

# **Swords to City Centre Core Bus Corridor Scheme**

June 2022

## **Appropriate Assessment Report**

### **Screening Report**

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## 1 Introduction

1. This Report, which contains information required to assist the competent authority to undertake a screening for Appropriate Assessment (AA) in respect of the Swords to City Centre Core Bus Corridor Scheme (hereinafter referred to as “the Proposed Scheme”), has been prepared by Scott Cawley Ltd. on behalf of the National Transport Authority (NTA). It provides information on, and assesses the potential in view of best scientific knowledge, for the Proposed Scheme to have significant effects, either individually or in combination, with other plans or projects on the Natura 2000 network, (hereafter referred to as European sites)<sup>1</sup>. aims to provide enhanced walking, cycling and bus infrastructure on this key access corridor in the Dublin region, which will enable and deliver efficient, safe, and integrated sustainable transport movement along the corridor between Swords and the City Centre.
2. Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna (as amended) (the “**Habitats Directive**”) requires that, any plan or project not directly connected with or necessary to the management of European sites, but likely to have significant effects thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment of its implications for the European sites in view of their conservation objectives. The requirements of Article 6(3) of the Habitats Directive have been transposed into Irish law by part XAB of the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) (the “**2011 Birds and Habitats Regulations**”).

For the reasons set out in detail in this AA Screening Report, a Stage Two **Appropriate Assessment of the Proposed Scheme is required in this instance** as it cannot be concluded, on the basis of objective information, that the Proposed Scheme, either individually or in combination with other plans or projects, will not have a significant effect on the following European site(s): **North Dublin Bay SAC, South Dublin Bay SAC, Howth Head SAC, Howth Head Coast SPA, Rockabill to Dalkey Island SAC, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA and, Dalkey Islands SPA, Malahide Estuary SAC, Malahide Estuary SPA, Baldoyle Bay SAC, Baldoyle Bay SPA, Rogerstown Estuary SPA, Skerries Islands SPA, Rockabill SPA, The Murrough SPA, Ireland’s Eye SAC, Ireland’s Eye SPA, Lambay Island SAC and Lambay Island SPA.**

## 2 Methodology

### 2.1 Guidance

3. This Appropriate Assessment Screening Report has been prepared with regard to the following guidance documents, as relevant:
  - *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities.* (Department of Environment, Heritage and Local Government, 2010 revision);

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<sup>1</sup> The Natura 2000 network is a European network of important ecological sites, as defined under Article 3 of the Habitats Directive 92/43/EEC, which comprises both special areas of conservation and special protection areas. Special conservation areas are sites hosting the natural habitat types listed in Annex I, and habitats of the species listed in Annex II, of the Habitats Directive, and are established under the Habitats Directive itself. Special protection areas are established under Article 4 of the Birds Directive 2009/147/EC for the protection of endangered species of wild birds. The aim of the network is to aid the long-term survival of Europe’s most valuable and threatened species and habitats.

In Ireland these sites are designated as *European sites* - defined under section 177R of the Planning and Development Act 2001 (as amended) Regulations as (a) a candidate site of Community importance, (b) a site of Community importance, (ba) a candidate special area of conservation, (c) a special area of conservation, (d) a candidate special protection area, or (e) a special protection area. They are commonly referred to in Ireland as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

- Appropriate Assessment Screening for Development Management: OPR Practice Note PN01 (OPR, 2021); *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities*. Circular NPW 1/10 & PSSP 2/10;
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (European Commission, 2021);
- *Communication from the Commission on the precautionary principle* (European Commission, 2000);
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC* (European Commission, 2019); and *Interpretation Manual of European Union Habitats*. Version EUR 28. (European Commission 2013).

## 2.2 Assessment Methodology

4. The above referenced guidance sets out a staged process for carrying out Appropriate Assessment. To determine if an Appropriate Assessment is required, documented screening is required. Screening identifies the potential for effects on the conservation objectives of European sites, if any, which would arise from a proposed plan or project, either alone or in combination with other plans and projects (i.e. likely significant effects).
5. Significant effects on a European site are those that would undermine the conservation objectives supporting the favourable conservation condition of the Qualifying Interest (QI) habitats and / or the QI / Special Conservation Interest (SCI) species of a European site(s).
6. Image 1 describes the steps involved in Stage One Screening for Appropriate Assessment.

**Image 1: Stage One Screening Process for Appropriate Assessment**



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Assessing whether the potential impacts associated with the proposed development will undermine the conservation objectives of any European site(s), either alone or in combination with other plans or projects



Conclusions of screening assessment process

7. If the conclusions at the end of screening are that there is no likelihood of significant effects occurring on any European sites as a result of the proposed plan or project, either alone or in combination with other plans and projects, then there is no requirement to undertake an Appropriate Assessment.
8. In establishing which European sites are potentially at risk (in the absence of mitigation) from the Proposed Scheme, a source-pathway-receptor approach was applied. In order for an impact to occur, there must be a risk enabled by having a source (e.g., water abstraction or construction works), a receptor (e.g. a European site or its QI(s) or SCI(s)<sup>2</sup>), and a pathway between the source and the receptor (e.g. by air for airborne pollution, or a pathway by a watercourse for mobilisation of pollution). For an impact to occur, all three elements must exist; the absence or removal of one of the elements means there is no possibility for the impact to occur.
9. The identification of source-pathway-receptor connection(s) between the Proposed Scheme and European sites essentially is the process of identifying which European sites are within the Zone of Influence (Zol) of the Proposed Scheme, and therefore potentially at risk of significant effects. The Zol is the area over which the Proposed Scheme could affect the receiving environment such that it could potentially have significant effects on the QI habitats or QI / SCI species of a European site, or on the achievement of their conservation objectives<sup>3</sup>.
10. The identification of a source-pathway-receptor link does not mean that significant effects will arise. Rather, the likelihood for significant effects will depend upon the characteristics of the source (e.g. extent and duration of construction works), the characteristics of the pathway (e.g. direction and strength of prevailing winds for airborne pollution) and the characteristics of the receptor (e.g. the sensitivities of the European site and its QIs / SCIs). Where uncertainty exists, the precautionary principle<sup>4</sup> is applied.

## 2.3 Desktop Data Review

11. The desktop data sources used to inform the assessment presented in this report are as follows (accessed in November 2020 and reconfirmed as appropriate in April 2022):

<sup>2</sup> The term Qualifying Interest (QI) is used when referring to the habitats or species for which an SAC is designated; the term Special Conservation Interest (SCI) is used when referring to the bird species (or wetland habitats) for which an SPA is designated.

<sup>3</sup> As defined in the *Guidelines for Ecological Impact Assessment in the UK and Ireland* (CIEEM, 2018)

<sup>4</sup> The precautionary principle is a guiding principle that derives from Article 191 of the Treaty on the Functioning of the European Union and has been developed in the case law of the European Court of Justice (e.g. ECJ case C-127/02 – Waddenzee, Netherlands).

The guidance document *Communication from the Commission on the Precautionary Principle* (European Commission, 2000) notes that the precautionary principle “covers those specific circumstances where scientific evidence is insufficient, inconclusive or uncertain and there are indications through preliminary objective scientific evaluation that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal or plant health may be inconsistent with the chosen level of protection”.

Applying the precautionary principle in the context of screening for appropriate assessment requires that where there is uncertainty or doubt about the risk of significant effects on a European site(s), it should be assumed that significant effects are possible and AA must be carried out.

- Online data available on European sites and on Natural Heritage Areas (NHAs) or proposed Natural Heritage Areas (pNHAs) as held by the NPWS (NPWS 2022)<sup>5</sup>;
- Online data records available on National Biodiversity Data Centre Database (NBDC2022);
- Online data records made available via NPWS data request (NPWS 2020);
- Information on the status of EU protected habitats and species in Ireland (National Parks & Wildlife Service, 2019a, 2019b and 2019c);
- Ordnance Survey Ireland (OSI) orthophotography (from 1995 to 2012) for the Proposed Scheme study area;
- Bus Connects Drone Imagery, surveyed 2020;
- Habitat and species GIS datasets provided by the NPWS, including Article 12 and Article 17 data<sup>6</sup>;
- Records from the Botanical Society of Britain and Ireland (BSBI);
- Information contained within the Flora of County Dublin<sup>7</sup>;
- Environmental information/data for the area available from the EPA website [www.epa.ie](http://www.epa.ie);
- Information on the status of EU protected habitats and species in Ireland<sup>8</sup>;
- Information on light-bellied Brent goose inland feeding sites<sup>9</sup>;
- The results of ecological surveys undertaken as part of the Environmental Impact Assessment (EIA) studies for the Proposed Scheme See Section 3.2 below for details); and
- Information on the location, nature and design of the Proposed Scheme.

## 2.4 Consultations

12. Table 1 outlines the Appropriate Assessment issues raised during consultation, some of which are addressed in AA Screening as noted, whereas other such as the inclusion of mitigation measures which are addressed in the NIS.

<sup>5</sup> The following SAC and SPA GIS boundary datasets are the most recently available at the time of writing: SAC\_ITM\_2022\_02 and SPA\_ITM\_2021\_10.

<sup>6</sup> Article 17 of the EU Directive on the Conservation of habitats, Floras and Fauna (Habitats Directive) requires that all member states report to the European Commission every six years on the status and on the implementation of the measures taken under the Habitats Directive. In a similar manner, there is an obligation to report on the status and trends of bird species required under Article 12 of the Bird's Directive

<sup>7</sup> Doogue, D., Nash, D., Parnell, J., Reynolds, S. & Wyse Jackson, P. (eds) (1998) *Flora of County Dublin*. The Dublin Naturalists' Field Club, Dublin

<sup>8</sup> NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview. *Unpublished NPWS report*.

<sup>9</sup> Scott Cawley Ltd. (2017). *Natura Impact Statement – Information for Stage 2 Appropriate Assessment for the Proposed Residential Development St. Paul's College, Sybill Hill, Raheny, Dublin 5*.

**Table 1: Principal AA Issues Raised During Consultation**

| Consultee  | Phase / Date of Consultation        | Issues Raised   | Relevant Section of the AA where this is addressed  |
|--|-------------------------------------|---|---|
| <i>Department of Housing, Local Government and Heritage (formerly Department of Culture, Heritage and the Gaeltacht)</i> | 30/07/19<br>Ref. G<br>Pre00165/2019 | The Department recommend identification, description, and assessment of direct and indirect impacts of the Proposed Scheme on the following features: <ul style="list-style-type: none"> <li>Biodiversity in general and with specific attention to Natura 2000 sites.</li> <li>Habitats and species protected under the Habitats Directive, such as Annex I habitats, Annex II species and their habitats, and Annex IV species and their breeding sites and resting places (wherever they occur), bird species protected under the Birds Directive, such as Annex I species and other regularly occurring migratory species, and their habitats (wherever they occur).</li> <li>Species and / or habitats listed in the Habitats Directive inside or outside of Natura 2000 sites be recorded.</li> </ul> | Section 2.5 Baseline Surveys,<br>Section 3.2 Overview of Receiving Environment<br>Section 3.2.1 European Sites,<br>Section 3.3 Assessment of Potential Effects on European Sites                            |
|  |                                     | Detailed bird surveys should be undertaken at all times of the year to establish areas of the Proposed Scheme used by birds should be included in the AA.   | Section 2.5 Baseline Surveys,<br>Section 3.2 Overview of Receiving Environment<br>Section 3.3 Assessment of Effects on European sites   |
|  |                                     | Appropriate Assessment addresses the issue of invasive alien plant and animal species and include detailed methods to ensure accidental introduction or spreading does not occur. An Invasive Species Action Plan should form part of the planning application.   | Section 3.2.3, Section 3.3.4.<br>A non-native Invasive Species Management Plan has been prepared in respect of the Proposed Scheme as an appendix to the CEMP. It is not considered during the AA Screening |
|  |                                     | Cumulative impacts of the Proposed Scheme be considered, to include interaction between   | Section 3.4 In-Combination Effects  |

| Consultee                | Phase / Date of Consultation | Issues Raised   | Relevant Section of the AA where this is addressed   |
|--------------------------|------------------------------|---|--|
|                          |                              | different and / or approved plans and projects in the same area as the Proposed Scheme.   |  |
|                          |                              | <p>The Proposed Scheme be subject to Appropriate Assessment, and must contain complete (contain no lacunae), precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned.</p> <p>Mitigation requirements should outline measures proposed and timescales provided relative to the Proposed Scheme These should be based on scientific evidence with their effectiveness considered.</p> <p>Where residual impacts remain, further mitigation measures may be required:</p> <ul style="list-style-type: none"> <li>• Evidence should be provided of how mitigation measures will be monitored.</li> <li>• Monitoring should take place immediately downstream of the Proposed Scheme.</li> </ul> <p>The applicant should not use any proposed post construction monitoring as mitigation to supplement inadequate information in the assessment.</p> | <p>The Proposed Scheme has been subject to Screening for AA and the production of a Natura Impact statement, which accompanies the planning submission.</p> <p>Section 3.3 Potential Impacts, Zone of Influence and Identifying European sites at Risk of Effects</p> <p>Section 3.3 Assessment of Potential Effects</p> |
| Inland Fisheries Ireland | 1 July 2021 (email response) | <p>The topics addressed in the IFI email received on 31 July 2021 did not specifically mention Appropriate Assessment</p> <p>The response noted that proposals submitted by the designers in respect of:</p> <p>Indicative Superstructure design with need for instream scaffold and scour protection for a period estimated to be 8 weeks, programmed for August September</p> <p>were acceptable, however an agreed detailed contractor's method statement will be needed before the works begin.</p>   | The Proposed Scheme design has been cognisant of the IFI requirements, which are detailed in section 3.1   |



## 2.5 Baseline Surveys

13. Baseline ecological surveys were undertaken as necessary to inform environmental assessments of the Proposed Scheme. This section describes those ecological surveys which are relevant to and have informed the assessment of likely significant effects on European sites.

