

Blackrock Dart – Park Active Travel Scheme

Ecology Report
Dun Laoghaire Rathdown County Council

June 2024



Notice

This document and its contents have been prepared and are intended solely as information for Dun Laoghaire Rathdown County Council and use in relation to Blackrock Dart – Park Active Travel Scheme.

WS Atkins Ireland Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

Document history

| Revision | Purpose description | Originated | Checked | Reviewed | Authorised | Date |
|----------|---------------------|------------|---------|----------|------------|------------|
| Rev 0 | For Information | CW | CW | KMC | UO'H | 11/10/2023 |
| Rev 1 | For Information | CW | CW | KMC | UO'H | 21/11/2023 |
| Rev 2 | For Information | CW | CW | CW | JMC | 08/04/2024 |
| Rev 3 | For Information | CW | CW | CW | JMC | 19/04/2024 |
| Rev 4 | For Information | CW | CW | CW | JMC | 07/06/2024 |
| Rev 5 | For Planning | CW | CW | CW | JMC | 24/06/2024 |
| | | | | | | |
| | | | | | | |

Client signoff

| | |
|-------------------------|---|
| Client | Dun Laoghaire Rathdown County Council |
| Project | Blackrock Dart – Park Active Travel Scheme. |
| Job number | 5217648 |
| Client signature / date | |

Contents

| Chapter | Page |
|---|-----------|
| 1. Introduction | 5 |
| 1.1. Project Details | 5 |
| 1.2. Construction Methodology | 10 |
| 1.3. Blackrock Park Masterplan | 12 |
| 2. Methodology | 13 |
| 2.1. Desk Study | 13 |
| 2.2. Zone of Influence | 15 |
| 2.3. Ecological Surveys | 15 |
| 2.4. Constraints | 15 |
| 2.5. Evaluation Ecological Receptors | 15 |
| 2.6. Determining Ecologically Significant Effects | 16 |
| 2.7. Mitigation | 16 |
| 2.8. Precautionary Principle | 16 |
| 2.9. Dun Laoghaire Rathdown County Biodiversity Action Plan 2021-2025 | 16 |
| 2.10. Blackrock Park Masterplan | 17 |
| 3. Existing Environment | 18 |
| 3.1. Sites Designated for Nature Conservation | 18 |
| 3.3. Site Survey Evidence - Habitats | 23 |
| 4. Impact Assessment | 31 |
| 4.1. Potential Impacts | 31 |
| 4.2. Mitigation Measures | 32 |
| 4.3. Cumulative Impacts | 33 |
| 4.4. Residual Impacts | 39 |
| 5. References | 40 |

Tables

| | |
|--|----|
| Table 3-1 - Natura 2000 sites within close proximity the study area of the scheme. | 18 |
| Table 3-2 - Annex I Habitat in close proximity to the project Site. | 20 |
| Table 3-3 - Wetland Habitats within Study Area | 23 |
| Table 3-4 - Trees within the residential garden of the project Site. | 24 |
| Table 3-5 – Summary of Ecological Receptors. | 30 |
| Table 4-1 - Planning applications near the proposed scheme. | 36 |

Figures

| | |
|---|----|
| Figure 1-1 - Project location (1 of 2). | 6 |
| Figure 1-2 - Project location (2 of 2). | 7 |
| Figure 1-3 – General Arrangement. | 8 |
| Figure 1-4 – Structural Details. | 9 |
| Figure 1-5 - Example of prefabricated bridge unit. | 11 |
| Figure 3-1 - European sites within the Zone of influence of the proposed project. | 19 |

Figure 3-2 - Watercourse within the project site.

22

Figure 3-3 - Project Site Habitat Map

26

1. Introduction

Dún Laoghaire-Rathdown County Council intends to apply for Part 8 planning permission to carry out a proposed scheme comprising the construction of Sustainable Travel Facilities in Blackrock, Dún Laoghaire-Rathdown County.

The Active Travel Scheme will improve connectivity between Blackrock DART Station and Blackrock Park as well as providing a safe and attractive pedestrian and cycle link catering for all pedestrian and cycle users including, commuter, leisure and family cycling groups.

The proposed project is located immediately to the west of Blackrock DART Station between Bath Place and Blackrock Park.

WS Atkins Ireland Limited (Atkins) was commissioned by Dún Laoghaire-Rathdown County Council (DLRCC) to prepare an Ecology Report for the Blackrock Dart-Park Active Travel Scheme.

1.1. Project Details

The proposed development commences at Bath Place (in the location of Blackrock Dart Station) passing through the grounds of the existing Deepwell House (protected structure: RPS No. 110). It includes the provision of 130m of a two-way cycle track varying in width from 3m to 3.65m, a 2m wide footpath and associated 1m and 3m grass verges, linking into the existing pedestrian and cycle path facilities in Blackrock Park by means of a new prefabricated bridge over the Priory Stream which is proposed to replace the existing narrow pedestrian bridge. A new sustainable urban drainage system will collect surface water run-off from the proposed development and will regulate discharge into the Priory Stream. The proposed development includes for a new public lighting system and landscaping which will be located within the proposed grass verges. The proposed development includes the retention of the existing masonry wall along the northern boundary and its extension at both ends to close off access to the existing laneway, whilst removing two sections of the existing wall to form openings for the proposed route. Where required, the height of the existing masonry wall will be raised to maintain a minimum height of 2.0m in relation to the finished scheme levels. The southern boundary of the proposed development includes the construction of a new boundary wall which will replicate the style of the existing boundary wall to the north and will be constructed at a height of 3.0m above the proposed back of verge level or existing private garden level, whichever is higher. Landscaping will be included as part of the route which will be inclusive of 2No. pillars located at the Bath Place entrance of the scheme. Ancillary works include but are not limited to landscaping and removal for future relocation of the existing folly.

Figures 1-1 and 1-2 below illustrate the project location.

Figures 1-3 and 1-4 below show the general arrangement and structural details of the proposed pedestrian and cycle link.

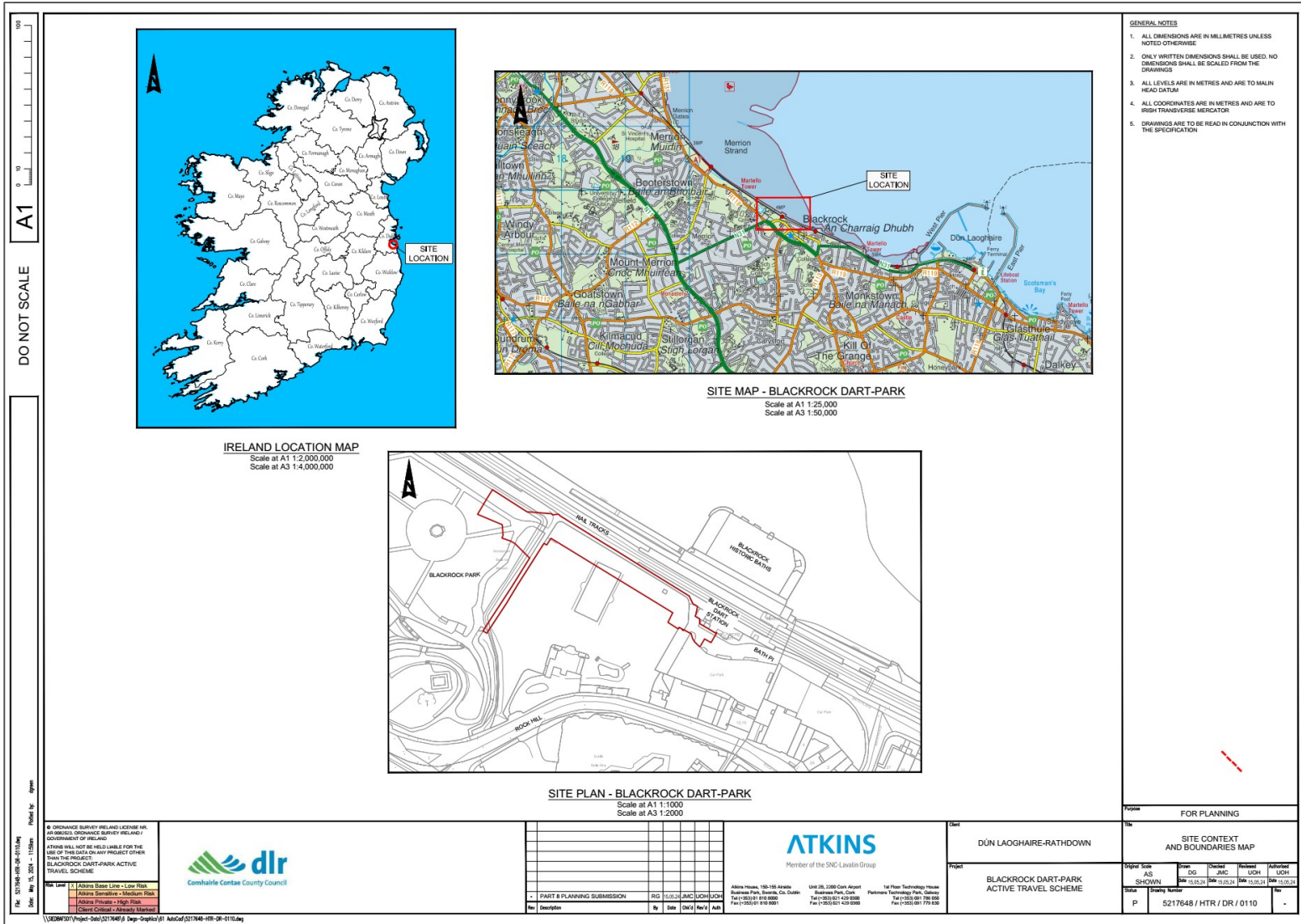


Figure 1-1 - Project location (1 of 2).



Figure 1-2 - Project location (2 of 2).

