the provision for water services, foul and surface water drainage and connections; attenuation proposals; permeable paving; all landscaping works to include new tree and hedge planting; green roofs; boundary treatments; internal roads and footpaths; and electrical services. The application contains a statement setting out how the proposal will be consistent with the objectives of the Dún Laoghaire Rathdown County Development Plan 2016-2022. The application contains a statement indicating why permission should be granted for the proposed development, having regard to a consideration specified in section 37(2)(b) of the Planning and Development Act, 2000, as amended, notwithstanding that the proposed development may materially contravenes a relevant development plan or local area plan other than in relation to the zoning of the land.			

ABP31332222	Priorsland, Within the Townsland of Carrickmines Great and Brennanstown, Dublin 18	Permission for development at this site. The site comprises land adjacent the Carrickmmines Stream and Carrickmines Luas Park & Ride. The application relates to development within the Cherrywood Strategic Development Zone (SDZ) and is subject to the Cherrywood Planning Scheme, 2014 (as amended). The development will comprise a mixed-use Village Centre and residential development as follows: 402 no. apartments (comprising 146 no. 1-beds; 218 no. 2-beds and 38 no.3-beds) within 6 no. blocks (Blocks A-F) ranging in height up to 5 storeys with basement/undercroft parking areas. 41 no. terraced/semi-detached/detached houses (comprising 19 no. 3-beds and 22 no. 4-beds). A supermarket (c.1,306 sq.m), 7 no. retail/retail services units (c.715 sq.m total gross floor area); 2 no. non retail/commercial units (c.213 sq.m total gross floor area); creche (c.513 sq.m), gym (c.155 sq.m), community space (c.252 sq.m) residential facilities (c551.8 sq.m total gross floor area), office/high intensity employment use (c.708 sq.m). Provision of car/bicycle/motorcycle parking at basement/undercroft/ground level. ESB sub-stations/switchrooms/kiosks, waste storage areas, plant areas. Provision of the first phase of Priorsland Public Park along the Carrickmines Stream and additional public and communal spaces. Provision of an acoustic barrier along the southern/ south-western edge of the site adjacent to the M50. Construction of Castle Street on the subject lands and two road bridges across the Carrickmines Stream, one to serve a future school site, the second to provide interim pedestrian and cyclist access to the Carrickmines Luas Station and future Transport Interchange. Provision of a pedestrian bridge from the Village Centre to Priorsland Park. The proposed development includes for all associated site development works landscaping, boundary treatments and service provision. The application contains a statement setting out how the proposal will be consistent with the Dun Laoghaire - Rathdown County Development Plan 2016-2022 (currently in force) and the Dun Laoghaire -	Case is due to be decided by 02/08/2022	Shares the same surface water sub-catchment with the proposed Scheme, therefore has the capacity to act in a cumulative or in-combination manner in respect surface water impacts on the downstream Natura 2000 sites. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. Considering the Mitigation measures included in the NIS for this project to avoid significant impacts and that the project alone will not adversely affect the integrity of any European sites, the project will not act in combination with the Proposed project to have a likely significant effect on any European sites.

		Rathdown County Development Plan 2022-2028 (adopted, not yet in force), and the Cherrywood SDZ Planning Scheme, 2014 (as amended). An Environmental Impact Assessment Report and a Natura Impact Statement have been prepared in respect of the proposed development			