### 2.5.1 Habitats and Flora Survey

14. Habitat surveys were carried out by Scott Cawley Ltd. between June and August 2018 along the Proposed Scheme alignment. Confirmatory surveys were subsequently undertaken on the Proposed Scheme again in August 2020 to check and update the presence and extent of habitats found in the 2018 habitat surveys. Additional habitat surveys were carried out along any new route sections added since 2018. Additional surveys were undertaken in May 2022 at specific locations. All habitats located within or immediately adjacent to the Proposed Scheme footprint were surveyed and mapped to level three of the Heritage Council's habitat codes, after Fossitt<sup>10</sup> and in accordance with *Best Practice Guidance for Habitat Survey and Mapping*<sup>11</sup>. The level of field data quality was also recorded. Plant species present that were either representative of a habitat or considered to be of conservation interest (i.e. those listed on the Flora Protection Order 2015 or listed in the 'threatened' category or higher on the Red List for vascular plants and bryophytes) were recorded, along with their relative abundances. Non-native invasive plant species listed on the Third Schedule of the 2011 Birds and Habitats Regulations, 2011 were also recorded. Each habitat's extent was mapped onto an aerial photograph, with GPS points taken where a habitat's extent could not be clearly identified from the aerial photograph. Vascular plant nomenclature follows that of the *New Flora of the British Isles 4th Edition*<sup>12</sup>.
15. A desk study was carried out to identify all hydrological crossing points within the footprint of the Proposed Scheme. Construction methodologies, which involved in-stream works, modifications to banks or significant disturbance, were deemed to require in-stream aquatic habitat surveys. The desk study identified one site where water bodies may be subject to significant disturbance as a consequence of the Proposed Scheme. This site is located at the proposed crossing of the Tolka\_60 at the Proposed River Tolka Pedestrian / Cycle Bridge crossing point, adjacent to the existing Frank Flood Bridge.
16. This site was surveyed by Triturus Environmental Ltd. in October and November 2020. A broad habitat assessment was conducted at each site utilising elements of the methodology given in the Environment Agency's 'River Habitat Survey in Britain and Ireland Field Survey Guidance Manual 2003'<sup>13</sup> and the Irish Heritage Council's 'A Guide to Habitats in Ireland'<sup>14</sup>. All sites were assessed in terms of:
- Channel width and depth and other physical characteristics;
  - Substrate type, listing substrate fractions in order of dominance, i.e. bedrock, boulder, cobble, gravel, sand, silt etc.;
  - Flow type, listing percentage of riffle, glide and pool in the survey area;
  - In-stream macrophyte and aquatic bryophytes occurring and the prominence of each (DAFOR scale); and
  - General riparian vegetation composition.

<sup>10</sup> Fossitt, J.A. (2000) *A Guide to Habitats in Ireland*. Heritage Council, Kilkenny.

<sup>11</sup> Smith, G.F., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011) *Best Practice Guidance for Habitat Survey and Mapping*. The Heritage Council Church Lane, Kilkenny, Ireland.

<sup>12</sup> Stace, C. (2019) *New Flora of the British Isles. 4th Edition*. C&M Floristics

<sup>13</sup> Environment Agency. (2003). River Habitat Survey in Britain and Ireland: Field Survey Guidance Manual: 2003 Version. Forest Research.

<sup>14</sup> Fossitt, J.A. (2000) *A Guide to Habitats in Ireland*. Heritage Council, Kilkenny.

## 2.5.2 Fauna Surveys

17. Ecological surveys relevant to this Proposed Scheme include habitat surveys, surveys for the presence or signs of terrestrial, mobile Annex II species (i.e. otter *Lutra lutra*), and surveys for Special Conservation Interest bird species. Dedicated fisheries surveys were undertaken in areas where waterbodies may be subject to significant disturbance as a result of the Proposed Scheme i.e. the proposed widening of the River Tolka Bridge along the R132 in Drumcondra; however, the results of these surveys are not directly relevant to this assessment as the Proposed Scheme is not hydrologically connected to any European site designated for Annex II fish species or white-clawed crayfish. The nearest known European site designated for Atlantic Salmon *Salmo salar*, River Lamprey *Lampetra fluviatilis* and Brook Lamprey *L. planeri* is the River Boyne and River Blackwater SAC, located approximately 30.2km north-west of the Proposed Scheme in the Boyne River catchment. The nearest known European site designated for white-clawed crayfish *Austropotamobius pallipes* is the River Barrow and River Nore SAC, which is located approximately 58.1km south-west of the Proposed Scheme in the River Barrow catchment, River Nore catchment and River Ballyteigue-Bannow River catchment. There is no hydrological connectivity between the Proposed Scheme and these European sites.

### 2.5.2.1 Otter

18. The footprint of the Proposed Scheme and suitable lands (e.g., greenfield sites) immediately adjacent were surveyed for otter *Lutra lutra* activity as part of the multi-disciplinary walkover survey, undertaken between June and August 2018, and updated in August 2020. The areas where otters were surveyed from included 150 metres up and downstream of the Frank Flood Bridge crossing of the Tolka River. The presence / absence of these species was surveyed through the detection of field signs such as tracks, markings, feeding signs, and droppings as well as by direct observation. In addition, the study area was surveyed for the presence of otter holts. Where present, any evidence of use was recorded.
19. A desk study was carried out to identify all hydrological crossing points within the footprint of the Proposed Scheme. Construction methodologies which involved in-stream works, modifications to banks or significant disturbance were deemed to require otter surveys. The desk study identified one site where water bodies may be subject to significant disturbance as a consequence of the Proposed Scheme. The site is located at the Tolka River Bridge along the R132 in Drumcondra. A corridor of approximately 150m upstream and downstream was surveyed to identify the presence of otter holts in October 2020, although ad hoc sightings during other surveys were incorporated into the baseline.

### 2.5.2.2 Kingfisher

20. A desk study was carried out to identify all hydrological crossing points within the footprint of the Proposed Scheme. Construction methodologies which involved in-stream works, modifications to banks or significant disturbance were deemed to require habitat suitability assessments for nesting kingfisher. The desk study identified one site where water bodies may be subject to significant disturbance as a consequence of the Proposed Scheme. The site is located at the Tolka River Bridge along the R132 in Drumcondra. The suitability of water features and associated foraging, roosting, and nesting habitats, located within or directly adjacent to the Proposed Scheme, were assessed for Kingfisher potential in October 2020. Where suitable habitat existed, surveys extended approximately 500m upstream and downstream of the proposed crossing point. Evidence of kingfisher activity at any potential nest holes was recorded.

### 2.5.2.3 Other Birds

21. The results of the desk study have informed the assessment of likely significant effects on breeding bird species arising from the Proposed Scheme.
22. A desk study was carried out to identify any potential suitable inland feeding and / or roosting sites for winter birds located within or directly adjacent to the Proposed Scheme. This included a review of recent aerial photography and known inland feeding sites for the SCI bird species light-bellied Brent goose *Branta bernicla hrota*<sup>8</sup> (Scott Cawley Ltd 2017). A habitat suitability assessment was carried out in October 2020 to verify the suitability of potential inland feeding/roosting sites identified during the desk study.

23. Although a number of *ex-situ* wintering birds sites were noted from the desk study, there were no suitable wintering bird sites which would be subject to habitat loss by to the Proposed Scheme. As such it was not deemed necessary to carry out wintering bird surveys. The results of the desk study have informed the assessment of potential impacts on wintering bird species arising from the Proposed Scheme.

### 3 Provision of Information for Screening for Appropriate Assessment

24. The following sections provide information to facilitate the Appropriate Assessment screening of the Proposed Scheme to be undertaken by the competent authority.
25. A description of the Proposed Scheme and the receiving environment is provided to identify the potential ecological impacts. The environmental baseline conditions are described, as relevant to the assessment of ecological impacts where they may highlight potential pathways for impacts associated with the Proposed Scheme to affect the receiving ecological environment (*e.g.*, air quality, geological, hydrogeological and hydrological data *etc.*).
26. The potential impacts are examined in order to define the potential zone of influence of the Proposed Scheme on the receiving environment. This then informs the assessment of whether the Proposed Scheme will result in significant effects on any European sites; i.e. affect the conservation objectives supporting the favourable conservation condition of the European site's QIs or SCIs.

#### 3.1 Description of the Proposed Scheme

27. The following sections provide information to facilitate the Appropriate Assessment screening of the Proposed Scheme to be undertaken by the competent authority. A description of the Proposed Scheme and the receiving environment is provided to identify the potential ecological impacts.

##### 3.1.1 Overview

28. The Proposed Scheme has an overall length of approximately 12km and commences south of Swords at Pinnock Hill Junction and travels in a southerly direction along the R132 Swords Road past Airside Retail Park, Dublin Airport and Santry Park. The route continues on the R132 past Santry Demesne, where the Swords Road joins the R104 at Coolock Lane. The route continues on the R132 in a southerly direction through Santry Village. It continues along the Swords Road past Whitehall to Griffith Avenue. The route follows Drumcondra Road Upper past the DCU St Patrick's Campus to the Tolka River. It continues through Drumcondra, on Drumcondra Road Lower to Binns Bridge on the Royal Canal. From there it continues on Dorset Street Lower as far as Eccles Street, from where it continues on Dorset Street Upper to North Frederick Street and Granby Row.
29. For the purposes of describing the Proposed Scheme, it has been split into five main sections based on the nature of the route and the Construction works required.
- Section 1: Pinnock Hill to Airside Junction;
  - Section 2: Airside Junction to Northwood Avenue;
  - Section 3: Northwood Avenue to Shantalla Road;
  - Section 4: Shantalla Road to Botanic Avenue; and
  - Section 5: Botanic Avenue to Granby Road.
30. The Proposed Scheme will involve the delivery of an enhanced bus and cycleway system. The proposed works involve road resurfacing / reconstruction & associated footpaths, installation of signage, road markings, Bus Stops, street furniture, landscaping, junction upgrades, road widening to include bus lanes, upgrading of existing bus lanes, upgraded cycle facilities and cycle track segregation and pedestrian crossings.
31. The main characteristics of the Construction Phase of the Proposed Scheme that have the potential for ecological impact are:
- Site preparation and clearance;

- Vegetation (e.g. hedgerows, scrub, grassland) clearance and treatment of non-native invasive species (e.g. Japanese knotweed, Himalayan balsam, Giant hogweed) will be undertaken within the Proposed Scheme boundary, where necessary.
- Trees to be retained within and adjoining the works areas will be suitably protected as necessary as per the British Standards Institution (BSI) British Standard (BS) 5837:2012 Trees in Relation to Design, Demolition, and Construction (BSI 2012). Trees identified for removal will be removed in accordance with BS 3998:2010 Tree Work. Recommendations (BSI 2010). The location of trees to be retained, and trees to be removed is shown on the Landscaping General Arrangement Drawings (BCIDB-JAC-ENV\_LA-0002\_XX\_00-DR-LL-9001).
- As part of preparatory works, the Construction Compounds will be set up which will include installation of the necessary facilities including the site office, welfare facilities, etc. Controlled access to the Construction Compounds will be implemented, fencing will be erected, and lighting will be installed;
  - Removal of existing boundaries, pavement, lighting columns, bus stops, and signage;
  - Protection and / or diversion of buried services;
  - Road widening, roadreconfiguration, pavement reconstruction, lighting and kerb improvements;
  - Partial Demolition of Collinstown Cross Commercial Premises and Demolition of two Semi-Detached Cottages at the Royal College of Surgeons Sports Ground;
  - Strengthening work to Frank Flood Bridge (Tolka River Crossing) and the construction of a new pedestrian and cycle bridge is proposed along the western edge of Frank Flood Bridge leading into Our Lady's Park;
  - Construction of new sections of retaining walls throughout route;
  - Installation of new bus stops and junction / roundabout modification;
  - New footpaths and cycle tracks throughout each section of the Proposed Scheme;
  - Property boundary reinstatement, signage replacement, Installation of lighting columns; and
  - Landscaping and tree planting, and reinstatement of temporary and permanent land acquisitions.

### 3.1.2 Structural Works

32. The principal structures which form part of the Proposed Scheme include the pedestrian / Cycle Bridge at Frank Flood Bridge at Drumcondra and six retaining walls over 1.5 metres in height. Although the Proposed Scheme crosses the Royal Canal at Binn's Bridge, the works proposed do not require any instream works nor construction of new structural elements.

#### 3.1.2.1 Frank Flood Bridge

33. The Frank Flood Bridge (formerly known as Drumcondra Bridge) is an existing structure which is included on the Industrial Heritage Record, that carries the preferred route corridor over the Tolka River. The Proposed Scheme corridor is wider than the existing arrangement and consequently a proposed independent parallel pedestrian and cycle bridge is being proposed.
34. The existing bridge which was constructed in 1813 consists of a 3-span masonry arch with a total length of 19.48m and a width of 19.43m. The new highways arrangement will result in the removal of the western footpath and the introduction of a northbound bus lane running adjacent to the western parapet. This will require strengthening of the spandrel wall to accommodate the increase in surcharge. Mitigation measures will also be introduced to reduce the risk of collision with the substandard western parapet.
35. The proposed pedestrian and cycle bridge consists of a 50 metre 2-span steel structure comprising central varying depth box girder with a tie down arrangement at the north of the structure. The span arrangement is governed by the flood plain on the south side of the river which needs remain open for high flow

situations. North span will be 38m and south span will be 12m. The distance between the deck soffit and the ground varies. A minimum clearance of 1.5m is provided at the abutments.