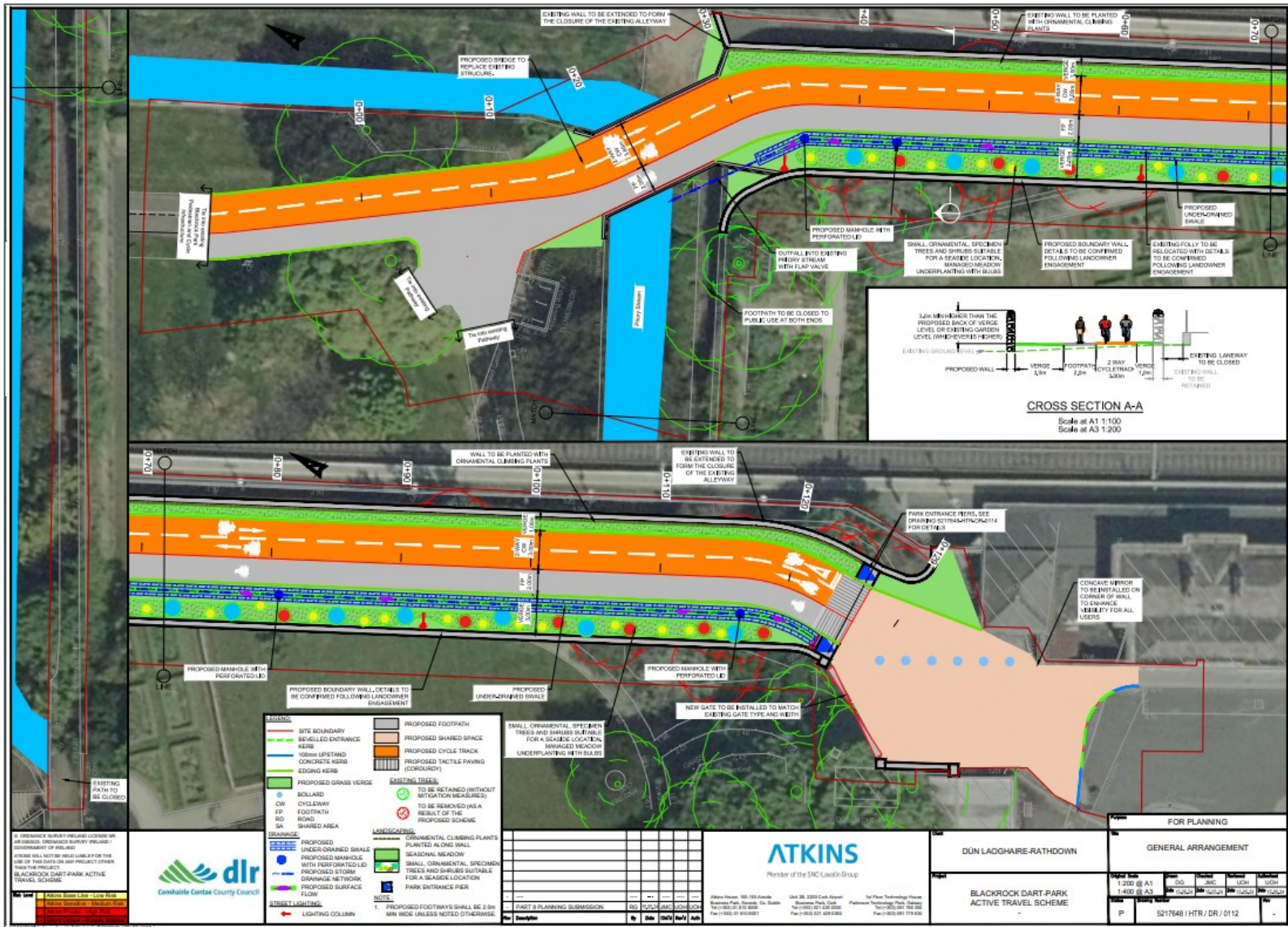


Figure 1-3 – General Arrangement.



Figure 1-4 – Structural Details.

1.2. Construction Methodology

The construction period for the proposed scheme is anticipated to be 10-12 months and can be summarised as follows.

1.2.1. Cycle path and Footpath Construction

The scheme consists of the construction of; a 3.0m - 3.65m wide two-way cycle track catering for cyclists and a 2m wide footway catering for pedestrians bordered by grass verges (1m and 3m wide respectively).

To give the highest quality of service for cyclists, it is envisaged that a smooth asphalt surface course will be used with 10mm aggregate as recommended by the National Cycle Manual with sufficient base and foundation layers to prevent failure. Footpaths are intended to be a concrete surface, to provide colour-contrast when compared to cycle surfaces, to aid people with visual impairments. The maximum depth for the footpath is estimated to be 250mm-500mm below ground level.

1.2.2. Bridge Construction

The proposed scheme passes over the Priory Stream. There is currently an existing bridge that is insubstantial in width to accommodate the new scheme. The existing bridge will be replaced with a prefabricated bridge, which will accommodate the additional width required, and will be installed on piled foundations set back from the edge of the watercourse / masonry wall banks to remove the need for instream works (see Figure 1-5 for an example of a prefabricated bridge unit). The bridge is at a skewed angle relative to the watercourse (refer to Figure 1-4) and the closest pile foundation is 1.3m from the watercourse / masonry walls. Prior to bridge construction the existing bridge will be removed from site by cutting the existing steel and concrete bridge deck following which the existing deck will be removed (in one piece) by use of a crane. The cast and wrought iron features (railings) of the existing bridge will be salvaged for future use by DLRCC.

The construction methodology for the proposed bridge is as follows;

The steel bridge and steel parapets will be prefabricated off site in factory conditions. Required machinery (Pile Rig, Excavator, Crane, etc.,) will be mobilised and pile locations will be set out as per the layout plan which has been designed to be at a setback distance from the existing masonry walls to negate the necessity for instream works. Works will only be undertaken during a period of dry weather. The cast in-situ bored reinforced concrete piles will be constructed at the two abutment locations with the use of temporary steel guide casings. Preparation of the ground for the construction of pile caps and abutment will take place before the reinforced pile caps and abutments are constructed at both ends. Ahead of delivery to site of the prefabricated steel bridge superstructure, the existing bridge deck will be dismantled without removal or damage to the existing masonry walls or abutments. The bridge will then be placed in situ following which the aluminium bridge deck will be delivered to site and installed. Once the deck has been installed, the steel bridge super structure will be lifted into place using a crane. Following installation of the main bridge structure, parapets (bridge railings) will be delivered and installed ahead of the installation of the necessary final bridge finishes. The steel bridge superstructure will be lifted into place using a crane following which the aluminium bridge deck will be delivered to site and installed. Following installation of the main bridge structure the parapets (bridge railings) will be delivered and installed ahead of the installation of the final bridge finishes.



Figure 1-5 - Example of prefabricated bridge unit.

1.2.3. Wall Construction

A new boundary wall is required between the proposed scheme and Deepwell House (private residence). The existing Deepwell House boundary wall is to be retained, raised in height where required and extended to form the closure of the existing laneway. The proposed boundary wall is to be constructed to match the existing boundary wall, with final details to be agreed subsequent to landowner engagement.

1.2.4. Drainage Alterations

Sustainable Urban Drainage Systems will be implemented as part of the detailed design to alleviate the displacement of surface water by the scheme. The rainwater runoff will drain towards an adjacent grass verge. The verges will be in the form of a drainage swale (shallow grassed channel) allowing drainage to ground. The swale also includes an outfall point to the Priory Stream for high rainfall events.

1.2.5. Lighting

All footpaths and cycle tracks will be lit, in line with current best practice and design guidance in relation to public lighting with consultation from the DLRCC Public Lighting Department.

1.2.6. Land Take

Acquisition of land is required to facilitate the proposed scheme.

1.2.7. Tree Removal and Proposed Landscaping

To accommodate the provision of the necessary pedestrian and cycle infrastructure, there is the requirement for the removal of several trees. A targeted tree survey has been undertaken based on the preliminary design and the expert advice of an arboriculturist has been used to determine the value, age and condition of all trees along the proposed route and any actions required where affected.

Landscaping, in the form of replacement trees, new trees, new hedging and street furniture is intended along the length of the route, the details of which will be developed further as part of the detailed design phase and in conjunction with the DLRCC Parks Department.

1.2.8. Ancillary Works

A single storey Grecian folly is located along the northern boundary of the Deepwell House grounds, which will be impacted by the proposed development. The folly will be relocated within the grounds of the Deepwell House, taking into consideration the recommendations of the Architectural Heritage Impact Assessment Report as part of the overall ancillary works for the scheme with its final location to be determined through negotiations with the landowner.

1.2.9. Site Compound

It will be the responsibility of the Contractor to determine a suitable location for the site compound within the proposed project site, but away from any identified environmental sensitive receptors (watercourses, designated sites etc.) so as to avoid potential impacts to the environment and the general public. The proposed project is remote from any designated conservation site. It is planned that existing Local Authority (Dún Laoghaire–Rathdown County Council) controlled material storage yards in the locality, currently used for the storage of inert materials, will be utilised during the construction phase to store similarly inert materials for incorporation in the proposed scheme. Materials will be brought to site on a periodic basis as required directly from suppliers. Parking for operatives will be at the main compound only. Operatives will be transported from the compound to the works area. No parking will be allowed within the temporary works area.

1.3. Blackrock Park Masterplan

Dún Laoghaire-Rathdown County Council have developed a Masterplan¹ for the enhancement of Blackrock Park. The Masterplan includes amongst the objectives; *‘creating a naturalised bank along the Priory Stream, upgrade the bridge for access for cyclists and pedestrians, expand the sub-standard laneway to improve pedestrian/cycle permeability and connectivity’*. As such, the proposed scheme can be considered to facilitate certain elements of the Blackrock Park Masterplan. The following are amongst the aims of the Masterplan;

- Maximise tree canopy cover in the park and where appropriate implement nature-based solutions in line with Councils Climate Change Action Plan 2019-2024.
- Protect and enhance the natural heritage, flora & fauna and marine heritage of the park in the context of the Dublin Bay UNESCO Biosphere

The Masterplan also includes for biodiversity enhancement measures within the park including.

- Increase tree canopy along coastal edge using evergreen species to enhance year round greening.
- Introduce groves of small trees and meadow planting or consider alternative method of maintaining the grass

Introduce a large scale high quality herbaceous display suitable for coastal conditions.

¹ https://www.dlrcco.ie/sites/default/files/atoms/files/blackrock_park_masterplan_2020_final.pdf

2. Methodology

The methodology used to carry out the survey of the scheme site (hereafter referred to as the Site), to evaluate the ecological value and to prepare the report is outlined in this section. The assessment methodology is based on the standard professional impact assessment guidance as referenced in Section 2.6.

2.1. Desk Study

A desk study was carried out to collate available existing information on habitats and species of ecological value within and surrounding the Site. Ecology reports, sourced from National Parks and Wildlife Service, and Dun Laoghaire Rathdown County Council, were also reviewed as part of the desktop exercise. The ecological information was collated with the aim of providing a comprehensive evaluation of baseline ecological conditions found within the project study area and was used to undertake an evaluation of the likely impacts the proposed scheme will have on biodiversity.

Sites designated for nature conservation were examined within zone of influence of the proposed scheme. Sites considered included both internationally (European sites, Ramsar sites) and nationally designated conservation areas (National Heritage Areas, proposed National Heritage Areas, Nature Reserves).

The Natura 2000 network (European sites) is comprised of both Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) for birds; these sites are designated for the protection of biodiversity across the European Union. SACs are designated under the EU Habitats Directive (92/43/EEC), as transcribed into Irish law by the European Communities (Birds and Natural Habitats) Regulations, 2011, while SPAs are designated under the EU Birds Directive (79/4089/EEC; and as amended 2009/147/EC). SACs are sites of international importance due to the presence of Annex I habitats and/or Annex II species listed under the EU Habitats Directive (92/43/EEC). SPAs are designated for the protection of bird species listed on Annex I of the Bird Directive (2009/147/EC), regularly occurring populations of migratory species and areas of international importance for migratory birds. Ramsar sites are wetland sites designated to be of international importance under the Ramsar Convention an intergovernmental environmental treaty established by UNESCO.

A Natural Heritage Area (NHA) is the basic designation for wildlife under the Wildlife Amendment Act (2000). NHA sites are selected by having special scientific significance for one or more species, communities, habitats, landforms or geological features, or for a variety of natural attributes. A Nature Reserve is an area of importance to wildlife, which is protected under Ministerial order and sites are established under section 15 of the Wildlife Act 1976.

The inland surface waters within close proximity to the Site, or which receive drainage from the Site, were reviewed. Where information was available waterbodies were assessed in relation to their fisheries value, biological status, water quality and designation status. Relevant waterbodies within the study area were identified through the EPA online Map Viewer facility². Available records of protected aquatic species, designation status and water quality for these water features were reviewed.

The desk-based study also reviewed available information on any known or potentially important sites for rare or protected flora or fauna known to occur along or within the zone(s) of influence of the proposed scheme. Available information on any other sites of ecological value, that are not nationally or internationally designated, found within or in close proximity to the proposed project were also reviewed.