ABP31328122	'Winterbrook' and 'Barrington Tower', Brennanstown Road, Dublin 18	Planning permission for a strategic housing development consisting of the demolition of an existing habitable dwelling 'Winterbrook', and the derelict, former dwelling attached to Barrington Tower protected structure. 'Barrington Tower' itself will be retained and restored. It is also proposed to demolish the existing boundary wall to the north of the site along Brennanstown Road. The development will provide a 'Build to Rent' (BTR) apartment development consisting of 8 no. blocks ranging in height up to 10 storeys (including lower ground floor) providing a total of 534 no. apartments. This will comprise of: 30 no. studio, 135 no. 1 -beds, 318 no. 2-beds & 51 no. 3-beds. All residential units provided with associated private balconies/terraces to the north/south/east/west elevations. Resident Support Facilities & Resident Services & Amenities (total floor area c.1,496 sq.m) including flexible spaces including entertainment rooms, meeting rooms, parcel rooms, media rooms, lounge and workspaces, gyms and studio, chef's kitchen and dining area. A creche (c.356.5 sq.m), and a retail unit (c.336.8 sq.m). Car and cycle parking at basement (2 levels) and at ground level. This will provide 419 no. car parking spaces, 1,266 no. cycle parking spaces and 17 no. motorcycle spaces. All associated site development works, open spaces and landscaping, boundary treatments, plant areas, waste management areas, cycle parking areas, and services provision (including ESB substations). Vehicular/pedestrian/cyclist access from Brennanstown Road will be provided along with improvement works to the Brennanstown Road including a new junction and pedestrian crossing facilities. Pedestrian/cyclist access through the site to the Brennanstown Luas Stop will also be provided. The application contains a statement setting out how the proposal will be consistent with the objectives of the relevant Dun Laoghaire Rathdown County Development Plan 2016-2022 (currently in force), the Dun Laoghaire Rathdown County Development Plan 2022 – 2028 (adopted, due to come into force on the 21st April 2022) and	Case is due to be decided by 02/08/2022	Shares the same surface water sub-catchment with the proposed Scheme, therefore has the capacity to act in a cumulative or in-combination manner in respect surface water impacts on the downstream Natura 2000 sites. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. Considering the Mitigation measures included in the NIS for this project to avoid significant impacts and that the project alone will not adversely affect the integrity of any European sites, the project will not act in combination with the Proposed project to have a likely significant effect on any European sites.

		the Cherrywood Planning Scheme 2014 Strategic Development Zone. The application contains a statement indicating why permission should be granted for the proposed development, having regard to a consideration specified in section 37(2)(b) of the Planning and Development Act, 2000, as amended, notwithstanding that the proposed development materially contravenes a relevant development plan or local area plan other than in relation to the zoning of the land. An Environmental Impact Assessment Report and a Natura Impact Assessment have been prepared in respect of the proposed development.			

DZ24A/0017	Townlands of Laughanstown and Cherrywood, Macnebury - Development Area 7 - Cherrywood, Dublin 18	The site of the development proposed is generally bound by Bishop Street to the north, Cherrywood Avenue to the east, the M50 to the west and development permitted under Reg. Ref. DZ22A/1021 and the Wyattvile Link Road to the south. The development proposed consists of a residential development consisting of 200 no. residential apartment units (total c. 27,308 sqm GFA) accommodated in 3no. blocks, ranging in height from 4-5 storeys on a net development area of approximately 0.89 ha. The overall development proposed comprises of the following: • 200 no. apartment units in 3no. blocks comprising: o Block A1 – 68no. units (12no. 1-bed, 41no. 2-bed and 15no. 3-bed) o Block A2 – 54no. units (14no. 1-bed, 39no. 2-bed and 1no. 3-bed) o Block A3 – 78no. units (14no. 1-bed, 49no. 2-bed and 15no. 3-bed) • Provision of 241no. car parking spaces allocated to the proposed development. The lower ground floor accommodates 139 no. car parking spaces and 102 no. spaces are accommodated at basement level. 10 no. of these spaces are accessible and 48 no. are for Electric Vehicles. • Provision of 264 no. bicycle parking spaces, of which 220 no. are long stay and 44 no. are short stay and 10 no. motorcycle parking spaces are provided. • The provision of c. 1,645 sqm of courtyard gardens of which c.1,456 sqm is private communal amenity space; • Vehicular Access serving the proposed development is via Cherrywood Avenue; • all associated and ancillary site development and infrastructural works, including the provision of bike stores and bin stores, ESB sub-stations / switch room, public lighting, private amenity space, hard and soft landscaping and boundary treatment works.	Permission granted 11/06/2024	Shares the same surface water sub-catchment with the proposed Scheme but lacks direct connection to local watercourses to act in a cumulative or in-combination manner. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. Lacks direct connection to local watercourses to act in a cumulative or in-combination manner.