36. Foundations for the proposed abutments, set back from the River Tolka on either bank will be situated in boulder clay and will require piled foundations to reach bedrock approximately 10 to 20metres below ground level.
37. The superstructure will consist of a central varying depth box girder to be proportioned to minimise structural depth above deck level and provide unobstructed views of the existing bridge from Our Lady's Park. The girder will increase in depth over the support locations and 'disappear' below deck level at mid span locations. Transverse members will have sufficient stiffness to distribute load into the central girder such that edge girder size can be minimised. Allowance will be made to accommodate the large number of services required below the deck. The substructure will consist of conventional bank seat abutments supported on piled foundations at the north and south end of the structure. The central support will consist of a leaf pier supported by piled foundations set back an appropriate distance from the river wall. A tie down arrangement will be created to the north of the structure with a tension connection between the central box and an independent pile group. This will limit midspan deflections allowing for a more slender structure.
38. The bridge deck superstructure will be continuous. It will be supported on bearings at both abutments and central pier. Additionally, the superstructure will be connected to an independent pile group via mechanical pin connections. The cross section of the deck is governed by the need to accommodate a large number of utility diversions.
39. In respect of the Proposed Works, the following is the proposed indicative construction methodology:
  - Site set-up including Construction Compound preparation – this will involve the partial closure of Our Lady's Park and the temporary removal of its heritage statue to a safe storage location offsite (if it cannot be protected onsite).
  - Enabling works including: Three new river bores under the River Tolka to accommodate the diversion of 2 number high voltage transmission cables and a large diameter water main.
  - The northern riverbank will be regraded, and part of the river wall will be demolished (small outstand at top of bank). Erosion control will be implemented at the toe of the riverbank to mitigate against future scour. Sediment will be prevented from entering the watercourse via silt curtains or closure of the northern arch, via sandbags. Further observation of river levels will be required to confirm the exact methodology. Operatives working in the watercourse will not be permitted outside the months of August and September;
  - Piles will be installed for the abutment and tie down. The existing wingwalls will be protected via the removal of highway loading or propping as appropriate. Temporary flood defences will be implemented as appropriate;
  - Construction of the north abutment, service bay, and tie down concrete plinth will be completed;
  - The south bank will be excavated to finished ground level (FGL) from the river wall to pier. The ground will be prepared from pier southwards to accommodate plant access. Piles for the pier will then be installed;
  - The pier will be constructed and a crane mat will be established south of the pier;
  - The mobile crane will be brought to site. The central beam river span will be delivered to the existing bridge under a full closure. The section will be lifted into position in a single operation to be supported with temporary bearings at the north abutment and pier locations;
  - A temporary platform / pontoon will be erected within the river channel to facilitate construction. The platform / pontoon will be located immediately upstream of the existing bridge. To ensure no increased in flood risk, the following mitigation measures will be put in place:

- In-stream works will be undertaken only from 1st August to 30th September when flows are expected to be at their lowest. This restriction also aligns with ecological restrictions on the works due to Salmon and Kingfisher habitats;
  - The platform will be designed so that it can be removed from the channel at short notice in the event of flood warning. The platform would be in place for a maximum of eight weeks assuming no requirement for it to be taken down, removed and re-erected; and
  - The existing gauging station at Drumcondra (ref 9019) will be continually monitored for changes in river level. A rate of rise analysis of the gauging station will be completed at detailed design to determine a trigger level when the existing platform needs to be removed due to the risk of flooding.
- Transportable sections of the remainder of the river span will be delivered to the existing bridge under a northbound lane closure. Sections will be lifted into position and spliced from the riverbank and river access locations;
  - Deck plates will be lifted into place and secured via countersunk bolts;
  - The crane will be demobilised and removed from site, and the south bank will be excavated to FGL to south abutment location. South abutment piles will be installed;
  - The south abutment will be constructed and backfilled;
  - The crane mat will be established south of the south abutment. The crane will be mobilised to carry out the works;
  - Back span sections will be delivered to site and lifted into position. Splices will be made from the south bank;
  - Back span deck plates will be lifted into position and secured to the outstand plates via countersunk bolted connections;
  - Tie connections will be formed with no grout beneath the plate. Bolts will be tightened to remove any slack in the connection, and grout will be placed beneath the base plate, with bolts stressed via embedded post tensioned bars;
  - The west footway and one northbound lane will be closed. Utilities will be diverted from the west spandrel wall and western footway to the new structure;
  - False soffit panels will be installed, paint system defects and areas around welds will be touched up, and the access system will be removed;
  - The bridge approaches will be surfaced, and the bridge deck will be completed. The bridge will then be opened to foot traffic. Our Lady's Park will remain closed until the completion of landscaping activities;
  - A scaffold system will be introduced to the existing structure, with no anchor points on the elevation of the bridge, and no supports in the river outside of the months August and September. The scaffold will encapsulate the spandrel to prevent pollution entering the water course. Parapet works will be completed to raise the west parapet and the approach walls will be realigned to match;
  - Preferred bridge strengthening works will be completed under sequential lane closures over the existing bridge. Works will be completed concurrently to realign the carriageway. Access requirements for these works will not impact the elevation of the existing bridge, as agreed with IFI during consultation response;
  - Instream works will be carried out in the months of August and September only;
    - The installation of the scaffold system although attached to the existing bridge to enable operatives to connect the underside of the new bridge structure, there will be a requirement for narrow upright supports to be placed in the riverbed to support the scaffold. Thereafter, the scaffold system will have kickboards etc., to ensure that sediment control; and,



- Works to the bank to address scour issues to the northwest bank of the existing bridge will be conducted such that minimal impact to the existing vegetation occurs. Full extent of scour protection to be confirmed in the detailed design stage, however while a soft engineered solution (i.e. planting) is preferred, hard engineering (rock armour) cannot be completely ruled out. In any event, design of any erosion control will be compliant with the guidance produced by IFI. The scour protection would be installed via either via temporary sandbagging parallel to the northern arch to restrict flow or use of silt curtains. There after the temporary sediment control measures will be removed and the river channel (albeit minor inclusion of scour protection) will be returned to pre-construction condition.

### 3.1.2.2 Retaining Walls

40. Retaining walls with a retained height greater than 1.5m are classified as principal structures. There are six required, as detailed in Table 2: All others that are below 1.5 m in height are considered as minor structures and as such are not considered within the parameters of the urbanise setting to impact greatly on biodiversity.

**Table 2: Principal Structures – Retaining Walls**

| Structure Reference | Structure Type                  | Details   | Chainage (m)   | Length (m) | Max Retained Height (m) | Construction Section Reference |
|---------------------|---------------------------------|---|----------------|------------|-------------------------|--------------------------------|
| RW010               | Precast Concrete Retaining Wall | RW010 is located on the west side of R132 Swords Road. Supports car dealership.   | A5550 to A5620 | 70         | 2.5                     | Section 2c                     |
| RW016               | In-situ Concrete Gravity Wall   | RW016 is located on the west side of the R132 Swords Road. It is proposed to set back the residential wall and provide off-street residential parking at this location. | A7220 to A7290 | 70         | 1.5                     | Section 3b                     |
| RW017               | In-situ Concrete Gravity Wall   | RW017 is located on the east side of the R132 Swords Road. The proposed widening at this location encroaches into the front gardens of several residential properties.  | A7255 to A7280 | 25         | 1.5                     | Section 3b                     |

|       |                                 |   |                |    |     |            |
|-------|---------------------------------|---|----------------|----|-----|------------|
| RW018 | In-situ Concrete Gravity Wall   | RW018 is located on the east side of the R132 Swords Road. The proposed widening at this location impacts the front gardens of a row of properties.   | A7315 to A7385 | 70 | 1.5 | Section 3b |
| RW022 | Precast Concrete Retaining Wall | RW022 is located on the west side of R132 Dublin Road north of Cloghran roundabout. The proposed widening at this location encroaches on an existing cutting which supports agricultural land.                                      | A1940 to A1990 | 50 | 2.0 | Section 2a |
| RW29  | Precast Concrete Retainign Wall | RW029 is located on the east side of N1 encroaching into fencing that forms the boundary to Highfield Hospital. Directly behind the wall is an access road for the hospital located approximately 2m to 3m above the highway level. | A8560 to A8640 | 80 | 2.5 | Section 4a |

41. Retaining walls will generally be constructed of a graded slope, reinforced concrete, either precast off site, or cast *in-situ*. They will generally be constructed by first isolating the site of the retaining wall using fencing, as appropriate, to the location. The existing ground will then be stripped to formation level. Existing services will be diverted as required to enable wall construction. A side slope will be battered back to enable construction. Blinding will be installed at formation level. For *in situ* structures, formwork and reinforcing steel for the wall will be fixed in place. Then concrete will be poured in sections and formwork removed



after initial curing of concrete. After a sufficient curing period the area behind the wall will be backfilled. Precast sections will be manufactured off site and lifted on previously prepared ground.

### 3.1.2.3 Building Demolition

42. To accommodate the construction of Proposed Scheme by virtue of proposed land take, the following structures are proposed to be demolished or removed. They are:
  - Collinstown Cross-Part Demolition of Commercial Premises; and
  - Two Semi-Detached Cottages at the Royal College of Surgeons Sports Ground.
43. All demolition work sites will be appropriately hoarded and signposted. Best practice industry standard working methods will be used to minimise the generation of dust, noise and other environmental effects resulting from the demolitions.

### 3.1.3 Surface Water Drainage Infrastructure

44. It is proposed to connect proposed drainage infrastructure into the existing surface water drainage system.
45. The drainage system for the Proposed Scheme will discharge to seven surface watercourses the Ward\_040, Sluice\_010, Mayne\_010, Santry\_010 and Tolka\_060, as well as Ringsend WwTP, before ultimately draining to Dublin Bay. All drainage outfall discharges to surface waters represent point discharges. No new outfalls are proposed. For the Proposed Scheme, there will be a net increase of 21860m<sup>2</sup> (739m<sup>2</sup> in Ward\_040, 264m<sup>2</sup> in Sluice\_010, 4,065m<sup>2</sup> in Mayne\_010, 6,219m<sup>2</sup> in Santry\_010 and 4,340m<sup>2</sup> in Tolka\_060) and 233m<sup>2</sup> in the Liffey Estuary Upper in the impermeable area ultimately discharging to Dublin Bay. The drainage design principles ensure that all runoff from increases in impermeable areas will be attenuated and there will be no net increase in the surface water flow discharged to these receptors.
46. The surface water drainage system is managed by the Local Authority, whilst combined sewer systems are managed by Irish Water. Surface water flows are typically collected in standard gully grates and routed via a gravity network to outfall points. The drainage design of the Proposed Scheme assumes that there are generally no SuDS/attenuation measures on the existing drainage networks to treat or attenuate run-off from the existing carriageway. No new outfalls are proposed. Stormwater from the combined sewer system discharges to the Liffey Estuary via Storm Water Overflows (SWOs). All drainage from the Proposed Scheme will be discharged through existing outfalls. No additional outfalls are proposed.
47. The drainage design aims to sustain flow levels within the existing pipe network after a rainfall event by controlling the discharge rate within each catchment. Flows will be controlled by the implementation of SuDS techniques; where practicable, including the inclusion of: Sealed drainage, grassed surface area water channels and swales at road edges, Filter drains, Tree Pits, attenuation tanks (where there is insufficient volume provided by SuDS measures) and oversized pipes. During the Operational Phase, the overall net increase in impermeable area for the Proposed Scheme will be 19057m<sup>2</sup> which equates to a 3.81% net increase. It is proposed to connect the drainage infrastructure for the Proposed Scheme into existing surface water infrastructure which is assumed to discharge to the following waterbodies: Ward\_040, Gaybrook 010, Sluice\_010, Mayne 010 (including Cuckoo stream), Tolka\_060 and Royal Canal main Line (Liffey and Dubkin Bay).
48. Particular aspects of relevance to this assessment include the existing and proposed drainage and the construction aspects of the Proposed Scheme. The Proposed Scheme is hydrologically connected to Dublin Bay and it is proposed to connect the drainage infrastructure into the existing surface water network. Surface waters from the Proposed Scheme will drain to Dublin Bay via direct pipes and the Santry River. The Proposed Scheme will increase the amount of impermeable surface area through widening of carriageways. Drainage of these newly paved areas will include SuDS measures to treat and attenuate any additional runoff. These measures will ensure that there is no increase in existing runoff rates from newly paved areas and appropriate treatment to ensure runoff quality. SuDS measures proposed for this scheme include, attenuation tanks, Sealed Drains, Grassed Surface Water Channels and swales filter drains and tree

pits and oversized pipes will be installed in suitable locations along the Proposed Scheme (e.g. in the central median and along road verges).

**Table 3: Proposed SuDS and Impermeable Area Changes**

| Existing Catchment Reference | Chaninage                                     | Waterbody         | Approx. Impermeable Surface Area m <sup>2</sup> |            |                   | SuDS Measures Proposed   |
|------------------------------|---|-------------------|---|------------|-------------------|--|
|                              |   |                   | Existing  | Additional | Percentage change |  |
| 01                           | A000-A900                                     | Ward/<br>Gaybrook | 5036  | 1739       | 0.05              | Attenuation tank, new surface water drainage pipes and intercepting existing surface water network |
| 02                           | A900-A2300                                    | Sluice            | 6035  | 771        | 0.13              | Dry detention basin, swale   |
| 03                           | A2300-A4200                                   | Mayne             | 3577  | 225        | 0.09              | Attenuation tank, oversized pipes, new pipe network  |
| 04                           |   | Mayne             | 714   | 1.5        | 0.03              | Attenuation tank, oversized pipes, filter drain, pond  |
| 05                           | A4800 - A7250                                 | Santry            | 6530  | 311        | 0.07              | Oversized pipe, dry detention basin  |
| 06                           | A7250 - A10125<br>B000 - B383                 | Tolka             | 4642  | 302        | 0.01              | Oversized pipe, dry detention basin  |
| 07                           | A10125 - A11769<br>C000 - C450<br>D000 - D374 | Liffey            | 72292   | 3167       | 0.09              | None   |
|                              |   |                   |   |            |                   |  |

### 3.1.4 Lighting

49. The majority of the Proposed Scheme is already artificially lit. During the Construction Phase, temporary lighting will be required at times along the Proposed Scheme at certain locations, as necessary. Where it is necessary to disconnect public lighting during the construction works or to undertake works outside of daylight hours where existing lighting is low, appropriate temporary lighting will be provided. Temporary lighting will also be installed at the Construction Compounds for the duration of the Construction Phase. The standard of temporary lighting installed during the Construction Phase will meet the standard of the existing carriageway and will be appropriate to the speed and volume of traffic during the Construction Phase. Temporary construction lighting will generally be provided by tower mounted floodlights, which will be cowed and angled downwards to minimise spillage of light from the site.
50. A review of the existing lighting provision along the extent of the route has been carried out to understand the impact of the Proposed Scheme on lighting columns and associated infrastructure. Where existing lighting columns conflict with the Proposed Scheme, they will be relocated (typically to the back of

footpaths away from road edge). These include heritage lighting columns, which will be replaced by like for like. The Proposed Design also calls for new lighting in some places and it will be installed in accordance with the requirements of the relevant National Standards and guidances. Light Emitting Diode (LED) lanterns will be the light source for all lighting columns provided. All lighting columns will aim to minimise the effects of obtrusive light at night and reduce visual impact during daylight. Lighting schemes will comply with the 'Guidance notes for the Reduction of Light Pollution' issued by the Institution of Lighting Professionals (ILP 1992).