The locations of conservation sites, protected species occurrences and areas of ecological interest were reviewed using Google maps / Google StreetView³ and Bing maps⁴. Sources of data used to collate and compile information of ecological features of interest and importance for the study include: -

- National Parks and Wildlife Service (NPWS)
 - Information on sites designated for nature conservation, including spatial data.
 - Habitats and species data
 - Wildfowl Sanctuaries

² <https://gis.epa.ie/EPAMaps/>

³ <https://www.google.ie/maps>

⁴ <http://www.bing.com/maps/>

- National Biodiversity Data Centre (NBDC)
 - Protected species records
 - Invasive species records
- Environmental Protection Agency
 - Watercourses and lake spatial files
 - Water quality data
- Geological Survey of Ireland
 - Underlying geology, soils and hydrogeology
- Ordnance Survey Ireland
 - Historic mapping
- Birdwatch Ireland
 - Bird count data from the Irish Wetland Bird Survey (IWeBS)
- Wetland Survey Ireland
 - Information on identified wetland habitats near the study area.
- OPW Wildlife Service Report (1990)
 - Wildlife Sanctuaries
- National Heritage Plan
- Ramsar sites information service.
- Dun Laoghaire Rathdown County Biodiversity Action Plan 2021-2025

The National Biodiversity Data Centre (NBDC) were accessed for information on protected species known from the Ordnance Survey Ireland grid squares; O2213295, O2213296, O2214295 and O2214296 (last reviewed October 2023). These grid squares encompass the Site and a section of Dublin Bay. Only records for the past 10 years are included within this report as older records are unlikely to still be relevant given their age and the changes in land management that has occurred in the intervening period. Bat records within 2km of the survey area were also reviewed using the NBDC website.

As part of a separate (ungranted) project located near the same lands in Blackrock an Environmental Constraints Study was prepared by Atkins in 2020: - Dublin Bay Trail S2S Environmental Constraints Study 2020 (unpublished). This study included several targeted ecology surveys in the vicinity of Blackrock which were reviewed to further inform the baseline ecological conditions of the lands surrounding the Site. The assessment was further informed by the following (unpublished) documents and ecological surveys: -

- Dublin Bay Trail S2S Environmental Constraints Study, Atkins 2020 (Doc Ref:- 5188509DG0006).
- Bat Assessment prepared for Panning Application, Dr Tina Aughney, Bat Eco Services 2020.
- Dublin Bay Trail S2S, Breeding Bird Surveys, Natura Environmental Consultants 2020.
- Dublin Bay Trail S2S, Winter Bird Surveys 2018/19 & 2019/2020, Natura Environmental Consultants 2020.
- Dublin Bay Trail Otter Survey, Ross Macklin 2020.

An Appropriate Assessment (AA) screening report has also been prepared as a standalone document. The purpose of an AA screening report is to identify potential impacts on Natura 2000 sites and examines the likelihood of the proposed scheme resulting in a significant effect on the features of interest and conservation objectives of Natura 2000 sites.

2.2. Zone of Influence

The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects because of the proposed project and associated activities. This is likely to extend beyond the scheme Site, for example where there are ecological or hydrological links beyond the site boundaries. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change (CIEEM, 2018).

It follows that given the nature of the proposed scheme in Blackrock the zone of influence will be limited to the development site and immediate environs as well as areas connected via hydrological pathways (ground or surface water) and landscape features such as hedgerows, treelines and watercourses.

Determining the potential for impacts and the zone of influence is based on the source-pathway receptor chain principle and involves assessing likely significant effects on ecological receptors within the zone of influence in relation to three pathways: -

- Surface water
- Groundwater
- Land & Air

2.3. Ecological Surveys

A site walk over of the Site was completed by an Atkins Senior Ecologist Colin Wilson and Environmental Consultant Rebecca Griffith on the 27th of October 2022, this site visit informed the scope of the EclA report. A Phase 1 habitat survey was undertaken in line with published practice (Smith *et al.*, 2011), with habitats classified in line with the Heritage Council Classification scheme (Fossitt, 2000). Dominant plant species in each habitat type were recorded. Plant nomenclature follows the Botanical Society of Britain and Ireland's List of Accepted Plant Names (Botanical Society of Britain and Ireland, 2007). Incidental sightings of birds were noted during the walkover survey to further evaluate the importance of the site to flora and fauna (in line with the approach set out in the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017). During the site walk over in October 2022 the site was assessed for the presence and signs of terrestrial mammal activity such as badger (*Meles meles*).

The landscape value for bats was also considered (after e.g. Entwistle *et al.*, 2001; etc.). Trees or structures suitable for bat roosts within the Site and potential suitable bat foraging habitat were also noted during the daytime walkover of the Site. In addition, a targeted Bat Activity Survey was also undertaken on 20th September 2023 by Atkins ecologist Daniel Blake.

The Site was also surveyed for invasive plant species as listed on the third schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/2011. Species included on the 3rd schedule include for example Japanese knotweed (*Fallopia japonica*) and associated hybrids, Himalayan Balsam (*Impatiens glandulifera*) and Three-cornered garlic (*Allium triquetrum*).

2.4. Constraints

The habitat survey was carried out within optimum survey periods during October month when most vegetation can be identified.

2.5. Evaluation Ecological Receptors

The evaluation and impact assessment within this report has been undertaken with reference to relevant parts of the 2018 *Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland. Terrestrial, Freshwater, Coastal and Marine* - developed by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018).

The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known / published accounts of distribution and rarity where available, and professional experience:

- International (European).
- National (Ireland).
- Regional (Leinster).
- County (Dun Laoghaire Rathdown)

- Townland (Blackrock).
- Local (intermediate between the Site and Townland).

Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and / or species rarity; the extent to which such habitats and / or species are threatened throughout their range, or to their rate of decline.

2.6. Determining Ecologically Significant Effects

CIEEM (2018) define an ecologically significant impact as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic area.

The integrity of a site is the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified (CIEEM, 2018). Best scientific professional judgement has been used in some cases, to assess the significance of predicted effects in line with National Roads Authority Guidelines for Assessment of Ecological Impacts of National Road Schemes, (NRA, 2009).

2.7. Mitigation

Where significant impacts have been identified, the mitigation hierarchy has been taken into account, as suggested in the 2018 *EclA Guidelines*, which sets out a sequential approach of avoidance of impacts where possible, application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied, along with any necessary compensation measures, and opportunities for enhancement incorporated, residual impacts have then been identified.

2.8. Precautionary Principle

The evaluation of significant effects should always be based on the best available scientific evidence. If sufficient information is not available, further survey or additional research may be required. In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed. Where uncertainty exists, it must be acknowledged in the EclA.

2.9. Dun Laoghaire Rathdown County Biodiversity Action Plan 2021-2025

Dun Laoghaire Rathdown County Biodiversity Action Plan (BAP) 2021-2025 outlines that within the County at least 20% of the natural habitats have been lost to development in the past 10 years.

With this in mind, the BAP aims to promote and enhance the biodiversity within the County and as such the Plan includes for the following objectives;

- Conserve protected areas and other high-quality habitats and species.
- Develop ecologically resilient and varied landscapes.
- Integrate adaptation and mitigation measures into management, planning and decision-making.

The BAP calls for actions that involve placing biodiversity into project decision-making and design processes with importance being placed on protecting and restoring ecological networks across the County. This importance is recognised by Dun Laoghaire Rathdown (DLR) and it is also included in our DLR County Development Plan.

The BAP includes the following aim in regard to protecting and enhancing local biodiversity;

- To inform decision-making in relation to planning and development and to connect biodiversity to allow for areas that will not be impacted severely by human activity.

The BAP further details; *‘There are many opportunities for DLR County Council... to contribute to our ecological network by adding biodiversity to their areas, such as green areas, planting trees, creating wetlands or ponds, restoring areas for biodiversity’...* *‘Therefore, any proposal for development will undergo an Ecological Impact Assessment and a Screening for Appropriate Assessment, as a minimum. The creation of links to the wildlife corridor however should be part of any future development, such as the planting of hedgerows or creation of other wildlife areas.’*

2.10. Blackrock Park Masterplan

Dún Laoghaire-Rathdown County Council have developed a Masterplan⁵ for the enhancement of Blackrock Park. The Masterplan includes amongst the objectives; *'creating a naturalised bank along the Priory Stream, upgrade the bridge for access for cyclists and pedestrians, expand the sub-standard laneway to improve pedestrian/cycle permeability and connectivity'*. As such, the proposed scheme can be considered to facilitate certain elements of the Blackrock Park Masterplan. The following are amongst the aims of the Masterplan;

- Maximise tree canopy cover in the park and where appropriate implement nature-based solutions in line with Councils Climate Change Action Plan 2019-2024.
- Protect and enhance the natural heritage, flora & fauna and marine heritage of the park in the context of the Dublin Bay UNESCO Biosphere

The Masterplan also includes for biodiversity enhancement measures within the park including.

- Increase tree canopy along coastal edge using evergreen species to enhance year round greening.
- Introduce groves of small trees and meadow planting or consider alternative method of maintaining the grass
- Introduce a large scale high quality herbaceous display suitable for coastal conditions.

The Masterplan proffers the opportunity for the two projects to act in combination to provide ecological enhancement to the local receiving environment.

⁵ https://www.dlrco.ie/sites/default/files/atoms/files/blackrock_park_masterplan_2020_final.pdf

3. Existing Environment

3.1. Sites Designated for Nature Conservation

3.1.1. International Importance – European Sites

There are 2 no. Natura 2000 / European sites within 20m of the Site; South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA. The project Site has hydrological connectivity to the SAC/SPA within Dublin Bay via the Priory Stream which is located within the project Site and which outfalls ca. 200m downstream into Dublin Bay. The qualifying interest (QI) habitats and species of these two designated conservation sites adjacent to the study area are detailed in Table 3-1 below. Figure 3-1 illustrates the location of the SAC/SPA.

Table 3-1 - Natura 2000 sites within close proximity the study area of the scheme.

| Site Name | Features of Interest ⁶ | Connectivity from Project Site |
|--|---|---|
| South Dublin Bay SAC (Site Code: 000210) | <ul style="list-style-type: none"> ➤ Mudflats and sandflats not covered by seawater at low tide [1140] ➤ Annual vegetation of drift lines [1210] ➤ <i>Salicornia</i> and other annuals colonising mud and sand [1310] ➤ Embryonic shifting dunes [2110] | Hydrological connectivity via the Priory Stream |
| South Dublin Bay and River Tolka Estuary SPA (Site Code: 004024) | <ul style="list-style-type: none"> ➤ Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] ➤ Oystercatcher (<i>Haematopus ostralegus</i>) [A130] ➤ Ringed Plover (<i>Charadrius hiaticula</i>) [A137] ➤ Grey Plover (<i>Pluvialis squatarola</i>) [A141] ➤ Knot (<i>Calidris canutus</i>) [A143] ➤ Sanderling (<i>Calidris alba</i>) [A144] ➤ Dunlin (<i>Calidris alpina</i>) [A149] ➤ Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] ➤ Redshank (<i>Tringa totanus</i>) [A162] ➤ Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] ➤ Roseate Tern (<i>Sterna dougallii</i>) [A192] ➤ Common Tern (<i>Sterna hirundo</i>) [A193] ➤ Arctic Tern (<i>Sterna paradisaea</i>) [A194] ➤ Wetland and Waterbirds [A999] | Hydrological connectivity via the Priory Stream |