		The proposed development also consists of minor revisions to the Phase 1 development permitted under Reg. Ref. DZ22A/1021 comprising of landscaping amendments to civic park, relocation of the foul water outfall from Bishop Street to Cherrywood Avenue together with all ancillary works, minor relocation of attenuation tanks located in the civic park and relocation of car share spaces (5no.) from surface level within the permitted Phase 1 development to the basement of the proposed Phase 2A development.			
D23A/0583	Riverwood, Cherrywood Road, Shankill, Dublin 18, D18R2V5	The demolition of two existing single-storey extensions to the rear of the property. 2) Construction of two smaller, single-storey extensions to the rear of the property. 3) Construction of an internal single storey corridor to replace an existing outdoor courtyard. 4) Construction of anew two storey element to facilitate a new entrance area and first floor bedroom. 5) Remodelling of existing windows to various elevations. 6) Construction of a new carport beside an existing garage. 7) Construction of a new integrated shed structure as part of an extended existing roof. 8) Adjustments to the existing roof profiles to the side and rear of the property. 9) Adjustments to the width and height of an existing vehicular entrance to include new vehicular gates, a new pedestrian gate, new gate posts and higher walls to match the height of the existing boundary walls, together with all associated landscaping/site works.	Permission granted 11/04/2024	Shares the same surface water sub-catchment with the proposed Scheme, therefore has the capacity to act in a cumulative or in-combination manner in respect surface water impacts on the downstream Natura 2000 sites The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in-combination effect. The project is relatively small in scale, with replacement of existing extensions within the site. This site backs on to the Bride's Glen River, at the location where Defence 4.A will take place in the back garden of this site for the proposed Carrickmines -Shanganagh Rivers FRS.

ABP30841820	1.4 ha site to the south of Abingdon, Shanganagh Road, Shankill, Dublin 18	Permission for a Build To Rent Strategic Housing Development comprise a Build to Rent (BTR) residential scheme comprising 193 no. apartments within 4 no. blocks ranging in height from 5 to 8 storeys. The apartment mix will comprise: 193 no. units as follows: 12 no. studios; 110 no. 1 bed; 1 no. 2 bed (3 persons); 70 no. 2 bed (4 persons). All apartments will be provided with associated private balconies/terraces facing north/ south/ east/ west. The development will include a pavilion, open spaces, tree houses, meeting rooms and flexible work space, BBQ facilities, resident's gym, and residential amenities areas. The development will include for a total of 120 no. car parking spaces including accessible spaces at undercroft and surface level,372 no. bicycle parking spaces and 6 no. motocycle spaces. Vehicular connection will be via Clifton Park. Additional pedestrian/cyclist accesses to the south (leading to Shankill Dart station to the south) is also proposed. The development also includes for all associated site development works and services provisions including bin storage areas, substations/switch rooms, plant rooms, boundary treatments and landscaping. The application contains a statement setting out how the proposal will be consistent with the objectives of the relevant Dun Laoghaire Rathdown County Development Plan 2016-2022. The application contains a statement indicating why permission should be granted for the proposed development, having regard to a consideration specified in section 37(2)(b) of the Planning and Development Act, 2000, as amended, notwithstanding that the proposed development materially contravenes a relevant development plan or local area plan other than in relation to the zoning of the land. A Natura Impact Statement has been prepared in respect of the proposed development.	Permission granted 11/02/2021.	Shares the same surface water sub-catchment with the proposed Scheme, therefore has the capacity to act in a cumulative or in-combination manner in respect surface water impacts on the downstream Natura 2000 sites. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in-combination effect. Considering the Mitigation measures included in the NIS, CEMP and Method Statement for this project to avoid significant impacts, and that the project alone will not adversely affect the integrity of any European sites, the project will not act in combination with the Proposed project to have a likely significant effect on any European sites.