### 3.1.5 Landscape and Public Realm

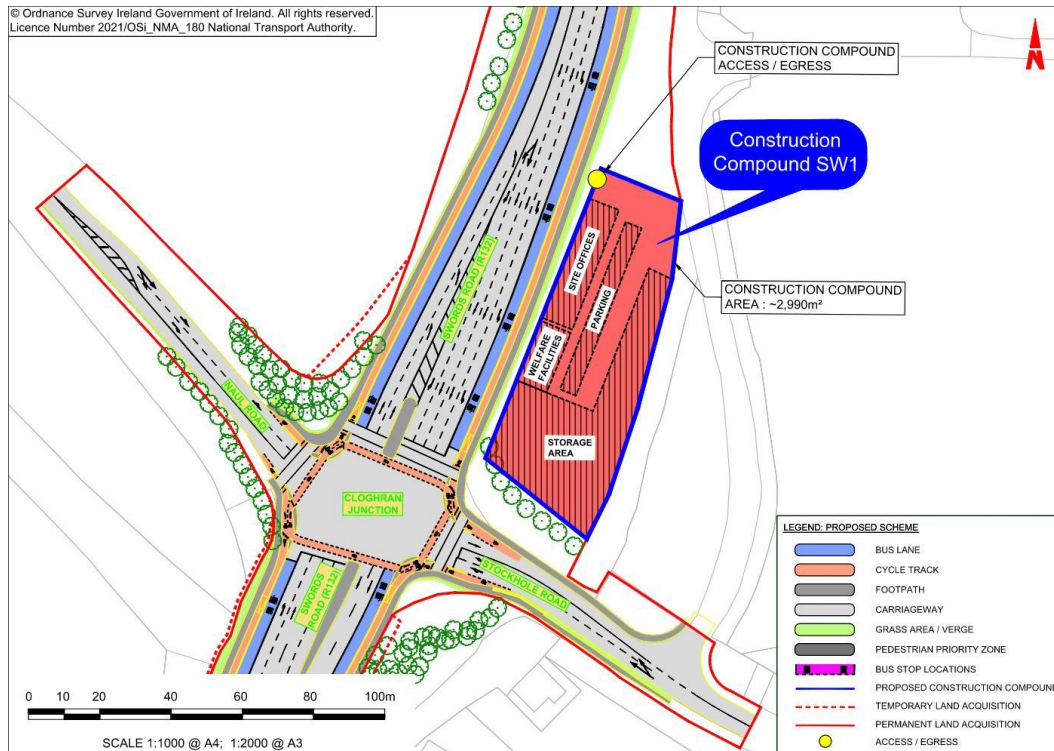
51. The Proposed Scheme includes a planting strategy which includes replacement of street trees and groups of trees that may be impacted by the Proposed Scheme, but also the introduction of new tree planting and street trees within other spaces and along streets and roads.
52. The Proposed Scheme includes three mixed material typologies/palettes that will reinforce existing landscape character, while aiming to better these areas through the use of better-quality surface materials. In addition, specific community enhancement interventions have been proposed which will improve the overall amenity, character and appeal of the route corridor and localities along it, as well as enhancing biodiversity.
53. In respect of landscaping, the design includes for the replanting of trees, hedges, native and ornamental planting, as well as the creation of amenity and species-rich grassland that will provide mitigation for loss of trees in particular, ecological benefits and visual enhancements to the public realm.

### 3.1.6 Construction Compounds

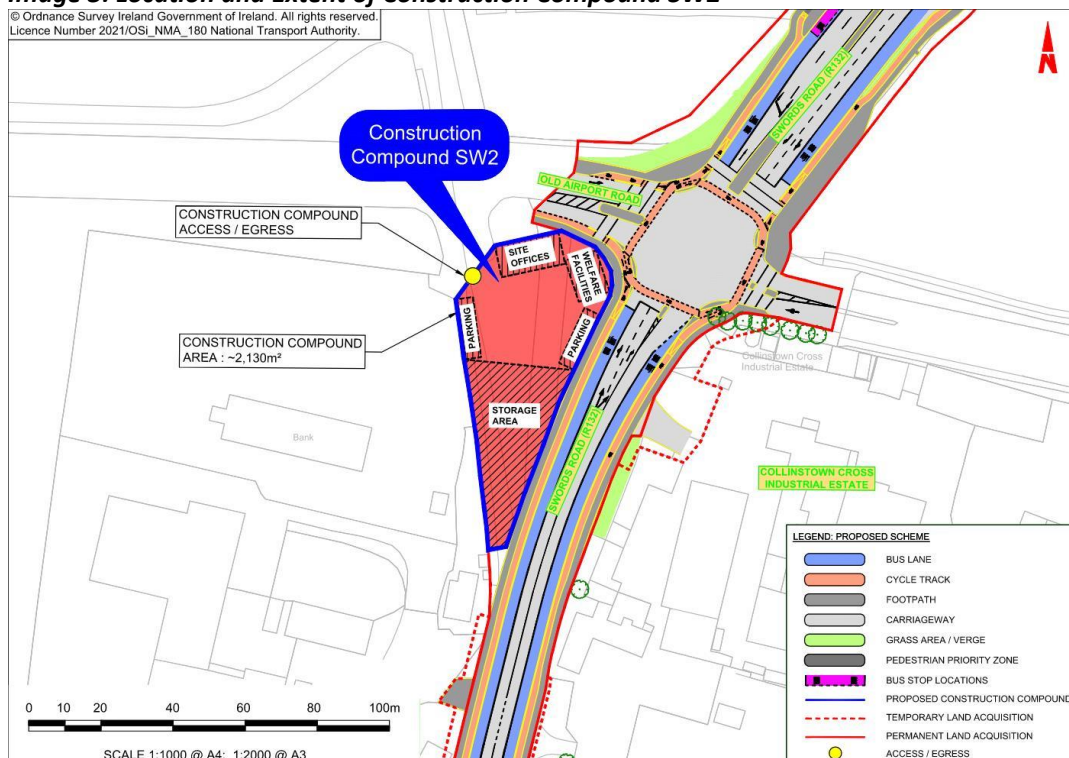
54. The locations of the Construction Compounds in relation to the Proposed Scheme have been selected due to the amount of available space, its location near the majority of the Proposed Scheme major works and its access to the National and Regional Road network. There will be 5 number Construction Compounds for the Proposed Scheme. They will be located in the following locations:
  - Construction Compound SW1 Cloghran Roundabout (See image 2);
  - Construction Compound SW2 Collinstown Cross (See image 3);
  - Construction Compound SW3 Coolock Lane (See image 4);
  - Construction Compound SW4 Collins Avenue in rough ground owned by Dublin City Council (See image 5); and
  - Construction Compound SW5 Drumcondra (Frank Flood) Bridge (See image 6).
55. The locations of the Construction Compounds are shown in Images 2 to 6. These Construction Compounds will contain a site office, and welfare facilities for NTA personnel and contractor personnel. Limited car parking will be allowed at the Construction Compounds. Materials such as topsoil, subsoil, concrete, rock etc., will be stored at the Construction Compounds for reuse as necessary. Items of plant and equipment will also be stored within the Construction Compounds. The Construction Compounds will be in place for the duration of the Construction Phase of the Proposed Scheme, estimated at approximately 36 months. .
56. The Construction Compounds will be engineered appropriate services. Water, wastewater, power, and communications connections will be organised by the appointed contractor. At work areas along the Proposed Scheme, where permanent provisions (for the duration of the construction programme) are not practicable, appropriate temporary provisions will be made including the use of generators if required. Temporary welfare facilities will need to be used, for example, portable toilets in the vicinity of works. Wastewater from temporary welfare facilities will be collected and disposed of to a suitably licenced facility. The Construction Compound will be in place for the duration of the Construction Phase of the Proposed Scheme estimated at approximately 36 months.

57. Following completion of the Construction Phase, the Construction Compounds will be cleared and reinstated to match pre-existing conditions.

**Image 2: Location and Extent of Construction Compound SW1**



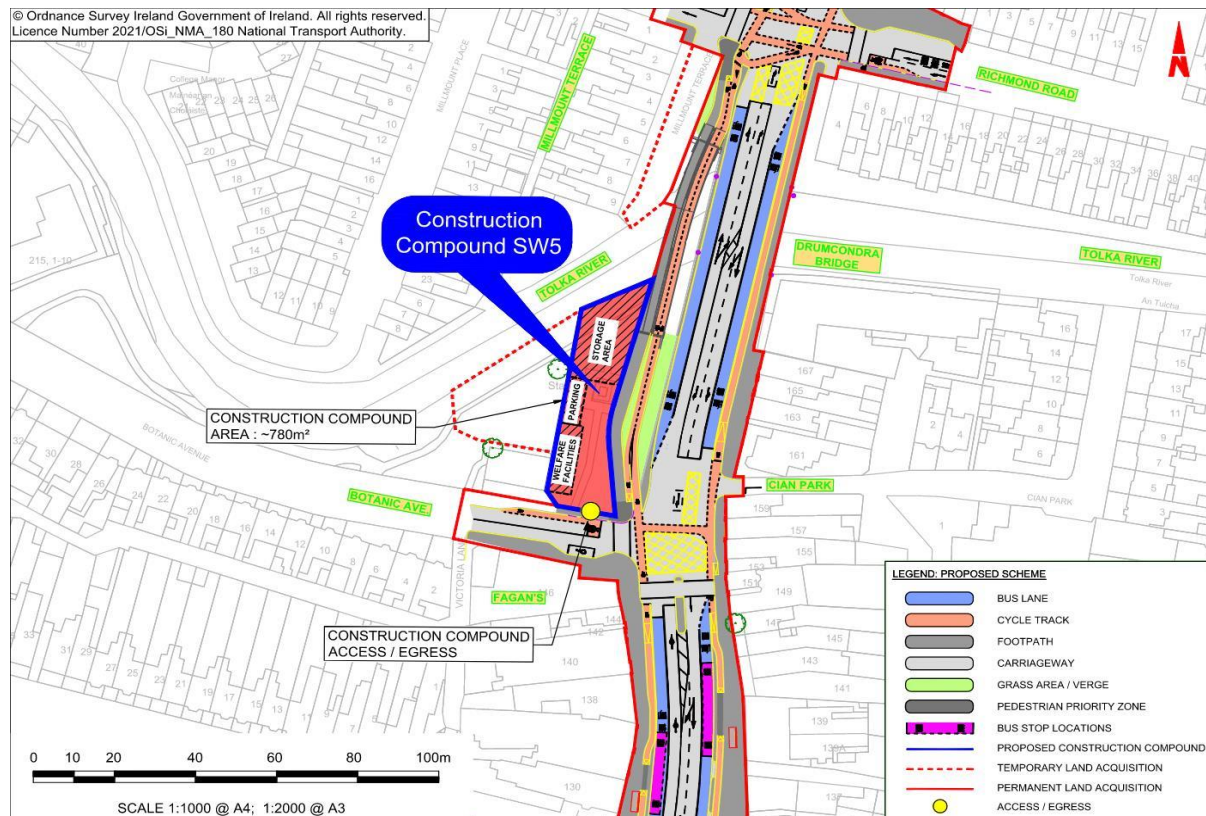
**Image 3: Location and Extent of Construction Compound SW2**







**Image 6: Location and Extent of Construction Compound SW5**



### 3.1.7 Estimated Project Duration

58. The Proposed Scheme is predicted to have a duration of 36 months.

### 3.1.8 Operational Phase

59. The main characteristics of the Operational Phase of the Proposed Scheme that have potential for likely significant effects on European sites and their QI / SCI include:

- The presence and operation (traffic) of the road;
- The presence of additional lighting; and,
- Routine maintenance.

## 3.2 Overview of the Receiving Environment

### 3.2.1 European sites

60. The Proposed Scheme does not overlap with any European site. The nearest European site to the Proposed Scheme is South Dublin Bay and River Tolka SPA which is located approximately 2.3km downstream of the proposed crossing point on the River Tolka. This is followed by North Dublin Bay SAC which is located approximately 5.7km downstream of the proposed crossing point on the River Tolka. North Bull Island SPA is also located in Dublin Bay, approximately 6.6km downstream of the proposed crossing point on the Santry River.

61. There are twenty European sites that are located downstream of waterbodies that are hydrologically connected to the Proposed Scheme i.e. Royal Canal, Tolka River, Santry River, Mayne River, Cuckoo Stream, Sluice River, Gaybrook Stream, Swords Glebe Stream, Liffey Estuary Lower and the Liffey Estuary Upper. These European sites include Malahide Estuary SPA, Malahide Estuary SAC, North Dublin Bay SAC, South

Dublin Bay SAC, South Dublin Bay and River Tolka SPA, North Bull Island SPA, Baldoyle Bay SAC, Baldoyle Bay SPA, Howth Head SAC, Howth Head Coast SPA, Rockabill to Dalkey Island SAC, Ireland's Eye SAC, Ireland's Eye SPA, Rogerstown Estuary SPA, Rockabill SPA, Skerries Islands SPA, Dalkey Islands SPA, Lambay Island SAC, Lambay Island SPA and The Murrough SPA.