⁶ Site documentation sourced from <https://www.npws.ie/protected-sites>

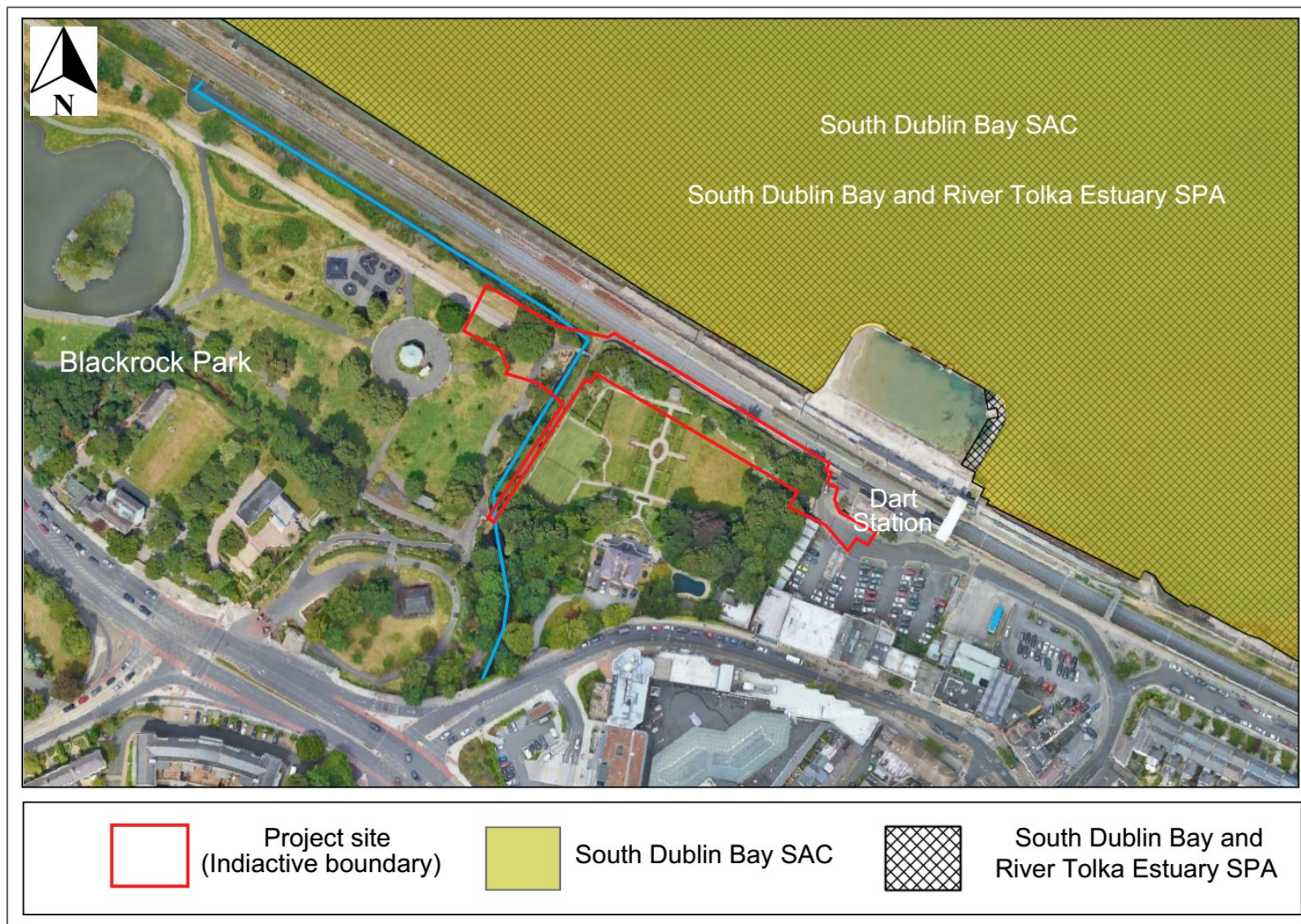


Figure 3-1 - European sites within the Zone of influence of the proposed project.

3.1.1. International Importance – South Dublin Bay and River Tolka Ramsar Site

Directly adjacent to the Site, the combined areas of South Dublin Bay SAC, South Dublin Bay and River Tolka SPA and the Sandymount Strand / Tolka Estuary are also designated for protection as a Ramsar Site (Site Number 832) which covers an area of ca. 654 hectares.

A Ramsar Site is a wetland site designated to be of international importance under the Ramsar Convention, an intergovernmental environmental treaty established in 1971 by UNESCO. It provides for national action and international cooperation regarding the conservation of wetlands, and wise sustainable use of their resources.

A site synopsis of the South Dublin Bay and River Tolka Ramsar site is as follows⁷: -

“An intertidal system supporting a large bed of eelgrass (Zostera noltii) with extensive areas of sandflats. The site is important for various species of waterbirds, supporting internationally important numbers of Brent Geese and large numbers of roosting gulls and terns. Various species of annelids, bivalves and small gastropods occur. Bait-digging is a regular activity on the sandy flats (Irish Wetlands, 2019).”

3.1.2. Dublin Bay Biosphere Reserve

Dublin Bay has been further designated at international level as: *Dublin Bay Biosphere*. The scheme Site is within and hydrologically linked to Dublin Bay Biosphere.

Biosphere Reserves are areas of terrestrial and coastal/marine ecosystems, designated to reconcile the conservation of biodiversity with the quest for economic and social development and the maintenance of cultural values. They are internationally recognised within the framework of UNESCO’s Programme on Man and the Biosphere.

Dublin Bay Biosphere contains different zones, key areas relevant to the study area include; the Tolka Estuaries, Booterstown Marsh; public and private green spaces such as parks (Blackrock park), and residential areas, harbours, ports, and industrial and commercial areas.

3.1.3. Annex I Habitat

Annex I habitat is habitat protected under EU legislation, namely the Habitats Directive. The overall objective of the Habitats Directive is to achieve and maintain favourable conservation status for all habitats and species of community interest; and to contribute towards maintaining biodiversity of natural habitats and of wild flora and fauna in member states.

To this end, EU member states are obliged to monitor the conservation status of habitats and species. As all habitats (as listed in Annex I) and species of community are included, the monitoring requirements obliged to be undertaken by member states is not restricted to Natura 2000 sites (SACs and SPAs) but encompasses the total national resource of each habitat. Consequently, data on Annex I habitat must be collected both within and outside the Natura 2000 network.

In addition, member states are obliged, as detailed in Article 17 of the Habitats Directive, to report to the EU commission every six years on the implementation of measures taken towards meeting the objectives of the directive.

The table below details the Annex I habitat within the environs of the Site. Locations of Annex I habitat was established through a review of NPWS Article 17 Data 2019. Annex I habitats are categorised into the following general habitat categories: - Bogs, mires and fens, Coastal habitats, Dunes habitats, Forests, Freshwater habitats, Grasslands, Heath and scrub and Rocky habitats.

Table 3-2 - Annex I Habitat in close proximity to the project Site.

| Habitat Category | Habitat Type | Location | Connectivity from Project Site |
|------------------|---|--|---|
| Coastal habitats | Mudflats and sandflats not covered by seawater at low tide [1140] | Marine / sea area of south Dublin Bay. | Hydrological connectivity via the Priory Stream |
| | Large shallow inlets and bays [1160] | Marine / sea area of south Dublin Bay. | |
| | Annual vegetation on drift lines [1210] | | |

⁷ <http://irishwetlands.ie/index.php/irish-sites/>

| | | | |
|---------------|---------------------------------|---|------|
| | | Ca. 500m east of Merrion Gates ⁸ | |
| Dune Habitats | Embryonic shifting dunes [2110] | East of Booterstown Marsh (coastal side or railway). Maretime headland | None |

3.1.4. National Importance – Natural Heritage Areas

There is 2 no. proposed National Heritage Area (pNHA) within proximity to the Site namely; South Dublin Bay pNHA (000210) and Booterstown Marsh pNHA (001205). South Dublin Bay pNHA is ca. 20m from the Site and Booterstown Marsh pNHA is c. 1.2km northwest of the Site.

South Dublin Bay pNHA is a designated conservation area for the same conservations interests as South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA, as previously detailed.

Booterstown Marsh pNHA site synopsis is summarised as follows; Booterstown Marsh is the only saltmarsh in south Dublin and, despite some concerns about the increasing salinity of the marsh, it remains a valuable habitat for many birds as well as containing a diverse range of flora. Almost the entire marsh can be flooded at irregular intervals and salinity fluctuates throughout the wetlands under the influence of rainfall and tidal cycles. Consequently, the pNHA site exhibits an interesting gradient from freshwater plant communities in the northwest to a more saline-tolerant flora in the south-east.

Booterstown Marsh is an area of local and regional ornithological importance. Of particular interest are the high concentrations of Snipe. The marsh is also used as a high-tide roost by a variety of waders and gulls including Oystercatcher, Redshank, Black-headed Gull, Mallard and Teal which are regularly seen in autumn and winter. Other species which frequent the marsh include Kingfisher, an Annex I species under the E.U. Birds Directive, and Grey Heron. Other birds of coastal marshes have been recorded, notably Little Egret and Yellow Wagtail.

There is indirect connectivity from the Site via the Priory Stream to South Dublin Bay pNHA, there is no indirect connectivity to Booterstown Marsh pNHA.

3.1.5. National Importance – National Parks, Nature Reserves & Wildlife Sanctuaries

Booterstown Marsh is also a Nature Reserve. An Taisce notes that this site is the only Bird Sanctuary in South Dublin Bay and the only remaining saltmarsh on the south shore of Dublin Bay and states that the site ‘provides an environmental awareness amenity within an urban setting’. Booterstown Marsh is described by An Taisce as a ‘brackish water marsh, approx. 4.3 ha in size, with both salt and fresh water intakes and it has a seasonal and annual fluctuation in its pattern of vegetation and this instability is characteristic of marshes of this type’.

3.2. Other Features of Ecological Value

3.2.1. Watercourses

There is 1 no. watercourse within the Site; Priory Stream (EPA: IE_EA_09B130400), the stream is crossed by the proposed scheme via a bridge in Blackrock Park. The Priory Stream outfalls to South Dublin Bay ca.200m west of the watercourse crossing. The Priory Stream is a first order stream which is culverted for a large extent under Blackrock and receives storm water / surface water drainage from the upstream urban developed areas. The Priory Stream has been assigned ‘Poor’ ecological status under the Water Framework Directive (WFD) for the 2016-2021 monitoring period and the WFD risk is detailed as ‘under review’– for the purpose of this assessment, and taking a conservative approach, this water body is considered ‘at risk’ until completion of the review.

Figure 3-2 below illustrates the location of the Priory Stream. Plates 3.1 and 3.2 below present Site photographs of the canalised Priory Stream.

⁸ As detailed by NPWS datasets 2012 (potential NPWS mapping error)



Figure 3-2 - Watercourse within the project site.



Plates 3.1 & 3.2 - Canalised Priory stream in Blackrock Park (Atkins 2023).

3.2.2. Wetland Habitats

A review of Wetland Survey Ireland datasets identifies there are 3 no. wetland habitats located within close proximity the Site as outlined in Table 3-3 below.

Table 3-3 - Wetland Habitats within Study Area

| Name | Type | Site Evaluation | Site Code | Location | Connectivity from Project Site |
|---|---|---|-----------|--|---|
| South Dublin Bay SAC | Estuaries, and Tidal Mudflats and Sandflats | A Rating: Internationally Important | WMI DU182 | C. 20m north of the project Site | Hydrological connectivity via the Priory Stream |
| Blackrock Park Pond | Lake (Artificial) | F Rating: Unknown value - survey required | WMI DU169 | C. 140m north west of the project Site | None |
| Boooterstown Marsh - South Dublin Bay and River Tolka Estuary SPA | Salt Marsh and River | A Rating: Internationally Important | WMI DU29 | C. 1.25km north west of the project Site | None |

3.2.3. Native Woodland

A National Survey of Native Woodlands (NSNW) was conducted between 2003 and 2008 with the aim of identifying areas of native woodlands within Ireland. There are no native woodlands within the study area.