D21A/1082	Conna, Abingdon Park, Shanganagh Road, Shanganagh, Shankill. Co. Dublin, D18WF54	Permission sought for development consisting of A) 32 number apartments comprising of three number three-bedroom, fourteen number two-bedroom, thirteen number one-bedroom and two number studio units on three floors to rear with a floor area of 1,121.5 sq.m., with balconies on East, West and South sides and an overall height of 14.1m from basement level, connected to and along with four floors to front with a floor area of 1,563sq.m, with balconies on West, East and South sides, with an overall height of 15.2m from basement level. Ground floor car parking for No. 13 cars including one disabled space. Basement car parking with an overall floor area of 849.7sq.m. consists of No. 24 car parking spaces to include No. 2 spaces for disabled and three electric charge points along with No. 2 motor bike spaces and No.17 bicycle spaces to include one cycle bicycle space. No. 26 bicycle spaces located at ground level. Bin storage with an area of 25 sq.m, located at basement level externally to North-East corner of site. Plant and services with a floor area of 21.9 sq. are located at roof level and meter services with a floor area of 15.3 sq. at basement level. Total gross floor area of the proposed development to be 3,556sq.m. Solar panels of the area of 40sq.m.to be provided on West roof. New 5.0m. wide vehicular access and 1.2m. wide vehicular access and 1.2 m. wide pedestrian access are to be provided onto Clifton Park, with gates 2.0 meters high, all on a site area of 3,380 sqm. The suite works include landscaping, screening, with common open space of 1,385.25 sq.m. along with new Sewage and Surface water drainage and an area of 7 sq.m. for siting 2m. high heat pumps at North boundary, new water connection to be connected to existing services at Clifton Park. New 2m. high wall to be provided along the South boundary and 2m high wall to be re-instated to East boundary of the site. All enabling and site development works, landscaping, boundary treatment, lighting, services and connections, waste management and all other ancillary works. B) Demolition of the existing two storey dwelling house	Case is due to be decided by 08/05/2023	Shares the same surface water sub-catchment with the proposed Scheme. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in-combination effect AA screening assessed the project as lacking direct connection Natura 2000 sites to act in a cumulative or in-combination manner. Indirect pathways enter the marine environment where significant dilution and mixing will occur prior to reaching Natura 2000 sites. No significant effects on European sites are likely.

		'Conna' with a floor area if 432.00 sq.m, and a height of 8.46 meters, along with demolition of single storey corrugated metal roofed sheds at North Western boundary, retaining existing access, as a pedestrian access onto Shanganagh Road, which boundary and curtilage partially meets the attendant grounds of Abingdon House, a protected structure.			

Bray to City Centre Core Bus Corridor Scheme	Bray to Dublin City Centre	The Bray to City Centre Core Bus Corridor Scheme (the Proposed Scheme) will support integrated sustainable transport usage through infrastructure improvements for active travel (both walking and cycling), and the provision of enhanced bus priority measures for existing (both public and private) and all future services who will use the corridor. The Proposed Scheme has an overall length of approximately 18.5km and in addition, the section of Stonebridge Road included in the design measures approximately 200m. The Proposed Scheme is routed along R138 and commences at the junction of Leeson Street Lower and Earlsfort Terrace on St. Stephen's Green. It runs along Leeson Street Lower and Upper, and Sussex Road. It continues along Morehampton Road and Donnybrook Road, through Donnybrook Village and on to the Stillorgan Road, serving the UCD Interchange via the Stillorgan Road Overbridge at Belfield. The route then continues on the Stillorgan Road (N11), which carries on to the Bray Road to Loughlinstown Roundabout. From Loughlinstown Roundabout it runs along the Dublin Road (R837) to St. Anne's Church and then continues south through Shankill village along the R119. It then passes through Wilford Junction and along the Dublin Road until it terminates on Castle Street in Bray, on the north side of the River Dargle crossing. The aim of the Proposed Scheme is to provide improved walking, cycling and bus infrastructure on this key access corridor in the Dublin region, which will enable and deliver efficient, safe, and integrated sustainable transport movement along the corridor. The Proposed Scheme is a key measure that delivers on commitments within the National Development Plan (2021-2030), the Transport Strategy for the Greater Dublin Area (2022-2042) the Climate Action Plan (2023) and the National Planning Framework 2040.	Application lodged to ABP 04/08/2023. Further consideration required by ABP.	Shares the same surface water sub-catchment with the proposed Scheme and the site possess direct connections to the local surface water network, and therefore has the capacity to act in a cumulative or in-combination manner in respect surface water impacts on the downstream Natura 2000 sites. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of watercourses draining into Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. Considering the Mitigation measures included in the NIS for this project to avoid significant impacts and that the project alone will not adversely affect the integrity of any European sites, the project will not act in combination with the Proposed project to have a likely significant effect on any European sites.