62. There are twelve SPAs designated for SCI species that are known to forage and / or roost at inland sites across Dublin City. These are Malahide Estuary SPA, Baldoyle Bay SPA, Rogerstown Estuary SPA, Skerries Islands SPA, North Bull Island SPA, South Dublin Bay and River Tolka SPA, Ireland's Eye SPA, Lambay Island SPA, Howth Head Coast SPA, Dalkey Islands SPA, Rockabill SPA, Wicklow Mountains SPA and The Murrough SPA.
63. In addition, Rockabill to Dalkey Island SAC and Lambay Island SAC are designated for mobile QI species known to utilise the Dublin Bay and the Liffey Estuary Lower.
64. All of the European sites present in the vicinity of the Proposed Scheme are shown on Figure 1 at the end of this report. The QIs / SCIs of the European sites in the vicinity of the Proposed Scheme are provided in Appendix I.

### 3.2.2 Habitats

65. The Proposed Scheme is located in a highly urbanised environment. Habitats present in the footprint of the Proposed Scheme include the following:
  - Arable crops (BC1);
  - Flower beds and borders (BC4);
  - Buildings and artificial surfaces (BL3);
  - Spoil and bare ground (ED2);
  - Recolonising bare ground (ED3);
  - Depositing/ lowland rivers (FW2);
  - Canals (FW3);
  - Drainage ditches (FW4);
  - Improved agricultural grassland (GA1);
  - Amenity Grassland (Improved) (GA2);
  - Dry meadows and grassy verges (GS2);
  - Wet grassland (GS4);
  - Residential;
  - (Mixed) broadleaved woodland (WD1);
  - Mixed broadleaved / conifer woodland (WD2);
  - Scattered trees and parkland (WD5);
  - Hedgerows (WL1);
  - Treelines (WL2);
  - Scrub (WS1);
  - Immature woodland (WS2); and,
  - Ornamental/ non-native shrub (WS3).
66. No Annex I habitats were recorded inside the boundary of the Proposed Scheme. The habitat type tidal rivers (CW2) corresponds with the Annex I habitat Estuaries [1130] and is present downstream of the proposed Frank Flood Bridge crossing where the River Tolka flows into Dublin Bay.

### 3.2.3 Flora and Fauna Species

67. No records of any Annex II plant species were recorded within the footprint of the Proposed Scheme during field surveys, although the Flora Protection Order 2022 species Opposite leaved Pondweed *Groenlandia densa* is known from the Royal Canal.
68. The desk study returned records of a total of seventeen species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 across the wider study area (i.e. Grid

Squares O13 and O14). Records within close proximity to the Proposed Scheme include giant hogweed *Heracleum mantegazzianum* which occurs at numerous locations along River Tolka and the Santry River while Japanese knotweed *Reynoutria japonica* and Himalayan balsam *Impatiens glandulifera* are scattered along the banks of the River Tolka. There are records of giant knotweed *Reynoutria sachalinensis* along the River Liffey. Several records of American Skunk-cabbage *Lysichiton americanus*, Brazilian giant-rhubarb *Gunnera manicata*, New Zealand pigmyweed *Crassula helmsii*, Nuttall's waterweed *Elodea nuttallii*, and water fern *Azolla filiculoides* were recorded within the grounds of the National Botanic Gardens approximately 1km upstream from the Proposed Scheme. Three-cornered garlic *Allium triquetrum* is predominantly distributed along the River Tolka and scattered in the vicinity of the northern terminus of the Proposed Scheme. There are records of Canadian waterweed *Elodea canadensis* along the Santry River and to east and west of the Proposed Scheme. Other records close to the Proposed Scheme include Spanish bluebell *Hyacinthoides hispanica*.

69. There were twelve areas of non-native invasive plant species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 identified along or adjacent to the Proposed Scheme during field surveys. All of these areas of non-native species are present along the River Tolka, in Drumcondra. These locations are summarised in Table 4.



**Table 4: Non-native Invasive Plant Species Listed in the Third Schedule of the Birds and Habitats Regulations 2011 recorded along or adjacent to the Proposed Scheme**

| Reference      | Species  | Location relative to Red Line Boundary | Location   |
|----------------|--|--|--|
| CBC0002IAPS001 | Himalayan balsam <i>Impatiens glandulifera</i>                           | Outside,                               | Upstream of Frank Flood Bridge.                      |
| CBC0002IAPS002 | Himalayan balsam <i>Impatiens glandulifera</i>                           | Outside,                               | Upstream of Frank Flood Bridge                       |
| CBC0002IAPS003 | Himalayan balsam <i>Impatiens glandulifera</i>                           | Outside,                               | Upstream of Frank Flood Bridge                       |
| CBC0002IAPS004 | Giant hogweed <i>Heracleum mantegazzianum</i>                            | Inside                                 | North western side of Frank Flood Bridge             |
| CBC0002IAPS005 | Giant Hogweed <i>Herculaneum mantegazzianum</i> & <i>Himalyan balsam</i> | Outside                                | Downstream of Frank Flood Bridge                     |
| CBC0002IAPS006 | Giant Hogweed <i>Herculaneum mantegazzianum</i>                          | Outside                                | downstream of Frank Flood Bridge                     |
| CBC0002IAPS007 | Giant Hogweed <i>Heracleum mantegazzianum</i> ; <i>glandulifera</i>      | Outside                                | downstream of Frank Flood Bridge.                    |
| CBC0002IAPS008 | Himalayan balsam <i>Impatiens glandulifera</i>                           | Outside                                | downstream of Frank Flood Bridge                     |
| CBC0002IAPS009 | Himalayan balsam <i>Impatiens glandulifera</i>                           | Outside                                | downstream of Frank Flood Bridge                     |
| CBC0002IAPS010 | Himalayan balsam <i>Impatiens glandulifera</i>                           | Outside                                | downstream of Frank Flood Bridge                     |
| CBC0002IAPS011 | Himalayan balsam <i>Impatiens glandulifera</i>                           | Outside                                | downstream of Frank Flood Bridge                     |
| CBC0002IAPS012 | Giant hogweed <i>Heracleum mantegazzianum</i>                            | Outside                                | downstream of Frank Flood Bridge @ Clonliffe College |

### 3.2.3.1 Otter

70. The desk study found that otter are known to occur within 1km of the Proposed Scheme along the Royal Canal, River Liffey, River Tolka, Mayne River and the Ward River<sup>15,16</sup>.
71. No signs of otter *Lutra lutra*, an Annex II species, were recorded during surveys within the footprint of the Proposed Scheme. No signs of otter were recorded within 150m upstream and downstream of the Tolka Bridge along the R132 in Drumcondra. No evidence of otter activity was recorded during the original multidisciplinary surveys, but the aquatic survey (Triturus Environmental Ltd 2020) noted a regular otter

<sup>15</sup> 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.

<sup>16</sup> John Cronin & Associates, Atkins (2009). Historic Road Bridges. Fingal County Council.

spraint site of mixed age mixed. Further surveys to update the biodiversity Baseline at key areas in 2022 recorded a partial print (claw marks only) on wet mud.

72. The nearest European site for which this species is designated is the Wicklow Mountains SAC, which is located approximately 12.6km south of the Proposed Scheme. The SAC is located within a different sub-catchment (Dodder\_SC\_010) to the Proposed Scheme which falls within (Tolka\_SC\_10 and Tolka\_SC\_020). As such, populations of otter within the footprint of the Proposed Scheme are not deemed to be connected to the SAC population.

### 3.2.3.2 Marine mammals

73. The Proposed Scheme crosses four watercourses: Sluice\_010, Maybe 010 (twice), Santry\_010 and the Tolka\_060 and the Royal Canal mainline, and is hydrologically connected to the Ward\_040, Gaybrook\_010, Sluice\_010, Mayne\_010 (2 separate watercourses), Santry\_010, Tolka\_060, Royal Canal Mainline and Liffey Estuary Upper, all of which (with the exception of the Ward\_040 which drains into the Nanny-Delvin Catchment and discharges into the North-western Irish Sea) drain into the Irish Sea Dublin or Dublin Bay.
74. Harbour seal *Phoca vitulina*, grey seal *Halichoerus grypus*, and harbour porpoise *Phocoena phocoena* are known to be present in Dublin Bay. Both seal species are listed on Annex II of the habitats directive and harbour porpoise are listed on Annex IV of the Habitats Directive. The nearest European site for which harbour seal and grey seal have been designated is Lambay Island SAC located approximately 13.1km east from the Proposed Scheme. The nearest European site for which harbour porpoise has been designated is Rockabill to Dalkey Island SAC located approximately 10.0km east from the Proposed Scheme.

### 3.2.3.3 Kingfisher

75. The desk study found that kingfisher *Alcedo atthis*, an Annex I bird species, is known to occur within 1km of the Proposed Scheme and across the wider study area. In particular, a population of kingfisher are reported to be present along the River Tolka in the vicinity of Tolka Valley Park. Records were also returned from Baldoyle Bay and Broadmeadow Estuary, downstream of the Proposed Scheme. A population of kingfisher are also known to be present on the Santry River<sup>17</sup>.
76. Habitat suitability assessments surveys carried out in September 2020 recorded no evidence of any nest holes within 500m upstream or downstream of the proposed crossing point of the River Tolka. The riverbanks were considered to be unsuitable for nesting kingfisher. Three kingfisher were observed along the River Tolka (by sight and sound) during field surveys between 700m and 1.2km downstream of the Proposed Scheme. It is therefore likely that kingfisher forage and roost in the vicinity of the Proposed Scheme.
77. The nearest European site for which this species is designated is River Boyne and River Blackwater SPA, which is located approximately 30km north of the Proposed Scheme. Kingfisher populations within close proximity of the Proposed Scheme are not deemed to be SCI species.

### 3.2.3.4 Other Birds

78. The results of the desk study have informed the assessment of breeding bird species arising from the Proposed Scheme. The desk study returned records of three breeding gull species within 300m of the Proposed Scheme which may use inland amenity grassland feeding sites including black-headed gull *Chroicocephalus ridibundus*, herring gull *Larus argentatus*, lesser black-backed gull *Larus fuscus*.
79. The desk study returned records of a total of 20 wintering bird species across the study area (i.e. O13 and O14). Records included 51 SCI species, including 35 species listed under Annex I of the Birds Directive, and an additional 15 Red Listed and 22 Amber Listed species. This includes 26 species with breeding and wintering populations. The majority of wintering birds identified in the desk study are typically found in

<sup>17</sup> DCC (2015) Dublin City Biodiversity Action Plan 2015-2020.

coastal, estuarine and intertidal habitats including the Liffey Estuary and Dublin Bay. A desk study of lands within 300m of the Proposed Scheme returned records of eight SCI wintering bird species which may use inland amenity grassland and agricultural feeding sites, including light-bellied brent goose, oystercatcher, curlew, black-headed gull, herring gull, lesser black-backed gull, lapwing and golden plover were also returned from the desk study. With the exception of geese, gulls and waders utilising inland feeding sites throughout the winter months, these species are unlikely to utilise lands adjacent to the Proposed Scheme in large numbers.

80. A review of a study into light-bellied Brent goose inland feeding sites<sup>8</sup> has identified no known inland wintering bird feeding sites in the footprint of the Proposed Scheme. There are four known inland wintering bird feeding sites within approximately 300m of the Proposed Scheme i.e. the disturbance Zol. The known inland wintering feeding sites, along with their relative level of importance<sup>18</sup> to the brent goose population (as assessed in 2017) and distances from the Proposed Scheme are as follows:

- Whitehall/ Pairc Imearta (High Importance) adjacent with the Proposed Scheme;
- Drumcondra/Holy Cross College (High Importance) approximately 30m from the Proposed Scheme<sup>19</sup>;
- All Hallows, DCU Campus (Unknown Importance) approximately 160m from the Proposed Scheme; and,
- Drumcondra/St. Patrick's College (High Importance) approximately 190m from the Proposed Scheme.

81. A number of SPAs have on a precautionary basis been included for assessment, as it cannot with certainty be confirmed that their Special Conservation Interest species do not use areas in the vicinity of the Proposed Scheme as ex-situ habitat.

### 3.2.3.5 Hydrology

82. The Proposed Scheme crosses four watercourses: Sluice\_010, Maybe 010 (twice), Santry\_010 and the Tolka\_060 and the Royal Canal mainline, and is hydrologically connected to the Ward\_040, Gaybrook\_010, Sluice\_010, Mayne\_010 (2 separate watercourses), Santry\_010, Tolka\_060, Royal Canal Mainline and Liffey Estuary Upper, all of which (with the exception of the Ward\_040 which drains into the Nanny-Delvin Catchment and discharges into the North-western Irish Sea) drain into the Irish Sea Dublin or Dublin Bay.

83. The proposed drainage system for the Proposed Scheme will discharge to eight surface watercourses the Ward\_040, Gaybrook\_010, Sluice\_010, Mayne\_010, Santry\_010 and Tolka\_060, as well as Ringsend WwTP, before ultimately draining to Dublin Bay. All drainage outfall discharges to surface waters represent point discharges. No new outfalls are proposed. For the Proposed Scheme, there will be a net increase of 25,799m<sup>2</sup> (5,120m<sup>2</sup> in Ward\_040, 70m<sup>2</sup> in Gaybrook\_010, 9,521m<sup>2</sup> in Sluice\_010, 3,768m<sup>2</sup> in Mayne\_010, 517m<sup>2</sup> in Mayne\_010, 3,636m<sup>2</sup> in Santry\_010 and 3,167m<sup>2</sup> in Tolka\_060) in the impermeable area ultimately discharging to Dublin Bay. The drainage design principles ensure that all runoff from increases in impermeable areas will be attenuated and there will be no net increase in the surface water flow discharged to these receptors.