3.2.4. Parklands

Blackrock Park is generally comprised of formal pathways, cycleways, amenity grassland areas, formal gardens and landscaped areas, ponds, and playgrounds.

The portion of the Site within Blackrock Park is comprised of the hardstanding areas of pathways, the canalised Priory Stream, and a small area of ornamental shrub planting. On the western extremities of the study area (within the park) there are 2 no. trees; Scot's pine (*Pinus sylvestris*) and sycamore (*Acer pseudoplatanus*), these trees are being retained. The Scot's pine is noted to have potential bat roost features with crevices noted in the upper trunk and limbs (Refer to Section 3.4.2 for bat activity survey findings).

3.3. Site Survey Evidence - Habitats

The habitats within the Site are shown on Figure 3-3 below and are individually described and evaluated in the following text. The approach to determining ecological importance of the Site is set out in Section 2.5 of this report and is based on CIEEM (2018) guidance. Refer to Plates 3-3 – 3-9 below for site photos of habitats within the project Site.

Treelines (WL2)

The majority of the Site is largely dominated by a residential garden with an irregular line of trees which largely conforms to a Treeline (WL2) of c. 100m in length. There are 39 no. trees within the residential garden area of the project Site and 31 no. of these trees will be lost as result of the construction of the proposed scheme. The treeline is considered to be of ecological value at a local level due to its value as nesting habitat for native bird populations.

The trees to be lost and / or retained are listed in Table 3-4 below.

Table 3-4 - Trees within the residential garden of the project Site.

| Species | Latin Name | Number of Trees | Proposed Status |
|-----------------|--------------------------------|-----------------|--|
| Holm oak | <i>Quercus ilex</i> | 4 | To be removed to facilitate the cycle scheme |
| Rowan | <i>Sorbus aucuparia</i> | 1 | To be removed to facilitate the cycle scheme |
| Sycamore | <i>Acer pseudoplatanus</i> | 4 | To be removed to facilitate the cycle scheme |
| Whitebeam | <i>Sorbus aria</i> | 1 | To be removed to facilitate the cycle scheme |
| Black pine | <i>Pinus nigra</i> | 2 | To be removed to facilitate the cycle scheme |
| Himalayan birch | <i>Betula utilis</i> | 1 | To be removed to facilitate the cycle scheme |
| Scholar's Tree | <i>Styphnolobium japonicum</i> | 1 | To be removed to facilitate the cycle scheme |
| Portugal laurel | <i>Prunus lusitanica</i> | 2 | To be removed to facilitate the cycle scheme |
| Russian Olive | <i>Elaeagnus angustifolia</i> | 3 | To be removed to facilitate the cycle scheme |
| Norway maple | <i>Acer platanoides</i> | 1 | To be removed to facilitate the cycle scheme |
| Birch | <i>Betula pendula</i> | 2 | To be removed to facilitate the cycle scheme |
| Maritime pine | <i>Pinus pinaster</i> | 1 | To be removed to facilitate the cycle scheme |
| False acacia | <i>Robinia pseudoacacia</i> | 5 | To be removed to facilitate the cycle scheme |
| White poplar | <i>Populus alba</i> | 2 | To be removed to facilitate the cycle scheme |
| Plum | <i>Prunus domestica</i> | 1 | To be removed to facilitate the cycle scheme |
| Russian Olive | <i>Elaeagnus angustifolia</i> | 1 | To be retained |
| Rowan | <i>Sorbus aucuparia</i> | 1 | To be retained |
| Pear | <i>Pyrus spp.</i> | 1 | To be retained |
| Birch | <i>Betula pendula</i> | 1 | To be retained |
| Holly | <i>Ilex aquifolium</i> | 1 | To be retained |
| Sycamore | <i>Acer pseudoplatanus</i> | 2 | To be retained |
| Himalayan birch | <i>Betula utilis</i> | 1 | To be retained |

Depositing / Lowland River (FW1)

As noted, the Priory Stream flows through the western extents of the study area. The watercourse is an open channel within Blackrock Park which is canalised with old stone vertical walls largely the watercourse banks within the study area. This stream outfalls into Dublin Bay ca. 200m downstream of the study area and is a tidal influenced watercourse with incoming tidal waters flowing upstream through the watercourse channel. Upstream of the study area, this stream receives surface water drainage from extensive urbanised areas and is culverted under Blackrock's residential areas for large sections. The stream is not considered to be of high ecological value given its largely culverted nature, however, the importance of the stream in relation to the study area and proposed project is that it provides a potential hydrological link to the internationally protected designated conservation sites with Dublin Bay. The stream is considered to be of ecological value at a local level.

BC4 Flower Beds and Borders

The residential property within the Site is comprised of a highly formalised landscaped garden comprised predominantly of non-native ornamental trees and shrub species. A wide variety of ornamental non-native shrub and vascular plant species form the understory in front of the tree line with ivy (*Hedera helix*) predominantly forming groundcover under the trees. Refer to Plates 3-3 – 3-9 below for site photos of formal landscaped gardens within the study area. The ornamental planting within the residential garden is considered to be of local ecological value and it provides habitat for pollinating insects.

GA2 Amenity Grassland

A section of the garden within the Site (Refer to Figure 3-3) is comprised of formal lawns which are classified as amenity grassland (GA2). The small areas of amenity grassland are of low ecological value.

BL1 Stone Walls

Within the study area the entire garden is bordered by a ca. 2m high stone wall (BL1). The stone wall has no gaps or holes which could provide access for terrestrial mammal species such as badger (*Meles Meles*) or hedgehog (*Erinaceus europaeus*). The stone wall at the rear (southern extent) of the garden has numerous holes and crevices, however, this wall is unlikely to support roosting bats as it is within shade/darkness all year round and does not have ease of flight access for bats, due the nature of the dense landscaping within the garden (Refer to Section 3.4.2 below for bat activity survey findings). Ivy was noted growing over the top of the wall in places. Aside from the patches of ivy, the wall is considered to have no ecological value.

BL3 Artificial Surfaces

There is a tarmac pathway linking Blackrock Park to Blackrock Dart Station. This pathway borders the entirety of the residential garden and associated boundary wall. There are also gravel pathways within the landscaped garden. These artificial surfaces have no ecological value.

Scattered trees and parkland (WD5)

Adjacent to the Site, almost all of Blackrock Park is identified as scattered trees and parkland habitat, with the exception of the northern section of the park which has been classified as amenity grassland. As noted in Section 3.2.4, within Blackrock Park there are 2 no. trees; Scot's pine (*Pinus sylvestris*) and sycamore (*Acer pseudoplatanus*) adjacent the project Site which are being retained. The pine tree with the potential bat roost features is considered to be of local ecological value.

The aforementioned habitats occurring within the project Site are illustrated in Figure 3-3 below. Refer to Plates 3-3 – 3-9 below for site photos of the project Site.

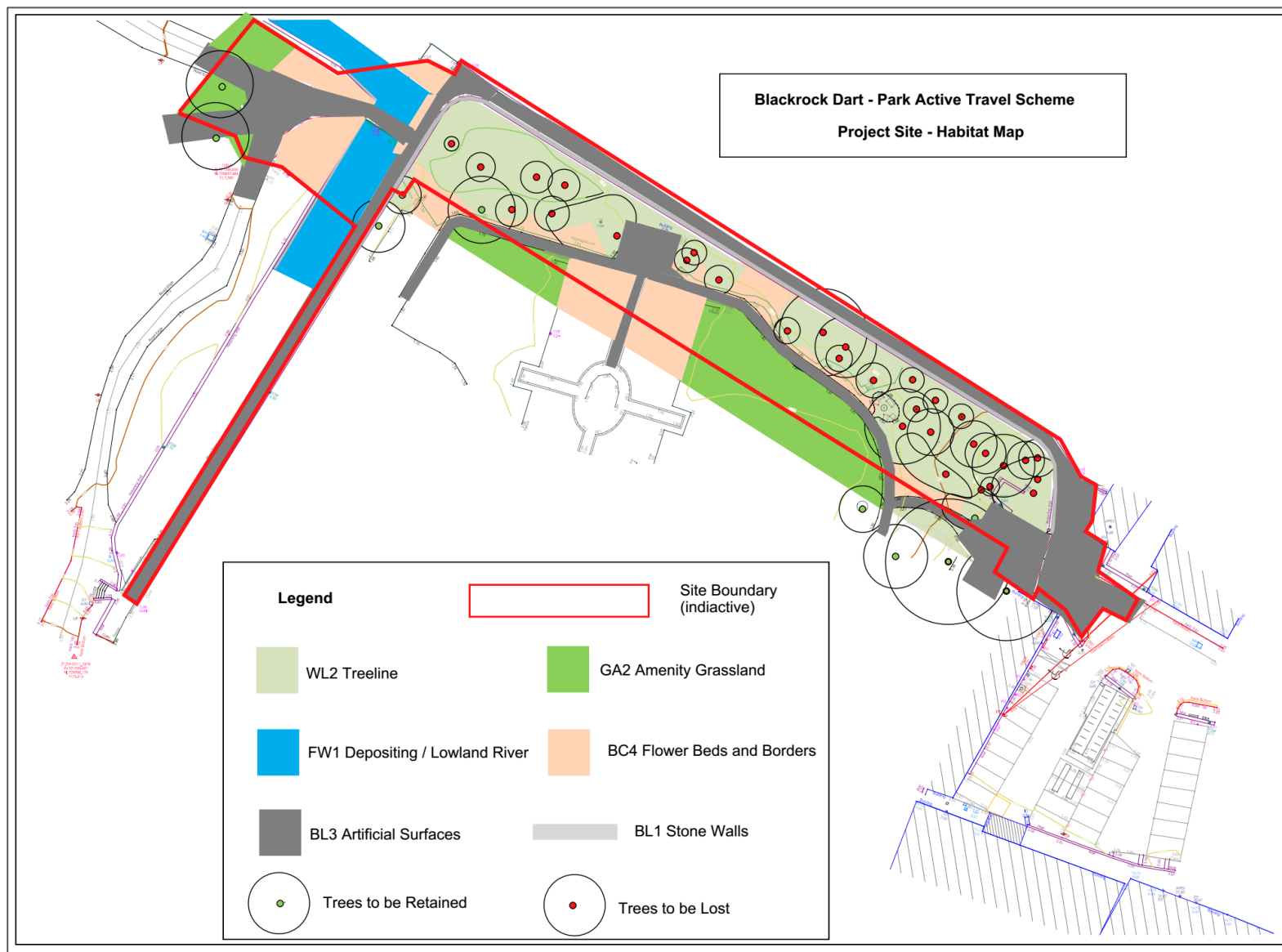


Figure 3-3 - Project Site Habitat Map



Plate 3-3 Priory Stream with bridge.



Plate 3-4 Canalised Priory Stream.



Plate 3-5 Residential garden treeline with folly.



Plate 3-6 Treeline (Russian Olives) in residential garden.



Plate 3-7 & 3-8 Flowers in garden suitable for pollinator species.



Plate 3-9 Pine tree in Blackrock Park.

3.4. Species records and Site Survey Evidence

This section of the report outlines species that have been recorded within the Site. National Biodiversity Data Centre (NBDC⁹) datasets of rare and protected species records for Ordinance Survey Ireland grid squares; O2213295, O2213296, O2214295 and O2214296 where reviewed (November 2022). These grid squares encompass the Site and a section of Dublin Bay. Species recorded within the last ten years (2013-2023) are outlined below.

This section of the report also outlines the findings of Site surveys undertaken by Atkins ecologists in October 2022 and in September 2023.