Deansgrange Stream Flood Relief Scheme		The works associated with the Deansgrange Flood Relief Scheme (FRS) extend through several locations across the Deansgrange Stream catchment, all at or in close proximity to the stream, between Johnstown Rd/ Granville Rd and the environs of the Dublin-Wexford Rail line. Works are expected to take approximately 18 months in total but will be completed in phases following environmental constraints such as breeding birds and seasonal restrictions to instream works and are expected to last until July 2026. The proposed scheme consists of the installation of a 1200mm diameter tunnelled overflow culvert underneath the railway, the provision of additional storage in Glenavon Park, a series of flood containment walls upstream of the Killiney Hill Road Bridge, including upgrading the parapet of the existing bridge, upgrade works in the existing culvert at Granville Road, the upgrade of the existing screen at the entry of the Seafield culvert, installation of additional coarse screens and the provision for future adaptation of all the measures listed to the impact of climate change on the modelled flood levels.		The outfall of Deansgrange Stream drains into Killiney Bay and therefore has the capacity to act in a cumulative or in-combination manner in respect to surface water impacts on the offshore Natura 2000 sites. The potential for in-combination effects could be as a result of: habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality) of Deansgrange Stream draining into Killiney Bay affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. The AA screening assessed the project as having no likely significant effect on European Sites alone or in combination with other projects.

Facility Centre for Water Based Activities at Killiney Beach		DLRCC are proposing to construct a Facility Centre for Water Based Activities at Killiney Beach. The project consists of a single-storey, flat-roofed facility with associated required site works and utilities connections. The amenity provides for 5No. WCs, 1No. accessible Changing Places shower room with WC, 5No. shower / changing cubicles, 4No. external showers, with sheltered demonstration space storage area, seating, lockers and drinking fountain. Corten Steel cladding material will be used externally. This facility is to be built on made ground above the beach. Works are expected to take approximately 25 weeks.		The proposed location of the facility is above Killiney beach, adjacent to Killiney Bay and therefore has the capacity to act in a cumulative or in-combination manner in respect to surface water impacts on the offshore Natura 2000 sites. The potential for in-combination effects could be as a result of: Habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of Killiney Bay) affecting the conservation objectives supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island SAC.	No in combination effect. The AA screening assessed the project as having no likely significant effect on European Sites alone or in combination with other projects. Construction expected to be finished before FRS construction begins.

Dublin – offshore windfarm Array		The Dublin Array expects to consist of between 39 and 50 turbines, with individual heights being approximately 270 and 310 meters. The turbines will be distributed between Kish and Bray banks approximately 10km east off the coastline of Sorrento Point in Dalkey, with two cables that will be brought to a preferred landfall location at Shanganagh Cliffs. This will be facilitated by the construction of two onshore transitional joint bays that will connect the two offshore electricity cables to the onshore cables, integration of cables to spread power throughout the country. It is expected that construction of the wind array is to begin in 2027 and completed in 2030.		Dublin Array are to be located offshore from proposed site and share Killiney Bay/Irish sea water body. The potential for in-combination effects could be as a result of: Habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of Irish Sea) affecting the conservation objectives of supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island	The plan will follow the legislative requirements of the Maritime Area Planning Act 2021, where it has undergone ecological and environmental surveying since 2001 and will be subject to an accompanying Environmental Impact Assessment Report and Natura Impact Statement.

Irish Rail East Coast Railway Infrastructure Protection Project (ECRIPP)zs		The Irish Rail ECRIPP aims to address the ongoing issues coastal erosion, wave overtopping and flooding along the railway infrastructure that have arisen due to the increase in frequency of storms as a result of climate change. These issues will be addressed through the implementation of a series of measures at five Coastal Cell Areas along the Dublin and Wicklow train route which include: CCA 2-3 - Dalkey Tunnel to Killiney station and Killiney South . Currently, the Irish Rail ECRIPP remains at a conceptual stage. Initial consultation with DLRCC internal stakeholders have been carried out, and the project is currently in Phase 2 Project Concept, Feasibility and Option Selection. Over the coming months (scheduled later in 2024- see Iarnród Éireann Projects and Investments (irishrail.ie)) the project is to go into its first phase of public consultation. At present, however, there has yet to be an options report or subsequent buildability reports produced.		Coastal cell CCA 2-3 - Dalkey Tunnel to Killiney station and Killiney South is located adjacent to Killiney Bay and therefore has the capacity to act in a cumulative or in-combination manner in respect to surface water impacts on the offshore Natura 2000 sites. The potential for in-combination effects could be as a result of: Habitat degradation / effects on QI / SCI species as a result of hydrological impacts (e.g. reduction in water quality of Killiney Bay) affecting the conservation objectives of supporting aquatic habitats and species of Dalkey Island SPA and Rockabill to Dalkey Island	The Irish rail ECRIPP has yet to undergo finalised project design, will be subject to both AA Screenings and Ecological Impact Assessments.