<sup>18</sup> Major importance site 401+ geese; high importance site 51-400 geese; and, moderate importance site 1-50 geese as defined by Benson's study in 2009.

Benson (2009) Use of Inland Feeding Sites by Light-bellied Brent Geese in Dublin 2008-2009: A New Conservation Concern? Irish Birds 8: 563-570.

<sup>19</sup> This site was formerly comprised of amenity grassland habitat. The field surveys for the Proposed Scheme recorded rough grassland in this area in 2020 and it is currently not considered to be a suitable inland feeding site for light-bellied brent goose.

84. Details on the water quality of each watercourse, as sourced from the Environmental Protection Agency (EPA), and the distances from the proposed crossing point to downstream waterbodies are also provided in Table 5.

**Table 5: Water Quality of Watercourses / Waterbodies in the Vicinity of the Proposed Scheme**

| Watercourse              | Location in relation to the Proposed Scheme  | EPA Q-Values (Monitoring Station) and Water Framework Directive Water Quality Status / Risk Score                       | Name of and Distance to Downstream Waterbodies along with their associated Water Quality  |
|--------------------------|--|---|---|
| River Tolka (Tolka_60)   | One existing crossing point of the River Tolka: on Drumcondra Road Lower R135 at Our Lady's Park | Q2-3 (Drumcondra Road Bridge)<br><br>Poor<br>'At risk'  | It flows for approximately 600m, from the crossing point at Drumcondra Road Lower, until it reaches Dublin Bay (Tolka Estuary transitional waterbody, classified as "Potentially Eutrophic"), which ultimately drains to Dublin Bay coastal waterbody (classified as "Unpolluted").         |
| Santry River (Santry_10) | One existing crossing point at Swords Road R132 adjacent to Santry Demesne                       | Q2-3 (Clonsaugh Road Bridge)<br><br>Poor<br>'At risk'   | It flows for approximately 6.5km from the crossing point at Swords Road, until it reaches Dublin Bay (North Bull Island transitional waterbody, classified as "Potentially Eutrophic") near Watermill Road, which ultimately drains to Dublin Bay (classified as "Unpolluted").             |
| Mayne River (Mayne_10)   | One existing crossing point at Swords Road R132 close to the M50                                 | Q2-3 (Hole in the Wall Road Bridge)<br><br>Poor<br>'At risk'  | It flows for approximately 7.2km from the crossing point at Swords Road, to Baldoyle Bay (Mayne Estuary transitional waterbody, classified as "Eutrophic") at the Coast Road, which ultimately drains to the Irish Sea Dublin coastal waterbody (classified as "Unpolluted").               |
| Cuckoo Stream (Mayne_10) | One existing crossing point at Swords Road R132  | Q2-3 (Hole in the Wall Road Bridge)<br><br>Poor<br>'At risk'<br><br>The Cuckoo Stream is a tributary of the Mayne River | It flows for approximately 7.2km from the crossing point at Swords Road, until it reaches Baldoyle Bay (Mayne Estuary transitional waterbody, classified as "Eutrophic") at the Coast Road, which ultimately drains to the Irish Sea Dublin coastal waterbody (classified as "Unpolluted"). |
| Sluice River (Sluice_10) | One existing crossing point at Swords Road R132 near the Metropoint Business Park                | No water quality data available<br><br>Water Quality Status 'Unassigned'<br>WFD Risk Score 'Review'                     | It flows for approximately 7.5km from the crossing point at Swords Road, until it reaches Baldoyle Bay (Mayne Estuary transitional waterbody, classified as "Eutrophic") at the Coast Road, which ultimately drains to the Irish Sea Dublin coastal waterbody (classified as "Unpolluted"). |
| Gaybrook Stream          | Located approximately  | No water quality data available   | It flows for approximately 4km from the nearest point to the Proposed Scheme,   |

| Watercourse                               | Location in relation to the Proposed Scheme  | EPA Q-Values (Monitoring Station) and Water Framework Directive Water Quality Status / Risk Score              | Name of and Distance to Downstream Waterbodies along with their associated Water Quality  |
|---|--|--|---|
| (Gaybrook_10)                             | 200m east of the Proposed Scheme at the Dublin Road R836   | Water Quality Status 'Unassigned'<br>WFD Risk Score 'Review'   | until it drains in the Malahide Estuary (the Broadmeadow transitional waterbody, classified as "Eutrophic") near Old Yellow Walls Road, which ultimately flows into the Irish Sea coastal waterbody (classified as "Unpolluted").   |
| Swords Glebe Stream/ Ward River (Ward_40) | Located approximately 200m northwest of the Proposed Scheme at Pinnockhill                                   | Q3 (Well Road Bridge)<br><br>Poor<br>'At risk'<br><br>The Swords Glebe Stream is a tributary of the Ward River | It flows for approximately 500m from the nearest point to the Proposed Scheme until it reaches the Ward River which flows approximately 2km, until it drains into the Malahide Estuary (the Broadmeadow transitional waterbody, classified as "Eutrophic") near Lissenhall, which ultimately flows into the Irish Sea coastal waterbody (classified as "Unpolluted"). |
| Royal Canal                               | One existing crossing point at Binns Bridge at the junction of Dorset Street Lower and Drumcondra Road Lower | Not applicable   | It flows for approximately 2.3km, from the proposed crossing point, until it reaches the Liffey Estuary Lower transitional waterbody (classified as "Unpolluted") at North Wall Quay, which ultimately drains to Dublin Bay coastal waterbody (classified as "Unpolluted").   |
| Liffey Estuary Upper                      | Located approximately 560m south of the Proposed Scheme terminus at Ormond Quay                              | Not applicable<br>'At risk'  | It flows for approximately 760m before flowing into the Liffey Estuary Lower (as detailed below).   |
| Liffey Estuary Lower                      | Located approximately 550m south of the Proposed Scheme terminus at Bachelor's Walk                          | Not applicable<br>'At risk'  | It flows for approximately 600m until it drains to Dublin Bay coastal waterbody (classified as "Unpolluted").   |

### 3.2.4 Hydrogeology

85. The Geological Survey of Ireland (GSI) 1:500,000 data indicates that the bedrock formation in the Proposed Scheme is *"Dark-grey argillaceous & cherty limestone and shale (Calp)"* in the southern section of the Proposed Scheme (south of the East Link Road), *"Argillaceous dark-grey bioclastic limestone, subsidiary shale"* in the northern section of the Proposed Scheme (north of the National Show Centre) and *"Pale-grey massive limestone"* in a small section in the Cloghran area.

86. The Proposed Scheme transverses two groundwater bodies, each of which has an industrial facility located within it. Environmental data sourced from the EPA for these groundwater bodies are presented below:

#### Dublin Ground Waterbody

- For the majority of this area, it is considered to be of “Good” Groundwater Body WFD Status (2013-2018) and the WFD risk status is currently under review however at lands in the vicinity of Dublin Airport (i.e. at Industrial Facility P0480-02) it is classified as being of “Poor” status and “at risk”; and
- The aquifers located within this groundwater body and where the Proposed Scheme transverses are classified as “locally important aquifer - moderately productive only in local zones” and “poor aquifer – bedrock which is generally unproductive except for local zones”.

#### Swords Ground Waterbody

- In the vicinity of the Proposed Scheme, it is considered to be of “Good” Groundwater Body Water Framework Directive (2000/60/EC) (WFD) Status (2010-2015) and “not at risk” of failing the WFD groundwater quality objectives; and
- The aquifers located within this groundwater body and where the proposed Project transverses are classified as “locally important aquifer - moderately productive only in local zones”.

87. The vulnerability of the Swords and Dublin groundwater bodies to human activities ranges from “Extreme”, “High”, “Moderate” to “Low” within the footprint of the Proposed Scheme.

### 3.2.5 Soils & Geology

88. The 1:100.00 GSI Bedrock geology map<sup>20</sup> of the area indicates that the underlying bedrock along the Proposed Scheme is predominantly underlain by Carboniferous Limestones. The majority of the Dublin City area was a deep marine basin known as the Dublin Basin where these sedimentary rocks were deposited. The GSI Quaternary subsoils map shows the footprint of the Proposed Scheme is underlain by glacial tills with additional areas of made ground (Urban), alluvial deposits, gravels and shallow bedrock.

### 3.2.6 Air Quality

89. As part of the implementation of S.I. No. 271/2002 - Air Quality Standards Regulations 2002, four air quality zones have been defined in Ireland for air quality management and assessment purposes (EPA 2020a). Dublin is defined as Zone A. With regard to NO<sub>2</sub>, continuous monitoring data from the EPA at locations in close proximity to the Proposed Scheme was reviewed. The stations reviewed included Swords, Ballyfermot, Rathmines, Coleraine Street and Winetavern Street. Sufficient data is available for the stations in Swords, Ballyfermot, Rathmines, Coleraine Street and Winetavern Street to review long-term trends over a five-year period (2015 to 2019) (See Table 6).

**Table 6: Trends in Suburban and Urban NO<sub>2</sub> Concentration (µg/m<sup>3</sup>) In Dublin 2015 to 2019**

| Station           | Station Classification<br>Council Directive<br>96/62/EC | Averaging Period   | Year |      |      |      |      | Limit Value |
|-------------------|---|--|------|------|------|------|------|-------------|
|                   |   |  | 2015 | 2016 | 2017 | 2018 | 2019 |             |
| Winetavern Street | Urban Traffic   | Annual Mean NO <sub>2</sub> (µg/m <sup>3</sup> )                 | 31   | 37   | 27   | 29   | 28   | 40          |
|                   |   | 99.8 <sup>th</sup> ile 1-hr NO <sub>2</sub> (µg/m <sup>3</sup> ) | 128  | 120  | 110  | 115  | 115  | 200         |

<sup>20</sup> Accessible at <https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228>

| Station       | Station Classification<br>Council Directive 96/62/EC | Averaging Period   | Year |      |      |      |      | Limit Value |
|---------------|--|--|------|------|------|------|------|-------------|
|               |  |  | 2015 | 2016 | 2017 | 2018 | 2019 |             |
| Rathmines     | Urban Background                                     | Annual Mean NO <sub>2</sub> (µg/m <sup>3</sup> )                 | 18   | 20   | 17   | 20   | 22   | 40          |
|               |  | 99.8 <sup>th</sup> ile 1-hr NO <sub>2</sub> (µg/m <sup>3</sup> ) | 105  | 88   | 86   | 87   | 95   | 200         |
| Ballyfermot   | Suburban Background                                  | Annual Mean NO <sub>2</sub> (µg/m <sup>3</sup> )                 | 16   | 17   | 17   | 17   | 20   | 40          |
|               |  | 99.8 <sup>th</sup> ile 1-hr NO <sub>2</sub> (µg/m <sup>3</sup> ) | 127  | 90   | 112  | 101  | 101  | 200         |
| Dun Laoghaire | Suburban Background                                  | Annual Mean NO <sub>2</sub> (µg/m <sup>3</sup> )                 | 16   | 19   | 17   | 19   | 15   | 40          |
|               |  | 99.8 <sup>th</sup> ile 1-hr NO <sub>2</sub> (µg/m <sup>3</sup> ) | 91   | 105  | 101  | 91   | 84   | 200         |
| Swords        | Suburban Background                                  | Annual Mean NO <sub>2</sub> (µg/m <sup>3</sup> )                 | 13   | 16   | 14   | 16   | 15   | 40          |
|               |  | 99.8 <sup>th</sup> ile 1-hr NO <sub>2</sub> (µg/m <sup>3</sup> ) | 93   | 96   | 79   | 85   | 80   | 200         |

90. Continuous PM<sub>10</sub> monitoring carried out at the suburban locations of Winetavern Street (which is south of the Proposed Scheme), Rathmines, Phoenix Park and Ballyfermot. The annual average level in 2019 was 15µg/m<sup>3</sup>, with nine exceedances of the 24-hour limit value of 50µg/m<sup>3</sup>. The City Centre monitoring location of Winetavern Street has a long-term average (2015 to 2019) of 14µg/m<sup>3</sup> with an annual average in 2019 of 15µg/m<sup>3</sup>.
91. Continuous PM<sub>2.5</sub> monitoring carried out at the Zone A locations of Ballyfermot, Phoenix Park, Finglas, Rathmines, St Anne's Park and Marino showed levels ranging between 8µg/m<sup>3</sup> - 10µg/m<sup>3</sup> in 2019. The annual average concentration measured in Marino was 9µg/m<sup>3</sup> in 2019, with the average concentrations of 6µg/m<sup>3</sup> to 9µg/m<sup>3</sup> over the period 2015 to 2019 compared to the annual limit value of 25µg/m<sup>3</sup>. Marino monitors both PM<sub>10</sub> and PM<sub>2.5</sub> allowing a ratio of PM<sub>10</sub> to PM<sub>2.5</sub> to be calculated. The average PM<sub>2.5</sub>/PM<sub>10</sub> ratio in Marino was 0.64 in 2019.

### 3.3 Assessment of Effects on European Sites

92. This section identifies all the potential impacts associated with the Proposed Scheme, examines whether there are any European sites within the ZoI of effects from the Proposed Scheme, and assesses whether there is any risk of the Proposed Scheme resulting in a significant effect on any European site, either alone or in combination with other plans or projects.
93. In assessing the potential for the Proposed Scheme to result in a significant effect on any European sites, any measures intended to avoid or reduce the harmful effects of the project on European sites (i.e. mitigation measures) are not taken into account as part of this Stage One Screening appraisal.
94. Considering the baseline ecological environment and the extent and characteristics of the Proposed Scheme the following potential impacts have been identified:
- Habitat loss and fragmentation;
  - Habitat degradation / effects on QI / SCI species as a result of hydrological impacts;
  - Habitat degradation as a result of hydrogeological impacts;
  - Habitat degradation as a result of introducing / spreading non-native invasive species;



- Habitat degradation as a result of air quality impacts; and,
- Disturbance and displacement impacts.