3.4.1. Birds

The entirety of protected species recorded within reviewed grid squares are birds associated with the neighbouring Dublin Bay and include; Common Greenshank (*Tringa nebularia*), Common Redshank (*Tringa totanus*), Dunlin (*Calidris alpina*) and Ringed Plover (*Charadrius hiaticula*). All the aforementioned species are protected under the Irish Wildlife Acts and Dunlin is also protected under the EU Birds Directive.

There are no other records of protected species (birds or otherwise) within the review datasets within the last ten years.

The landscaped areas of the residential garden provide for suitable bird nesting and foraging habitats. The semi natural habitats within the park provide for nesting and foraging habitats for local passerine bird species.

Areas of Blackrock Park are known to be frequented by wintering waterbirds that forage and roost outside of Dublin Bay's wetland and coastal habitats. For example, Brent Geese are known to forage and roost on the artificial lake within Blackrock Park, noted to be c. 140m from the Site.

3.4.2. Mammals

Within the Site the entire garden is bordered by a ca. 2m high stone wall. The stone wall has no gaps or holes which could provide access for terrestrial mammal species such as badger (*Meles Meles*) or hedgehog (*Erinaceus europaeus*). The stone wall surrounding the garden is directly bordered/edged on the outside by a tarmac path which completely restricts the potential for badgers or other mammals to dig or burrow under the concrete foundations of the stone wall. No evidence of badger or hedgehog were noted during the 2022 walkover surveys. In addition, site surveys¹⁰ were undertaken within Blackrock Park for terrestrial mammals such as badger during 2020 with no evidence found. It is considered that terrestrial mammals, such as badgers, do not pose an ecological constraint to the proposed scheme.

Bats

All bat species in Ireland are protected under the Wildlife Acts 1976-2012 and are listed in Annex IV of the EU Habitats Directive 92/43/EEC (as amended). It is an offence under Section 23 of the Wildlife Acts 1976-2012 and under Section 51 of the European Communities (Birds and Natural Habitats) Regulations, 2011 to kill or to damage or destroy the breeding or resting place of any bat species. Under the Birds and Natural Habitats Regulations it is not necessary that the action should be deliberate for an offence to occur. This places an onus of due diligence on anyone proposing to carry out works that that might result in such damage or destruction.

Bat surveys¹¹ undertaken within Blackrock during 2020 recorded Common Pipistrelles foraging within this unlit, darker area of Blackrock town.

During the 2022 Site survey, the Scot's pine adjacent to the Site in Blackrock Park was noted to have bat roost features with crevices noted in the upper trunk and limbs. During the 2022 Site survey, the trees within the residential garden of the project site were visually inspected for signs of holes, cracks and crevices which could provide for bat roosting habitat, no potential bat roost features were found within any of the trees within the garden. The stone wall at the rear (seaward side) of the garden has numerous holes and crevices, however, this wall is unlikely to support roosting bats as it is within shade/darkness all year round and does not have ease of flight access for bats, due the nature of the dense landscaping within the garden. There is a folly made of

⁹ <https://maps.biodiversityireland.ie/Map>

¹⁰ Atkins (2020) Dublin Bay Trail S2S, Environmental Constraints Study.

¹¹ Aughney, T., (2020) Bat Assessment Report for Dublin Bay Trail.

stonework within the landscaped areas, this folly does not have any features which could accommodate roosting bats.

A bat activity survey was conducted on the 20th of September 2023 by Atkins Ecologist Daniel Blake using an Echometer Touch 2 Pro. The survey was conducted to inform the potential presence or absence of bats and the potential usage of the Site by bats.

Methodology – the bat activity survey was conducted to determine the presence or absence of bats on the Site and if present to determine what the Site is being used for (i.e. commuting, foraging, breeding etc). The bat activity survey was conducted within the appropriate seasonal window (between April and October) and was conducted when temperatures were approximately 14°C, with mainly dry conditions and minimal wind. The survey was started 30 minutes before sunset and was completed two hours after sunset. Environmental factors listed above, and the cloud cover and any potential constraints were recorded for the survey. A handheld bat detector was used to record and identify the species of bat present and coupled with any sightings, any behaviour could be readily identified. A transect of the suitable habitat was walked with the detector noting any locations, species and behaviours of the bats.

Constraints – The treeline located in private garden was the focal point of the survey, however, no access to the garden was granted. As such, the area was surveyed from the adjacent alleyway, parkland and adjoining station platform. This alley was within half a metre of the treeline and using the alleyway and the station platform, suitable lines of sight were available for the survey. There was light rain on two separate occasions during the survey. Due to the sporadic nature of the rain and it being less than 15 minutes in total, this light rain was considered to have had no adverse effects on the survey.

Results – No bats were observed during the survey. No bat roosts were identified during the survey. Though the treeline within the residential garden could be used as a suitable linear feature for commuting bats, it is not considered a favourable location due to high disturbance from local lighting, train disturbance, high volumes of people and potential adverse/windy weather from its coastal location. No evidence of bat activity was noted during the survey and it is considered the lack of bat roost features, the small size of the Site coupled with the above factors limits the potential for the Site to provide for bat roosting habitat or to provide for foraging /commuting habitat.

Other mammals

The Site survey undertaken in 2022 did not find any evidence of otter activity along the Priory Stream. In addition, the stream was surveyed in 2020 as part of the Dublin Bay Trail project with no evidence of otter found. The Priory Stream does not provide for suitable otter habitats nor is the watercourse likely to accommodate prey species to any significant extent. In addition, the Dublin City Otter Survey report 2019¹² did not find any otter activity along the Priory Stream within Blackrock Park.

Foraging evidence of fox was noted within the garden's understory with bird remnants (feathers and bones) found within the southwest section of the walled garden, it is assumed that urban foxes have access through the gates at the front of the residential property.

Other Fauna

The wide array of flowering vascular plants found within the central sections of the residential garden are highly suitable for pollinator species.

3.5. Invasive Plant Species

The Site was also surveyed for invasive plant species as listed on the third schedule of the EC Birds and Natural Habitats Regulations 2011 S.I. No. 477/2011 with none found.

¹² Macklin, R., Brazier, B. & Sleeman, P. (2019). Dublin City otter survey. Report prepared by Triturus Environmental Ltd. for Dublin City Council as an action of the Dublin City Biodiversity Action Plan 2015- 2020.

Note: Otter surveys commissioned for this study were undertaken by R. Macklin, Triturus Ecology, lead author/surveyor for Dublin City otter survey, reference above.

3.6. Key Ecological Receptors

In summary, the Site does not lie within any area that has been designated for nature conservation at an international or national level, however, there is potential hydrological connectivity via the Priory Stream. There are no habitats listed on Annex I of the Habitats Directive or records of rare or protected plants within the Site or connected to the Site. There are no plants within the Site which are listed as alien invasive species¹³.

No evidence of protected mammal species was noted within the Site during 2022 and 2023 surveys. No terrestrial mammal refugia is located within the Site. No evidence of bat roosts nor bat activity was noted within the Site during the surveys and the Site is considered not to be highly suitable for bats. As such, protected mammals are not considered to be an ecological receptor.

Habitats within the Site which are not of local ecological value such as; amenity grassland, stone walls, artificial surfaces are not considered to be ecological receptors.

Significance criteria are available from guidance published by the National Roads Authority (NRA, 2009). The ecological evaluation of the various habitats found within the Site is detailed in Table 3-5 below.

Table 3-5 – Summary of Ecological Receptors.

| Ecological Feature | Ecological Importance | Connectivity to the project Site |
|--|---------------------------|---|
| South Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, South Dublin Bay and River Tolka Ramsar Site | Internationally protected | There is potential hydrological connectivity to these internationally protected sites via the Priory Stream. |
| South Dublin Bay pNHA | Nationally important | There is potential hydrological connectivity to this nationally important site via the Priory Stream |
| Priory Stream | Local importance | Flows through the study area. |
| Scots Pine trees within Blackrock Park | Local importance | Tree has potential bat roost features – crevices in trunk. This tree is to be retained and protected. |
| Treeline (WL1) in residential garden | Local importance | The treeline within the project site provides for bird nesting and bird foraging habitat. |
| Flower Beds and Borders (BC4) in residential garden | Local importance | The soft landscape features within the project site provide for bird foraging habitat and habitats suitable for pollinator species. |
| Nesting birds | Nationally important | The treeline within the project site provides for bird nesting and bird foraging habitat. |
| Wintering Birds | Internationally important | The adjoining Blackrock Park is known to accommodate wintering birds associated with South Dublin Bay and River Tolka Estuary SPA |

¹³ As listed on the third schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/ 2011.

4. Impact Assessment

4.1. Potential Impacts

The potential for impacts on nature conservation interests have been assessed in light of habitats and the species that are likely to be affected by the proposed project. The approach considers the following guidance: -

- Guidelines on the Information to be Contained in Environmental Impact Assessment Report, EPA (2017);
- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018);
- Guidelines for Assessment of Ecological Impacts of National Road Schemes, 2nd Edition (NRA, 2009);
- Guidelines for the treatment of Otters Prior to the Construction of National Roads Schemes (NRA, 2006);
- Guidelines for the treatment of Badgers Prior to the Construction of National Road Schemes (NRA 2006); and
- Requirement for the Protection of Fisheries Habitat During the Construction and Development Works at River Sites (Eastern Regional Fisheries Board, 2006).
- Dun Laoghaire-Rathdown County Biodiversity Action Plan 2021-2025

Potential impacts from the proposed scheme on the key ecological receptors of protected sites and habitats (which are listed in Section 3 above) are outlined in this section. Potential direct and indirect impacts during both construction and operational phase of the proposed scheme are discussed. Impacts to European sites are also considered in detail within the accompanying Appropriate Assessment report.

4.1.1. International Sites

The proposed scheme does not directly intersect or lie within with any European site. The proposed Active Travel Scheme has potential indirect connectivity to the South Dublin Bay based European sites through the surface water feature of the Priory Stream. The European sites with this potential indirect connectivity are; South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA located c. 200m downstream from the project Site.

The proposed scheme has been subject to the Appropriate Assessment (AA) process. The Appropriate Assessment Screening Report for the project (Atkins Document reference; 5217648DG0038), which accompanies this report, concludes and that significant effects or impacts to the surface water quality of the Priory Stream are not considered likely during the construction of operational phases of the project. As the Priory Stream is the only indirect pathway to any European site and given that no impacts to surface water quality are anticipated, it is concluded that there will be no likely effects on any European site as a result of the proposed project. The conclusions of the AA Screening report are summarised as follows: -

'Works are proposed within 20m of South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA. There is indirect connectivity from the project site to the SAC and SPA via the Priory Stream. Given the location, duration and scale of the works and the nature and scale any construction related impacts that the proposed project could potentially generate, it is considered that the proposed project will not result in negative effects to the water quality of the Priory Stream. As negative effects to the water quality of the Priory Stream are not anticipated, there will be no likely significant effects.'

This Screening for Appropriate Assessment report is based on the best available scientific information. It is concluded by the authors of this report that the proposed Blackrock Dart-Park Active Travel Scheme, either alone or in-combination with other plans or projects, will not result in likely significant effects on South Dublin Bay SAC or South Dublin Bay and River Tolka Estuary SPA or any other European site. Thus, it is recommended that it is not necessary for the project to proceed to Appropriate Assessment'.

The lack of likely significant effects to South Dublin Bay SAC and South Dublin Bay and River Tolka Estuary SPA are similarly considered for South Dublin Bay and River Tolka Ramsar Site.