5.2.4.3 Summary of In-combination Effects

The County Development Plan and Coastal Defence Strategy have been subject to a separate Appropriate assessment (DLRCC, 2022b, Malachy Walsh and Partners, 2010c) and incorporate mitigations to prevent significant impact to any Natura 2000 sites. Both the Greater Dublin Drainage Strategy and The River Basin Management Plan aim to improve the water quality and are not anticipated to have a negatively in-combination effect on any of the Natura 2000 sites.

The projects listed in Table 5-1 have undergone either AA Screening or Stage 2 AA (NIS) and each has been considered to not have any likely significant effect on Dalkey Islands SPA and Rockabill to Dalkey Island SAC, either alone or in-combination with other projects, given the nature of the receptors and the size and mixing capacity of Killiney Bay/Irish Sea. The prescribed mitigations within the relevant NISs will safeguard the local vector pathways to the above Dalkey Island SPA and Rockabill to Dalkey Island SAC.

These permitted projects which share a zone of influence with the proposed flood relief scheme must be compliant with all applicable planning and environmental approval requirements and must follow the objectives and policies of the county development plans. These permitted developments were subject to planning consent, including Appropriate Assessment process, where necessary. By granting permission for these proposed developments, the relevant competent authorities determined that these developments would not lead to adverse temporary or residual impacts on the integrity of any Natura 2000 site, either alone or in-combination with other proposed developments within the locality.

The Irish Rail ECRIPP and the Dublin Offshore Windfarm Array have yet to undergo finalised project design, and once this is completed, they will both be subject to AA Screenings and Ecological Impact Assessments.

The proposed project is not likely to give rise to significant effects on the Dalkey Islands SPA and Rockabill to Dalkey Island SAC, either alone or in-combination with other projects.

5.2.5 Summary

Due to the location of the proposed site, the nature of the development and its distance to the Natura 2000 sites within the ZoI, the proposed project is not anticipated to have any likely significant effects via surface water, groundwater, groundwater to surface water, and land and air pathways on any Natura 2000 sites alone or in-combination with other plans and projects.

5.2.6 Description of likely direct, indirect or secondary effects of the project (either alone or in combination with other plans or projects) on the Natura 2000 sites.

Project Elements	Comment	
Size and scale	The Carrickmines-Shanganagh Flood Relief Scheme (FRS) aims to develop an FRS for the Carrickmines-Shanganagh area with a standard of protection (SoP) up to and including the 1% AEP event. The preferred option selected for the FRS designs measures that utilize a containment and conveyance mechanism. The preferred options include the upgrade and installation of walls, culvert and defences	
Land-take	There will be no direct land take from any of the Natura 2000 sites	
Distance from Natura 2000 site or key features of the site	Ballyman Glen SAC	4km
	Bray Head SAC	5.5km
	Carrigower Bog SAC	14.6km
	Dalkey Islands SPA	3.4km
	Glen of the Downs SAC	10.7km
	Glenasmole Valley SAC	9km
	Howth Head SAC	13.1km
	Howth Head Coast SPA	13.5km
	Knocksink Wood SAC	5km
	North Bull Island SPA	10.2km
	North Dublin Bay SAC	10.2km