### 3.3.1 Habitat loss and fragmentation

95. The Proposed Scheme does not overlap with any European sites and the nearest European Site to the Proposed Scheme is South Dublin Bay and River Tolka SPA which is located approximately 1.9km downstream of the proposed crossing point on the River Tolka.
96. Special Conservation Interest (SCI) species for which SPAs in the vicinity of the Proposed Scheme have been designated are known to utilise *ex-situ* feeding sites in the Dublin area (i.e. Malahide Estuary SPA, Baldoyle Bay SPA, North Bull Island SPA, South Dublin Bay and River Tolka SPA and Rogerstown Estuary SPA, Skerries Islands SPA, Ireland's Eye SPA, Lambay Island SPA and The Murrough SPA). The Proposed Scheme will not result in the loss of sites suitable to support breeding gull and wintering bird species. Therefore, there is no potential for impacts on SCI species associated with SPAs to occur as a result of habitat loss / fragmentation.

### 3.3.2 Habitat degradation / effects on QI / SCI species as a result of hydrological impacts

97. The Proposed Scheme is hydrologically connected to Dublin Bay via Malahide Estuary, Baldoyle Bay and Dublin Bay via eight watercourses, as well as Ringsend WwTP, before ultimately draining to Dublin Bay. The potential release of contaminated surface water runoff and / or an accidental spillage or pollution event into any surface water features during construction, or operation, has the potential to affect water quality in the receiving aquatic environment. Such a pollution event may include: the release of sediment into receiving waters and the subsequent increase in mobilised suspended solids; and the accidental spillage and / or leaks of contaminants into receiving waters. It should be noted that a highly substantial event or events would be required to generate such quantities, which is considered unlikely.
98. The associated effects of a reduction of surface water quality could potentially extend for a considerable distance downstream of the location of the accidental pollution event or the discharge point and therefore impact the downstream environment, i.e., in Dublin Bay, Irish Sea Dublin and North western Irish sea and, including the following European sites: North Dublin Bay SAC, South Dublin Bay SAC, Baldoyle bay SAC, Malahide Estuary SAC, Lambay Island SAC, Skerries Island SAC, Howth Head Coast SPA, Rockabill to Dalkey Island SAC, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA and Dalkey Islands SPA, Baldoyle Bay SPA, Malahide Estuary SPA, Rogerstown Estuary SPA. This reduction in water quality (either alone or in combination with other pressures on water quality) could result in the degradation of sensitive habitats present within these European sites, which in turn would negatively affect the SCI bird species that rely upon these habitats as foraging and / or roosting habitat. It could also negatively affect the quantity and quality of prey available to SCI bird species. These impacts could potentially occur to such a degree that the conservation objectives of the North Dublin Bay SAC, South Dublin Bay SAC, Howth Head SAC, Howth Head Coast SPA, Rockabill to Dalkey Island SAC, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA and Dalkey Islands SPA and further afield may be undermined.
99. Such a potential pollution event may include: the release of sediment into receiving waters and the subsequent increase in mobilised suspended solids; and the accidental spillage and / or leaks of contaminants into receiving waters. For example, oil (which is to be drained from ESB cables) disperses in a very thin layer across water and a small amount can cover a large area. Should an oil spill occur, an assumed oil slick depth of approximately 5mm has been used to determine the likelihood of it reaching the estuary. In order for a 5mm slick to cover the river all the way to the estuary, which is 600m downstream of the bridge works, a minimum of 40 litres of oil would need to be spilled into the river.
100. The associated effects of a reduction of surface water quality could potentially extend for a considerable distance downstream of the location of the accidental pollution event or the discharge point and therefore impact downstream waterbodies, i.e., Dublin Bay, within which European sites are located: North Dublin Bay SAC, South Dublin Bay SAC, Howth Head SAC, Rockabill to Dalkey Island SAC, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA and Dalkey Islands SPA. This reduction in water quality (either



alone or in combination with other pressures on water quality) could result in the degradation of sensitive habitats present within these European sites, which in turn would negatively affect the SCI bird species that rely upon these habitats as foraging and / or roosting habitat. It could also negatively affect the quantity and quality of prey available to SCI bird species. Such an occurrence, of a sufficient magnitude, either alone or in combination with other pressures on water quality, could undermine the conservation objectives of the North Dublin Bay SAC, South Dublin Bay SAC, Howth Head SAC, Rockabill to Dalkey Island SAC, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA and Dalkey Islands SPA are undermined.

101. In a worst-case scenario, in the absence of mitigation measures, the release of contaminated surface water runoff and / or an accidental spillage or pollution event into any surface water features during the Construction or Operational Phase also has the potential to affect mobile SCI bird species and QI mammal species that commute, forage and loaf in Dublin Bay i.e., birds associated with Skerries Islands SPA, Rockabill SPA, Lambay Island SPA, Ireland's Eye SPA, North Dublin Bay SPA, South Dublin Bay and River Tolka Estuary SPA, Malahide Estuary SPA, Baldoyle Bay SPA, Rogerstown Estuary SPA, Dalkey Islands SPA, The Murrough SPA and, marine mammals associated with Rockabill to Dalkey Island SAC and Lambay Island SAC. This potential reduction in water quality (either alone or in combination with other pressures on water quality) could result in the degradation of sensitive habitats present within downstream European sites, which in turn would negatively affect the SCI bird species that rely upon these habitats as foraging and/or roosting habitat. It could also negatively affect the quantity and quality of prey available to SCI and QI populations.
102. As the Proposed Scheme has the potential to result in habitat degradation and effects on of the Qualifying / Special Conservation Interest species of European sites as the result of hydrological impacts, there is the potential for in combination effects to occur.

### 3.3.3 *Habitat degradation as a result of hydrogeological impacts*

103. Groundwater levels in groundwater dependant habitats may be impacted by the removal of a proportion of an aquifer or dewatering activities associated with excavations which can lead to a temporary change in groundwater levels and flow within the aquifer. Likewise, the mobilisation of contaminants into the aquifer either through accidental spillage or disturbance of contaminated ground during excavation may reduce the quality of the groundwater within the aquifer, also resulting in the degradation of groundwater dependent terrestrial ecosystem and any species that they may support.
104. The underlying aquifers are either Locally Important Bedrock Aquifer, Moderately Productive only in Local Zones or Poor Bedrock Aquifer, Moderately Productive only in Local Zones. These types of aquifers are associated with low permeability which decreases with depth. An upper shallow zone of higher permeability may exist in the top few meters and is associated with relatively short flow paths. Therefore, any influence on the groundwater as a result of the Proposed Scheme will be localised and will not extend to any groundwater dependant habitats which are all located over 400m from any proposed work. The unmitigated hydrogeological Zol of the Proposed Scheme is not considered to extend to any groundwater dependent terrestrial ecosystems linked to European sites. This Zol is determined by the professional judgement of the hydrogeology specialists.
105. In summary therefore, the Proposed Scheme does not have the potential to result in habitat degradation of the Qualifying / Special Conservation Interest species of any European site as the result of hydrogeological impacts.

### 3.3.4 *Habitat degradation as a result of introducing / spreading non-native invasive species*

106. There were twelve areas of non-native invasive plant species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 identified along or adjacent to the Proposed Scheme. The desktop study returned records of sixteen species listed on the Third Schedule of the Birds and Natural Habitats) Regulations, in the vicinity of the Proposed Scheme. Therefore, there is potential for invasive species to spread or be introduced, during construction and / or routine maintenance / management works, to terrestrial habitat areas in European sites downstream in Dublin Bay via

watercourses (i.e. North Dublin Bay SAC, South Dublin Bay SAC, North Bull Island SPA and South Dublin Bay and River Tolka Estuary SPA). The Proposed Scheme is also hydrologically connected to Malahide Estuary and Baldoyle Bay via several watercourses, and within close proximity of these sites. The introduction and / or spread of these invasive species to downstream European sites could potentially result in the degradation of existing habitats present, in particular coastal habitats not permanently or regularly inundated by seawater. These species may outcompete other native species present, negatively impacting the species composition, diversity and abundance and the physical structural integrity of the habitat. This in turn could undermine the conservation objectives of these European sites.

107. It is not considered likely that invasive species could spread to European sites which are located a significant distance from the outfall locations and or separated by a large marine waterbody (i.e. Howth Head SAC, Howth Head Coast SPA, Rockabill to Dalkey Island SAC, Ireland's Eye SAC, Ireland's Eye SPA, Lambay Island SAC, Lambay Island SPA, Rockabill SPA, Rogerstown SPA, The Murrough SPA, Skerries Islands SPA and Dalkey Islands SPA). As the Proposed Scheme has the potential to result in habitat degradation of the Qualifying / Special Conservation Interest species of European sites as the result of the spread of invasive species, there is the potential for in combination effects to occur in association with the following activities / plans / projects.

### 3.3.5 *Habitat degradation as a result of air quality impacts*

108. A reduction in air quality within the immediate vicinity of the construction works may occur as a consequence of dust deposition associated with these Construction Phase activities. This includes reduction in photosynthesis due to smothering from dust on the plants and chemical changes such as acidity to soils. Furthermore, emission from car exhausts, and the deposition of particulate matter and heavy metals produced by engine, brake and tyre wear, can contribute to increased deposition of pollutants such as oxides of nitrogen (NO<sub>x</sub>, NO<sub>s</sub>), volatile organic compounds (VOCs), particulate matter (PM), heavy metals (HM) and ammonia (NH<sub>4</sub>) in the vicinity of a road carriageway. This can affect the ecosystems and vegetation present, influencing plant growth rates and species composition, diversity, and abundance.
109. The unmitigated Zol for air quality effects arising from the Proposed Scheme has the potential to extend 50m from the Proposed Scheme boundary, and 500m from Construction Compounds during the Construction Phase, and up to 200m the Proposed Scheme boundary during the Operational Phase. There are no European sites present within these distances.
110. As the Proposed Scheme does not have the potential to result in habitat degradation of the Qualifying / Special Conservation Interest species of any European site as the result of air quality impacts, either during the construction phase or the operational phase, there is no potential for in combination effects to occur in that regard.

### 3.3.6 *Disturbance and displacement impacts*

111. A temporary and / or permanent increase in noise, vibration and / or human activity levels during the Construction Phase of the Proposed Scheme could result in the disturbance to and / or displacement of fauna species present within the vicinity of the Proposed Scheme. For mammal species such as otter, disturbance effects would not be expected to extend beyond 150m<sup>21</sup>. For wintering birds, disturbance effects would not be expected to extend beyond a distance of approximately 300m<sup>22</sup>, as noise levels

<sup>21</sup> This is consistent with Transport Infrastructure Ireland (TII) guidance (Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes and Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes) documents. This is a precautionary distance, and likely to be moderated by the screening effect provided by surrounding vegetation and buildings, with the actual Zol of construction related disturbance likely to be much less in reality.

<sup>22</sup> Current understanding of construction related noise disturbance to wintering waterbirds is based on the research presented in Cutts *et al.* (2009) and Wright *et al.* (2010). In terms of construction noise, levels below 50dB would not be expected to result in any response from foraging or roosting birds. Noise levels between 50dB and 70dB would provoke a moderate effect/level of response from birds, i.e. birds becoming alert and some behavioural changes (e.g. reduced feeding activity), but birds would be expected to habituate to noise levels

associated with general construction activities would attenuate to close to background levels at that distance. There are no European sites within the disturbance Zol of the Proposed Scheme.

112. Although no signs of otter were initially recorded during field surveys of the Proposed Scheme, later evidence noted otter activity on the upstream and downstream side of the Frank Flood Bridge along the River Tolka. Furthermore, the Royal Canal, River Liffey, River Tolka, Mayne River and the Ward River are known to support otter, an Annex II and IV mammal species. The nearest SAC to the proposed development site for which otter has been designated is Wicklow Mountains SAC; located approximately 12.8km south. Research carried out by Ó Néill *et al.* (2008) on ranging behaviours of otter on river systems in Ireland found that female otter ranges averaged 7.5km while male otter home ranges varied between 21km. While the Proposed Scheme is within the potential home range of male otter, the Proposed Scheme is located in a different sub-catchment to the Wicklow Mountains SAC, therefore it is not considered likely that the otter present in the vicinity of the Proposed Scheme are associated with the QI populations of any European site. Although marine mammals associated with European sites may commute and forage within the Liffey Estuary, and the coastal zone running northwards it is considered unlikely that there will be any impacts on these species as a result of the Proposed Scheme whose southern boundary (city Centre) is upstream of Dublin Bay, in a highly urbanised environment. Elsewhere the Proposed Scheme does not intersect any coastal waters. This is because of the terrestrial nature of the Proposed Scheme along urbanised transport corridor. In addition to this, the scale of works proposed in the vicinity of the Liffey Estuary and downstream area in the wider Dublin Bay which are considered to be minor.
113. Populations of kingfisher are known to be present in the vicinity of the Proposed Scheme, along the River Tolka and the River Santry. Any kingfisher populations which are present in the vicinity of the Proposed Scheme are not considered to be associated with the SCI populations of any European site. Kingfisher territories can extend over approximately 3-5km of a river catchment<sup>23</sup>. The nearest SPA for which kingfisher has been designated is the River Boyne and Blackwater SPA which is located in a separate catchment approximately 30km away, therefore kingfisher present in the vicinity of the Proposed Scheme are not associated with an SPA population.
114. There are a number of SPAs located in relatively close proximity to the Proposed Scheme which are designated for SCI species that are known to forage and / or roost at inland sites, such as amenity grassland playing pitches (i.e. Malahide Estuary SPA, Baldoyle Bay SPA, North Bull Island SPA, South Dublin Bay and River Tolka SPA, Rogerstown Estuary SPA, Skerries Islands SPA, Ireland's Eye SPA and Lambay Island SPA). These species include light-bellied Brent goose, curlew, oystercatcher, black-tailed godwit, black-headed gull, herring gull and lesser black-backed gull. Suitable inland foraging / roosting sites, which these bird species utilise, are located within the potential Zol of the Proposed Scheme (See Section 3.2.3). Although the Proposed Scheme will not result in the loss of any *ex-situ* foraging site, the Proposed Scheme runs alongside the Whitehall on the Santry road is immediately adjacent to the Proposed Scheme while Drumcondra /Holy Cross College, All Hallows DCU Campus, and Drumcondra St Patricks College are respectively 30, 160 and 190m from the Proposed Scheme. Although these sites will not be directly impacts and are located adjacent to urban areas alongside long established transport corridors or are of relatively high human presence, there is nonetheless potential from construction related activities of significant magnitude. In respect of the Proposed Scheme Construction and Operational Phases, the works associated with the Frank Flood Bridge, although separated by the bridge itself and buildings are within the ZOI of Drumcondra /Holy Cross College *ex-situ* wintering bird site.
115. In summary therefore, there is potential for the Proposed Scheme to result in the disturbance / displacement of SCI bird species associated with SPA populations.