4.1.2. Proposed Natural Heritage Areas

The South Dublin Bay pNHA site covers the same geographical range and is of national importance for the same conservation interests as South Dublin Bay SAC. The lack of likely significant effects to South Dublin Bay SAC are similarly considered for South Dublin Bay pNHA.

4.1.3. Watercourse - Priory Stream

The proposed scheme crosses the Priory stream. The removal of the existing (ca. 5m long) bridge and the installation of the new prefabricated bridge are the works elements that have the potential to affect the water quality of the Priory Stream. For bridge removal, the steel supporting beams of the existing steel span bridge deck will be cut and the bridge span will be removed in one piece by use of a mobile crane. The existing abutments and stone walls forming the banks of the canalised stream will be left in situ. Bridge removal works will take approximately one day and no instream works, no excavations and no potentially contaminating materials (such as cement) are required for this element of the works. Given the scale, nature and duration of these works, the removal of the bridge will not affect the watercourse.

The installation of the new proposed prefabricated bridge will involve drilling 6no. foundation piles and the use of concrete for bridge pile foundations with the nearest foundation pile being 1.3m from the Priory Stream. Works will only be undertaken during a period of dry weather and will not be undertaken during periods of stormy weather or high spring tides. Bored soil materials will be removed from site for disposal to a licenced waste facility. The cast in-situ concrete piles will be constructed at the two abutment locations with the use of temporary steel guide casings in the bore holes. The drilling of the 6no. bore holes and pouring of the 6no. foundation piles is estimated to take one week. As per normal construction techniques, concrete will be contained within shuttering and the guide casings within the bore holes. Given the small scale nature and duration of the 6no. foundation pile works and as works will be undertaken during dry weather conditions and given that concrete will be contained within shuttering/casings, no impacts to the watercourse or water quality will occur.

4.1.4. Treeline

The proposed scheme will result in the loss of the c. 100m treeline in the residential garden. There are 39 no. trees within the residential garden area of the Site and 31 no. of these trees will be lost as result of the construction of the proposed scheme.

4.1.5. Flower Beds and Borders

The residential property within the Site is comprised of a highly formalised landscaped garden comprised predominantly of non-native ornamental trees and shrub species. A wide variety of ornamental non-native shrub and vascular plant species form the understory in front of the treeline. There will be a direct loss of the ornamental non-native shrub and vascular plant species within the residential garden within the footprint of the proposed scheme.

4.1.6. Species

There will be a direct loss of bird nesting and bird foraging habitat (c. 100m of treeline and ornamental planting area) within the footprint of the Site located within the residential garden. The loss of the ornamental planting will also result in a loss of habitat for pollinating species.

Blackrock Park is known to accommodate wintering waterbirds which are Species of Conservation Interest for South Dublin Bay and River Tolka Estuary SPA, for example Brent Geese are known to forage and roost around the artificial lake within the park (c. 140m from the project Site and nearest point). The wintering birds utilising the busy park are habituated to a certain extent to human presence. During the construction phase, the project site will be surrounded by hoarding which will screen any ex-situ wintering waterbirds from construction activities. This screening, combined with the relatively short duration of the construction activities, will ensure there is no significant displacement or disturbance to birds utilising the neighbouring park.

No impacts to any other fauna are considered likely.

4.2. Mitigation Measures

The following mitigation measures are proposed for the Site.

An Outline Construction Environmental Management Plan (OCEMP) has been prepared for the proposed scheme (Atkins document reference; 5217648DG0063) and this management plan will be further developed by the Contractor prior to the construction phase. The Contractor will develop a construction phase Construction Environmental Management Plan (CEMP) which will detail biodiversity protection measures as outlined in the OCEMP. The Contractor's CEMP will document the commitment to safeguarding the environment through the identification, avoidance and mitigation of the potential negative environmental impacts which are associated with the construction proposed scheme.

Construction Phase mitigation measures shall also include following;

- Removal of nesting habitat i.e. the treeline and ornamental planting in the residential garden, will be carried out outside the breeding bird season from 1st March to 31st August inclusive. Where nesting habitat clearance cannot be avoided during this period then a suitably qualified ecologist will oversee clearance of nesting habitat and ensure the area is free of nesting birds. Should nests be found clearance will not be undertaken until chicks have fledged or the nest is no longer in use. Ecological surveys will be undertaken within the Site prior to any Site clearance or construction activities to assess the Site for the presence of protected species which may have moved into the Site.

4.2.1. Biodiversity Enhancement

The proposed project will result in the loss of habitats of local ecological value within the footprint of the proposed project. Habitat loss will be within the residential garden area consisting of a treeline with 31 no. trees and surrounding ornamental shrub planting.

In line with Dun Laoghaire Rathdown County Biodiversity Action Plan (BAP) 2021-2025 to '*develop ecologically resilient and varied landscapes and integrate adaptation and mitigation measures into management, planning and decision-making*', a landscaping design will be developed at the detailed design stage of the proposed scheme.

The landscaping design will outline specimen trees and shrubs suitable for a coastal location, wildflower meadow underplanting within a grass verge bordering the new cycleway and footpath. Given the maturity of the habitats within the residential garden to be lost and given the inclusion of the hardstanding surfaces of a new cycleway and footpath, the proposed scheme will result in a net loss of local ecological value habitats within the footprint of the project Site.

However, as detailed previously (refer to Section 2.10), the proposed scheme can be considered to facilitate certain elements of the Blackrock Park Masterplan. The Masterplan includes for biodiversity enhancement measures within the neighbouring park including an increase in tree canopy along coastal edge using evergreen species, the planting of groves of small trees and meadow planting and planting a large scale high quality herbaceous display suitable for coastal conditions. As such, the Masterplan proffers the opportunity for the two projects to act in combination to provide ecological enhancement to the surrounding environment which will offset the loss of habitats within the residential garden.

4.3. Cumulative Impacts

Dún Laoghaire-Rathdown Plans

Dún Laoghaire-Rathdown County Development Plan 2022-2028 sets out policies and objectives for the development of the county. The plan aims to create vibrant, liveable, climate resilient communities. The Plan also requires that any developments must be subject to AA process and that permitted developments comply with the requirements of the WFD, the relevant River Basin Management Plans and the Habitats Directive. A Strategic Environmental Assessment (SEA) was prepared for the Plan and went through the AA process. The findings of which were integrated into the objectives of the Plan resulting in a plan that affords high level protection to the environment and Natura 2000 sites.

Blackrock Local Area Plan (LAP) 2020-2025 aims to set out a framework for the physical development of the Blackrock area to generate growth in a co-ordinated, sensitive and orderly manner while conserving the area's natural and cultural heritage. The LAP strives to inform the general public, statutory authorities, developers and other interested bodies of the policy framework, objectives and land-use proposals for the Blackrock area. The Blackrock LAP has been subject to the Appropriate Assessment process which concluded that the LAP will not have a significant effect on the Natura 2000 network.

As noted, Dún Laoghaire-Rathdown County have developed a Masterplan for the enhancement of Blackrock Park. The Masterplan includes amongst the objectives; *'creating a naturalised bank along the Priory Stream, upgrade the bridge for access for cyclists and pedestrians, expand the sub-standard laneway to improve pedestrian/cycle permeability and connectivity'*. As such, the proposed Active Travel Scheme can be considered to facilitate certain elements of the Blackrock Park Masterplan. The Blackrock Park Masterplan has been subject to the Appropriate Assessment process which concludes: *'It is concluded that the Masterplan will not give rise to any significant adverse effects on any designated European sites, alone or in combination with other plans or projects.'* Given the environmental protection and biodiversity enhancement measures built into the Masterplan (Refer to Section 2.10), it is considered that the proposed scheme will not act in combination with the Masterplan to cause negative effects to the receiving environment. Moreover, the Masterplan proffers the opportunity for the two projects to act in combination to provide ecological enhancement to the local environment.

Dún Laoghaire-Rathdown Projects

Living Streets Blackrock: - the proposed living streets scheme will upgrade the urban realm in Blackrock Village with new hard and soft landscaping, planting, and street furniture it will also enhance the pedestrian and cycle infrastructure in the village. The scheme will include works to the following roads: Rock Hill, Main Street, Georges Avenue, Main Street East (Maretimo Terrace), Carysfort Avenue and Temple Road. An AA Screening determination has been made for this Living streets scheme which concludes; *'It is concluded that the proposed development will not give rise to any significant adverse effects on designated European sites, alone or in combination with other plans or projects.'*

Living Streets: Coastal Mobility Route: - The Living Streets: Coastal Mobility Route in Dun Laoghaire is a transportation project aiming to improve mobility and connectivity along the coast. In 2020 DLRCC implemented a temporary one-way traffic system from Blackrock to Sandycove and reallocated the surplus road space to a two-way segregated cycle track. The proposed works will further improve this temporary route and make it permanent. This scheme has been subject to the AA process which concludes: *'It is concluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, that the proposed development, individually or in combination with other plans and projects, in the absence of mitigation, will not have a significant effect on any European Site designated under the Habitats Directive and Birds Directive'*.

In addition, Dún Laoghaire-Rathdown County Council, in conjunction with the National Transport Authority, has recently developed sustainable transport improvements on the Rock Road between Blackrock Park and Trimleston Avenue. This Active Travel Scheme is a short two way cycleway facility which will not act in combination with the proposed project to give rise to adverse effects on the receiving environment.

Other Statutory Bodies Projects

A review of Transport Infrastructure Ireland (TII) publicly available planned projects¹⁴ did not identify any road projects in the vicinity of the proposed project.

A review of Uisce Eireann projects¹⁵ did not identify any ongoing water or wastewater projects in the vicinity of the proposed project.

A review of the National Transport Authority (NTA) Greater Dublin Area Cycle Network Plan (2022)¹⁶ identifies a number of future cycleways projects within the vicinity of the proposed project which are currently under development. A review of other National Transport Authority projects also identifies the Bus Connects project which plans to go through Blackrock. These future projects are detailed below.

Dún Laoghaire-Rathdown Future Projects

It is a policy of Dún Laoghaire-Rathdown County Council to promote the development of the Sutton to Sandycove Promenade and Cycleway, as a component part of the National East Coast Trail Cycle Route and also the Dublin Bay Trail from the boundary of Dublin City to Wicklow County.

These future coastal route projects, which are within the vicinity of the proposed active travel scheme, are at development stage and have not been subject to the planning process. These coastal routes will be subject to a feasibility study, including an assessment of the route options. Any development proposals shall be subject

¹⁴ <https://www.tii.ie/public-transport/projects-and-improvements/>

¹⁵ <https://www.water.ie/projects/?map=our-projects&id=627>

¹⁶ <https://www.nationaltransport.ie/wp-content/uploads/2023/01/2022-GDA-Cycle-Network.pdf>

to Ecological Impact Assessment and Appropriate Assessment Screening to ensure the protection and preservation of all designated SACs, SPAs and pNHAs in Dublin Bay and the surrounding area.

Granted Developments

A search of Dún Laoghaire-Rathdown County Council Planning and An Bord Pleanála planning applications has been undertaken for applications submitted within the last 5 years in the vicinity of the proposed development (last accessed April 2024). Near the proposed works, projects that have been granted planning permission include; retention of existing developments, typical extensions to domestic dwellings or the construction of new domestic dwellings. Regarding potential impacts to water quality, these projects will have conditions attached to their planning permission relating to sustainable development, such as foul water drainage requirements and clean surface water run-off drainage requirements. Therefore, it is not anticipated that the developments that have been granted permission will have any significant effects in combination with the proposed project.

Key developments which shall be considered are large-scale developments in the region of the proposed active travel scheme, there are 6 no. of these developments which have been further assessed in terms of in-combination effects with the proposed scheme and are presented in Table 4-1 below.