Project Elements	Comment	
	North-West Irish Sea cSPA Rockabill to Dalkey Island SAC South Dublin Bay and River Tolka Estuary SPA South Dublin Bay SAC Wicklow Mountains SAC Wicklow Mountains SPA	10.2km 1.8km 4.8km 4.8km 4.7km 4.9km
Resource requirements (water abstraction etc.)	There will be no water abstraction requirement	
Emissions (disposal to land, water or air)	The proposed project contains direct hydrological links to Dalkey Islands SPA and to Rockabill to Dalkey Island SAC in the form of the streams present within the scheme, flowing to Killiney Bay where the currents and movement of the water within those distances would dilute any pollutants past the point of being harmful. Therefore, significant impacts are not anticipated via surface water and no significant impacts are anticipated via groundwater pathways to these Natura 2000 sites. Excavations at the site will produce loose top and sub soil, and emissions may arise from working machinery. While the proposed site has a south-west prevailing wind year-round, therefore, any dust generated on-site will most likely be transported towards the Natura 2000 sites. Due to the distance between the project site and these Natura 2000 sites, along with the obstruction of the wind pathway by the urban setting of the project, impacts through air-based pollutants are not anticipated	
Excavation requirements	Minor excavations will be required to construct walls and facilitate culvert replacements	
Transportation requirements	Temporary Effects: Levels of traffic to the site during the construction phase will increase traffic to the area but will be temporary in nature. All access to the site will be on pre-existing roads and transportation requirements will not affect Natura sites. Permanent Effects Given the size, scale and location of the proposed project, transportation requirements will not affect Natura 2000 sites	
Duration of construction, operation, decommissioning etc.	It is expected that the construction phase will take place over c. 18-24 months	

5.2.7 Description of likely changes to the Natura 2000 sites

Potential Effect	Comments
Reduction of habitat area	There will be no reduction in habitat area for any of the Natura 2000 sites
Disturbance to key species	Temporary Impacts: The construction works will temporarily increase the noise level and disturbance locally and along the surrounding coastline. However, no significant impacts are anticipated to key species given scale and temporary nature of the construction phase and distance from the Natura 2000 sites. Permanent Impacts: No disturbance to key species is anticipated during operation of the project.
Habitat or species fragmentation	No habitat or species fragmentation is likely as the project poses no restrictions to habitats or species of the Natura 2000 sites.

Potential Effect	Comments
Reduction in species density	There will be no temporary or permanent reduction in species density within any of the Natura 2000 sites, or any QIs of these sites.
Changes in key indicators of conservation value (water quality etc.)	Potential temporary changes to key elements (i.e. water quality) Natura 2000 sites are not anticipated.
Climate change	N/A

5.2.8 Description of likely impacts on the Natura 2000 sites as a whole

Potential Impact	Comments
Interference with the key relationships that define the structure of the site	Interference with the key relationships that define the structure of the sites are not anticipated.
Interference with key relationships that define the function of the site	Interference with key relationships that define the function of the sites are not anticipated.

Provide indicators of significance as a result of the identification of effects set out above in terms of:

Potential Impact	Comments
Loss (Estimated percentage of lost area of habitat)	No Natura 2000 sites will experience a direct loss in habitat area.
Fragmentation	Fragmentation of habitat and/or species is not anticipated
Disruption & disturbance	Disruption and/ or disturbance is not anticipated.
Change to key elements of the site (e.g., water quality)	Potential temporary changes to key elements (i.e. water quality) of the site are not anticipated

5.2.9 Describe from the above those elements of the project or plan, or combination of elements, where the above effects are likely to be significant or where the scale or magnitude of effects is unknown.

Based upon best scientific judgement, significant effects are not expected from the elements mentioned above, and there are no elements where the scale or magnitude of effects is unknown.

5.3 Concluding Statement

In carrying out this AA screening, mitigation measures have not been taken into account. Standard best practice construction measures which could have the effect of mitigating any effects on any European Sites have similarly not been considered.

On the basis of the screening exercise carried out above, it can be concluded that the possibility of any likely significant effects on the Natura 2000 sites within the ZoI, whether arising from the project itself or in combination with other plans and projects, can be excluded beyond a reasonable scientific doubt on the basis of the best scientific knowledge available.

References:

Catchment Science & Management Unit (2021) 3rd Cycle Draft Barrow Catchment Report (HA 14), available: https://catchments.ie/wp-content/files/catchmentassessments/14%20Barrow%20Catchment%20Summary%20WFD%20Cycle%203.pdf [accessed 18 Oct. 2023].

CIEEM (2018) 'Guidelines and checklist for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management'.

N. Cutts, K. Hemingway, & J. Spencer, 2013. Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning & Construction Projects, Version 3.2, Copyright University of Hull

DLRCC (2022a) 'Dún Laoghaire Rathdown County Development Plan 2022-2028', available: https://www.dlrcoco.ie/en/county-development-plan/county-development-plan-2022-2028 [accessed 06 November 2022].