It is considered that there are no approved/ granted developments or projects that will act in combination with the proposed scheme to give rise to significant in-combination effects on the receiving environment.

Table 4-1 - Planning applications near the proposed scheme.

| Planning Ref. | Decision Date | Location | | In-combination assessment |
|---------------|-------------------------|---|--|--|
| D19A/0824 | 30/06/2020 | Congregation of the Holy Spirit, Blackrock College, Blackrock | Permission for the upgrading and reorientation of the existing natural grass playing pitches to reduce the existing gradient of the playing surface. The proposed works include the widening of an internal access road, new below ground drainage, soft landscaping and the introduction of grass embankments to facilitate the modified cross fall of the playing surfaces. Blackrock College has Protected Structures within its curtilage. | <p>A Natura Impact Statement has been prepared for this project, with the following conclusion:</p> <p><i>'It has been objectively concluded by Scott Cawley Ltd., following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the proposed development, that the proposed development will not adversely effect (either directly or indirectly) the integrity of any European site, either alone or in combination with other plans or projects, and there is no reasonable scientific doubt in relation to this conclusion.'</i></p> <p>Based on the location, scale and nature of this project, in-combination effects associated with the proposed Active Travel Scheme on the receiving environment will not occur.</p> |
| ABP-313509-22 | Decision due 06/04/2023 | National Transport Authority – Routed along the N31 Temple Road from the junction with Monkstown Road, then along R118 Rock Rd/Merrion Rd/Pembroke Rd/Baggot St Upper/Baggot St Lwr and | Belfield/Blackrock to City Centre Core Bus Corridor Scheme which has an overall length of approximately 8.3km including roadworks to facilitate bus, cycling and urban realm improvements along with any associated ancillary works for the scheme. | <p>A Natura Impact Statement has been prepared for this project, with the following conclusion:</p> <p><i>'...following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts form the Proposed Scheme and with the implementation of the mitigation measures proposed that the Proposed Scheme will not adversely affect (either directly or indirectly) the integrity of any European site, either alone or in combination with other plans or projects.'</i></p> <p>Based on the location, scale and nature of this project, in-combination effects associated with the proposed Active Travel scheme on the receiving environment will not occur.</p> |

| | | | | |
|---------------|------------|--|--|---|
| | | Fitzwilliam St Lwr and Nutley Lane | | |
| ABP-300745-18 | 25/05/2019 | IMRF Frascati Limited Partnership Frascati Shopping Centre, Frascati Road, Blackrock, Co. Dublin | 45no. apartment units over 3no. storeys, from second to fourth floor level, over the permitted ground and first floor levels of retail / restaurant floorspace and permitted lower ground floor car park. | The Competent Authority (DLRCC) provides an AA statement for the project as follows; <i>'the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on any European Sites'</i> Based on the location, scale and nature of this project, in-combination effects associated with the proposed Active Travel Scheme on the receiving environment will not occur. |
| LRD22A/0930 | 15/09/2023 | Dalguise House, Monkstown Road, Monkstown, County Dublin, | The Dalguise House Large-scale Residential Development is situated on the 3.58- hectare site of Dalguise House, Monkstown, Co. Dublin. The proposed development includes the demolition of a number of structures on site and the development of 494 no. residential units, 487 no. of which are new build and 7 no. which will be provided in existing buildings. | The Competent Authority (ABP) provides an AA statement for the project as follows:- <i>'...by itself or in combination with other development in the vicinity, the proposed development would not be likely to have a significant effect on any European Site in view of the conservation objectives of such sites.'</i> Based on the location, scale and nature of this project, in-combination effects associated with the proposed Active Travel Scheme on the receiving environment will not occur. |
| ABP 313509 | 27/03/2024 | BusConnects Belfield/Blackrock | The Proposed Scheme has an overall length of approximately 8.3km and is comprised of two main alignments in terms of the route it follows, from Blackrock to the City Centre and along Nutley Lane. | A Natura Impact Statement has been prepared for this project, with the following conclusion: <i>'following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the Proposed Scheme and with the implementation of the mitigation measures proposed that the Proposed Scheme will not adversely affect (either directly or indirectly) the integrity of any European site, either alone or in combination with other plans or projects.'</i> Based on the location, scale and nature of this project, in-combination effects associated with the |

| | | | | |
|------------|------------|-----------------------------|---|---|
| | | | | proposed Active Travel scheme on the receiving environment will not occur. |
| ABP 311190 | 08/12/2021 | Cross Avenue, Blackrock SHD | Strategic Housing Development - 244 no. Build to Rent apartments and associated site works. | <p>A Natura Impact Statement has been prepared for this project, with the following conclusion:</p> <p><i>'The NIS concludes that no adverse impacts are likely on any designated Natura 2000 sites or their associated qualifying interests or their conservation objectives.'</i></p> <p>Based on the location, scale and nature of this project, in-combination effects associated with the proposed Active Travel scheme on the receiving environment will not occur.</p> |

4.4. Residual Impacts

The proposed scheme will result in the loss of 31 no. trees and ornamental planting within a residential garden. Mitigation by avoidance is proposed for breeding birds. A landscape design and the inclusion of Blackrock Park Masterplan biodiversity enhancement measures will mitigate for the loss of habitats within the residential garden. The residual impact will be that the inclusion of new landscaping features and the Park enhancement measures will take time to establish.

Over the long term, enhancement proposals incorporated into the scheme design and also the Masterplan will improve the Site and the surrounding environs potential for foraging bats and birds and will increase the potential for nesting and roosting opportunities for both. The introduction of wildflower areas will lead to an availability for pollinating insects and food source for local bat and passerine bird populations.

This assessment has demonstrated that through iterative project design and assessment, and the identification of appropriate ecological mitigation measures, the residual ecological impacts of the scheme proposals are not expected to be significant and are expected to be localised to the Site and immediate environs. Local populations of breeding birds may suffer some habitat loss in the short term but, as the greater part of the Site is of low ecological value, habitat losses to proposed scheme are not considered significant. Some minor beneficial effects are expected over the long term and some opportunities for enhancement measures are presented. Provided ecological mitigation measures and monitoring are implemented correctly no cumulative impacts are expected.

5. References

- All-Ireland Pollinator Plan 2021-2025. National Biodiversity Data Centre
- An Bord Pleanála Planning Applications viewed through; EIA Portal (arcgis.com)
- Aughney, T., Kelleher, C., & Mullen, D., 2008. *Bat Survey Guidelines*, Traditional Farm Buildings Scheme. Heritage Council, Kilkenny;
- Aughney, T., Roche, N., & Langton, S., 2018. *The Irish Bat Monitoring Programme 2015-2017*. Irish Wildlife Manuals, No. 103. National Parks and Wildlife Service, Department of Cultural heritage and the Gaeltacht, Ireland;
- Bat Conservation Ireland, Available at <https://www.batconservationireland.org/>
- Birdwatch Ireland: - <https://birdwatchireland.ie/>;
- Botanical Society of Britain and Ireland (BSBI), 2019. List of Accepted Plant Names, 2019;
- CIEEM, 2017. *Guidelines for Preliminary Ecological Appraisal (2nd Edition)*; Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM, 2018: reprint 2022. *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.
- Gilbert, G., Stanbury, A. & Lewis, L., 2021. *Birds of Conservation Concern in Ireland 4, 2020-2026*;
- Collins, J., 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)*. The Bat Conservation Trust, London;
- Department of the Environment, Heritage and Local Government, 2010. *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities*;
- Department of the Environment, Heritage and Local Government (2009). *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities*.
- Dún Laoghaire-Rathdown County Council Planning Data viewed through; [National Planning Application Database \(arcgis.com\)](#)
- Dún Laoghaire-Rathdown County Development Plan 2022-2028
- European Commission (2018). *Managing Natura 2000 sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC*.
- European Commission (2001). *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC*.
- European Commission (2007). *Guidance document on Article 6(4) of the ‘Habitats Directive’ 92/49/EEC; clarification of the concepts of: Alternative solutions, Imperative reasons of overriding public interest, Compensatory Measures, Overall Coherence, Opinion of the Commission*.
- European Commission (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*.
- European Commission (EC) Birds Directive 2009/147/EC;
- European Commission (EC) Habitats Directive 92/43/EEC;
- European Communities (Birds and Natural Habitats) Regulations 2011-2015;
- Flora (Protection) Order, 2015 (S.I. No. 356 of 2015);
- Fossitt, J.A., 2000. *A guide to habitats in Ireland*. The Heritage Council;
- Kelleher, C., Marnell, F., 2006. *Bat Mitigation Guidelines for Ireland*. Irish Wildlife Manuals, No. 25. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland;
- National Parks and Wildlife Service (NPWS), 2021. Available at <https://www.npws.ie/>;

- National Parks and Wildlife Service, 2013. *The Status of EU Protected Habitats and Species in Ireland. The Status of EU Protected Habitats and Species in Ireland*;
- NPWS (2015). Site Synopsis; South Dublin Bay SAC Site Code: 000210, Rev 15.
- NPWS (2015). Site Synopsis; South Dublin Bay and River Tolka Estuary SPA Site Code 004024.
- NPWS (2013) Conservation Objectives: South Dublin Bay SAC 000210. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
- National Parks and Wildlife Service, 2019. *The Status of EU Protected Habitats and Species in Ireland. Species Assessments Volume 3. Version 1.0*. Unpublished Report, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland;
- National Roads Authority, 2006. *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes*. National Roads Authority, Dublin;
- National Roads Authority, 2006. *Guidelines for the Treatments of Bats Prior to the Construction of National Road Schemes*. National Roads Authority, Dublin;
- National Roads Authority, 2008. *Ecological Surveying Techniques for Protected Flora & Fauna during the Planning of National Road Schemes*;
- National Roads Authority, 2009. *Guidelines for the Assessment of Ecological Impacts of National Road Schemes Rev. 2*;
- National Roads Authority, 2009. *National Roads Authority Guidelines for Assessment of Ecological Impacts of National Road Schemes*;
- OPR (2021) Appropriate Assessment Screening for Development Management. OPR Practice Note PN01. Office of the Planning Regulator. Dublin, Ireland.
- Ordinance Survey Ireland, 2021. Available at <http://map.geohive.ie/mapviewer.html>
- Perrin, P.M. & Daly, O.H., 2010. *A provisional inventory of ancient and long-established woodland in Ireland*. Irish Wildlife Manuals, No. 46. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland;
- Smith, G., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011). *Best Practice Guidance for Habitat Survey and Mapping*. The Heritage Council, Church Lane, Kilkenny, Ireland;
- The Wildlife Act 1976 as amended by the Wildlife (Amendment) Act 2000;
- Transport Infrastructure Ireland, 2009. *Guidelines for Assessment of Ecological Impacts of National Roads Schemes (Rev. 2)*;
- Wetland Surveys Ireland, 2021. Available at - <http://www.wetlandsurveysireland.com/wetlands/map-of-irish-wetlands--/map-of-irish-wetlands---map/index.html>;
- Wilson, S. & Levett-Therivel, (2006) *Appropriate Assessment of Plans*. Scott Wilson, Levett-Therivel Sustainability Consultants, Treweek Environmental Consultants and Land Use Consultants.
- Wyse Jackson, M., FitzPatrick, Ú., Cole, E., Jebb, M., McFerran, D., Sheehy Skeffington, M., Wright, M., 2016. *Ireland Red List No. 10: Vascular Plants*. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin, Ireland.

WS Atkins Ireland Limited
Atkins House
150 Airside Business Park
Swords
Co. Dublin
K67 K5W4

© WS Atkins Ireland Limited except where stated otherwise