DLRCC (2022b) Appropriate Assessment Conclusion Statement for the Dun Laoghaire-Rathdown County Development Plan 2022-2028, available https://www.dlrcoco.ie/sites/default/files/atoms/files/aa_conclusion_statement_.pdf [accessed 06 November 2022]

DoEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities., Department of the Environment, Heritage and Local Government, available: http://www.wicklow.ie/sites/default/files/Manager's%20report%20on%20submissions%20to%20the%20Proposed%20Amendments.pdf [accessed 12 Jan 2017].

DoHLGH (2022) 'Draft River Basin Management Plan for Ireland 2022-2027', available: https://www.gov.ie/en/consultation/2bda0-public-consultation-on-the-draft-river-basin-management-plan-for-ireland-2022-2027 [accessed 02 June 2022].

EC (2021) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission, available https://ec.europa.eu/environment/nature/natura2000/management/pdf/methodological-guidance_2021-10/EN.pdf [accessed 06 Dec 2022]EEA (2018a) Natura 2000 Standard Data Form Sieve Bloom Mountains SPA (IE0004160), available https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0004160 [accessed 18 Oct 2023]

EEA (2019) 'Natura 2000 Standard Data Form: Rockabill to Dalkey Island SAC IE0003000', available: https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0003000 [accessed 06 November 2023]

EEA (2020) 'Natura 2000 Standard Data Form: Dalkey Islands SPA IE004172', available: https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0004172 [accessed 06 November 2023]

EPA (2023) EPA Maps, available https://gis.epa.ie/EPAMaps/ [accessed 17 Oct 2022)

European Commission (Ed.) (2000) Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities: Luxembourg.

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.'

European Commission, Directorate-General for the Environment, Oxford Brookes University, Impacts Assessment Unit (Eds.) (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, EUR-OP: Luxembourg.

Fossitt, J.A. (2000) A Guide to Habitats in Ireland, Heritage Council of Ireland series, Heritage Council/Chomhairle Oidhreachta: Kilkenny.

GSI (2023) Geological Survey Ireland Spatial Resources [online], available: https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228 [accessed 30 September 2022].

IAQM, 2024, Guidance on the assessment of dust from demolition and construction Version 2.2, available Guidance – IAQM

Irish Water (2018) 'Greater Dublin Drainage Strategy - Overview & Future Strategic Needs', available: https://www.ringsendwwtpupgrade.ie/planning-sites/ringsend-planning/docs/planning-documents/technical-reports/180601_RGD%20Planning%20App%20-%20GDDS%20-%20Overview.pdf [accessed 18 Jun 2019].

Irish Water (2021) Ringsend Wastewater Treatment Plant Upgrade Project [online], Irish Water, available: https://www.water.ie/projects-plans/ringsend/ [accessed 12 Jan 2021].

Malachy Walsh and Partners (2010a) *Dun Laoghaire Rathdown County Council Coastal Defence Strategy Study*

Malachy Walsh and Partners (2010b) *Coastal Defence Strategy Study SEA Screening Report* Dun Laoghaire Rathdown County Council

Malachy Walsh and Partners (2010c) *Coastal Defence Strategy Study Statement for Appropriate Assessment Report*

MERC Consultants 2022 Littoral and sublittoral Reef habitats of Dún Laoghaire Rathdown County Council area, Dún Laoghaire-Rathdown County Council, County Hall, Marine Road, Dún Laoghaire, Co. Dublin.

MPW (2023) *Dun Laoghaire Rathdown Coastal Defence Strategy Study Review.* Dun Laoghaire Rathdown County Council.

NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2014) SIte Synopsis Rockabill to Dalkey Island [SAC 003000], available https://www.npws.ie/protected-sites/sac/003000, [accessed 06 November 2023]

NPWS (2015) Site Synopsis Dalkey Islands SPA 004172, available https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004172.pdf [accessed 06 November 2023]

NPWS (2022) Conservation objectives for Dalkey Islands SPA [004172]. First Order Site specific Conservation

Parnell J. and Curtis, T. (2012) Webb's An Irish Flora. 8th edition.

Stace, C.A. (2019) New Flora of the British Isles. 4th edition.

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