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within this range. Noise levels above 70dB would likely result in birds moving out of the affected zone, or leaving the site altogether. At approximately 300m, typical noise levels associated with construction activity (BS 5228) are generally below 60dB or, in most cases, are approaching the 50dB threshold.

<sup>23</sup> RSPB. *Kingfisher breeding, feeding and territory webpage*. Available from: <https://www.rspb.org.uk/birds-and-wildlife/wildlife-guides/bird-a-z/kingfisher/breeding-feeding-territory/>

### 3.3.7 Summary

116. The hydrological, invasive species, and disturbance and displacement impacts associated with the Proposed Scheme have the potential to affect the receiving environment and, consequently, have the potential to affect the conservation objectives supporting the Qualifying Interest / Special Conservation Interests of European site(s). Therefore, the potential for the Proposed Scheme to have significant effects on a European site(s) cannot be excluded.
117. The potential impacts of the Proposed Scheme on the receiving environment, their Zol, and the European sites for which likely significant effects cannot be excluded are summarised in Table 7. In assessing the potential for the Proposed Scheme to result in a significant effect on any European sites, any measures intended to avoid or reduce the harmful effects of the project on European sites are not taken into account.

**Table 7: Summary of Analysis of Likely Significant Effects on European sites**

| Potential Direct, Indirect In Combination Effects and the Zol of the Potential Effects   | Are there any European sites within the Zol of the Proposed Scheme?  |
|--|--|
| Habitat loss<br>No European sites are at risk of direct habitat loss impacts.<br>There is no potential for loss of <i>ex situ</i> inland feeding sites used by SCI bird species.   | No<br>There are no European sites at risk of habitat loss effects associated with the Proposed Scheme  |
| Habitat degradation / effects on QI / SCI species as a result of hydrological impacts<br>Habitats and species downstream of the Proposed Scheme and the associated surface water drainage discharge points, and downstream of offsite wastewater treatment plants. | Yes<br>There are European sites at risk of downstream hydrological effects associated with the Proposed Scheme.<br>Malahide Estuary SPA, Malahide Estuary SAC, North Dublin Bay SAC, South Dublin Bay SAC, South Dublin Bay and River Tolka SPA, North Bull Island SPA, Baldoyle Bay SAC, Baldoyle Bay SPA, Howth Head SAC, Howth Head Coast SPA, Rockabill to Dalkey Island SAC, Ireland's Eye SAC, Ireland's Eye SPA, Dalkey Island SPA, Lambay Island SAC, Lambay Island SPA, Skerries Islands SPA, Rockabill SPA, Rogerstown Estuary SPA and The Murrrough SPA . |
| Habitat degradation as a result of hydrogeological impacts<br>Groundwater-dependant habitats, and the species those habitats support, in the local area that lie downgradient of the Proposed Scheme.  | No<br>There are no European sites at risk of hydrogeological effects associated with the Proposed Scheme   |
| Habitat degradation as a result of introducing/spreading non-native invasive species<br>Habitat areas within, adjacent to, and potentially downstream of the Proposed Scheme.  | Yes<br>There are European sites at risk of the introduction / spreading of non-native invasive species as a result of the Proposed Scheme.<br>North Dublin Bay SAC, South Dublin Bay SAC, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA, Baldoyle Bay SAC, Baldoyle Bay SPA, Malahide Estuary SAC and Malahide Estuary SPA   |
| Air quality impacts<br>Potentially up to 200m from the Proposed Scheme boundary.   | No   |

| Potential Direct, Indirect In Combination Effects and the Zol of the Potential Effects   | Are there any European sites within the Zol of the Proposed Scheme?  |
|--|--|
|  | There are no European sites at risk of air quality effects associated with the Proposed Scheme   |
| Disturbance and displacement impacts<br>Potentially up to several hundred metres from the Proposed Scheme, dependent upon the predicted levels of noise, vibration and visual disturbance associated with the Proposed Scheme, taking into account the sensitivity of the qualifying interest species to disturbance effects | Yes<br>There are no European sites within the potential zone of influence of disturbance effects associated with the construction or operation of the Proposed Scheme.<br>However, there are <i>ex-situ</i> inland feeding sites which may be utilised by SCI wintering bird species within the potential disturbance Zol of the Proposed Scheme<br>Malahide Estuary SPA, Baldoyle Bay SPA, Rogerstown Estuary SPA, Skerries Islands SPA, Ireland's Eye SPA, Lambay Island SPA, North Bull Island SPA, South Dublin Bay and River Tolka SPA, Rockabill SPA and The Murrrough SPA |

### 3.4 In-Combination Effects

118. This section presents the assessment carried out to examine whether other plans or projects have the potential to act in combination with the Proposed Scheme to have a significant effect on European sites.
119. There are twenty European sites within the Zol of the Proposed Scheme at outlined above. These are North Dublin Bay SAC; South Dublin Bay SAC; Howth Head SAC; Rockabill to Dalkey Island SAC; Lambay Island SAC; Ireland's Eye SAC; Howth Head Coast SPA; Dalkey Islands SPA; Rockabill SPA; North Bull Island SPA; South Dublin Bay and River Tolka Estuary SPA; Ireland's Eye SPA; Malahide Estuary SPA; Baldoyle Bay SPA; Rogerstown Estuary SPA; Skerries Islands SPA; Lambay Island SPA; and The Murrrough SPA.
120. All other European sites fall beyond the Zol of the Proposed Scheme. Therefore, there is no potential for any other plans or projects to act in combination with the Proposed Scheme to adversely affect the integrity of any other European sites.
121. The in-combination assessment involved first identifying those plans and projects which have the potential to impact on those European sites within the Zol of the Proposed Scheme.
122. Those plans or projects with the potential to impact upon these European sites are any national, regional and local land use plans or any existing or proposed projects that could potentially affect the ecological environment within the Zol of the Proposed Scheme. These are presented in Table 8 and Table 9.

**Table 8: Land Use Plans and Programmes Considered for the In-Combination Assessment**

| <b>National Plans</b>  |
|--|
| National Energy & Climate Plan 2021-2030   |
| National Spatial Strategy for Ireland 2002-2020;   |
| Project Ireland 2040 – Building Ireland’s Future   |
| National Transport Authority Integrated Implementation Plan 2019-2024  |
| Smarter Travel a Sustainable Transport Future 2009-2020  |
| National Biodiversity Action Plan 2017-2021  |
| River Basin Management Plan 2018-2021  |
| National Air Pollution Control Programme (NAPCP) 2021  |
| National Marine Planning Framework 2018  |
| Water Services Strategic Plan 2015   |
| <b>Regional Plans</b>  |
| Regional Planning Guidelines for the Greater Dublin Area Vol I & II 2010-2022;   |
| Regional Spatial & Economic Strategy for the Eastern and Midland Region 2019-2031  |
| Greater Dublin Area Cycle Network Plan 2013  |
| Eastern Catchment Flood Risk Assessment and Management (CFRAM) study 2011-2016   |
| <b>County/Local Plans</b>  |
| <b>Fingal Development Plan 2017-2023</b>   |
| Fingal Biodiversity Action Plan 2010-2015  |
| Fingal County Council Climate Action Plan 2019-2024  |
| <ul style="list-style-type: none"> <li>• Donabate Local Area Plan 2016</li> <li>• Rivermeade Local Area Plan 2018</li> <li>• Barnhill Local Area Plan 2019</li> <li>• Kinsaley Local Area Plan 2019</li> <li>• Dublin Airport Local Area Plan 2020</li> </ul>  |
| <b>Dublin City Development Plan 2016-2022</b>  |
| Dublin City Biodiversity Action Plan 2021-2025   |
| Dublin City Council Climate Action Plan 2019-2024  |
| <ul style="list-style-type: none"> <li>• Clongriffin-Belmayne Local Area Plan 2012-2018</li> <li>• George’s Quay Local Area Plan 2012-2022</li> <li>• Ballymun Local Area Plan 2017</li> <li>• The Liberties Local Area Plan 2009-2020</li> <li>• Naas Road Local Area Plan 2013-2023</li> <li>• Park West- Cherry Orchard Local Area Plan 2019</li> </ul> |
| <b>South Dublin County Council Development Plan 2022-2028</b>  |
| Biodiversity Action Plan for South Dublin County (2020-2026)- Draft for public consultation  |
| South Dublin County Council Climate Change Action Plan 2019-2024   |
| <ul style="list-style-type: none"> <li>• Tallaght Town Centre Local Area Plan 2020</li> <li>• Liffey Valley Town Centre Local Area Plan 2008</li> </ul>  |
| <b>úin Laoghaire- Rathdown Development Plan 2022-2028;</b>   |
| Dún Laoghaire- Rathdown Biodiversity Plan 2009-2013; Dún Laoghaire- Rathdown Biodiversity Plan (current draft under review)  |
| Dún Laoghaire-Rathdown County Council Climate Change Action Plan 2019-2024   |
| <ul style="list-style-type: none"> <li>• Deansgrange Local Area Plan 2010-2020</li> <li>• Stillorgan Local Area Plan 2018-2024</li> </ul>  |



- Blackrock Local Area Plan 2015-2021
- Woodbrook-Shanganagh Local Area Plan 2017-2024

**Wicklow County Development Plan 2016-2022**

Wicklow Biodiversity Plan 2010-2015

Wicklow County Council Climate Change Adaptation Strategy 2019

- Bray Municipal District Local Area Plan 2018-2024
- Bray & Environs Transport Study 2019
- Bray Town Development Plan 2011-2017

**Table 9: Projects Considered for the In-Combination Assessment**

- Southern Part Access Route (SPAR)
- Widening of the M7 between Junction 9 (Naas North) and Junction 11 (M7/M9) to provide an additional lane in each direction
- Enhancements of the N2/M2 national route inclusive of a bypass of Slane, to provide for additional capacity on the non-motorway sections of this route, and to address safety issues in Slane village associated with, in particular, heavy goods vehicles
- N3 Castaheany Interchange Upgrade: refer to “Details” link
- Reconfiguration of the N7 from its junction with the M50 to Naas, to rationalise junctions and accesses in order to provide a higher level of service for strategic traffic travelling on the mainline
- N3–N4: Barnhill to Leixlip Interchange
- Reconfiguration of the N4 from its junction with the M50 to Leixlip to rationalise accesses and to provide additional capacity at the Quarryvale junction
- Clonburris SDZ roads development:
- DART+ Programme West
- Porterstown Distributor Link Road
- Widening of the N3 between Junction 1 (M50) and Junction 4 (Clonee), plus related junction and necessary changes to the existing national road network
- Lucan LUAS
- DART+ Programme South West
- Junction upgrades and other capacity improvements on the M1 motorway, including additional lanes south of Drogheda, where required
- Finglas LUAS (Green Line extension Broombridge to Finglas)
- DART+ Tunnel Element (Kildare Line to Northern Line)
- Potential Metro South alignment: SW option
- LUAS Cross City incorporating LUAS Green Line Capacity Enhancement - Phase 1
- Potential Metro South alignment: Charlemont to Sandyford
- Poolbeg LUAS
- Leopardstown Link Road Phase 2
- Development of a road link connecting from the southern end of the Dublin Port Tunnel to the South Port area, which will serve the South Port and adjoining development areas
- Poolbeg SDZ roads development
- DART+ Programme Coastal North
- DART+ Programme Coastal South
- R126 Donabate Relief Road: R132 to Portrane Demesne
- Extension of LUAS Green Line to Bray
- Capacity enhancement and reconfiguration of the M11/N11 from Junction 4 (M50) to Junction 14 (Ashford) inclusive of ancillary and associated road schemes, to provide additional lanes and upgraded junctions, plus service roads and linkages to cater for Io
- MetroLink
- Greater Dublin Drainage (GDD)
- Cycling: Greater Dublin Area Cycle Network Plan (excluding Radial Core Bus Corridor elements)
- Dublin Array - offshore windfarm
- Snugborough Interchange upgrade

- FCC/12/0001 Broadmeadow Way. Greenway between Malahide Demesne and Newbridge Demesne to be known as 'Broadmeadow Way'. Malahide.
- Alterations to a permitted double circuit 110kV electricity transmission line development between substations. Darndale / Belcamp
- 15-year permission for development at Oil Berth 3 and Oil Berth 4, Eastern Oil Jetty and at Berths 50A, 50N, 50S, 51, 51A, 49, 52, 53 and associated terminal yards to provide for various elements including new Ro-Ro jetty and consolidation of passenger terminal buildings. Dublin Port.
- A residential development with ancillary commercial uses (retail unit, café and crèche) partially comprising a "Build to Rent" scheme on circa 9.69 hectares. The townlands of Shanganagh, Cork Little and Shankill, Co. Dublin.
- The proposed development for Brexit Infrastructure will consist of - Installation of porta-cabin structures. Resurfacing and amalgamation of existing yards. Parking for heavy good vehicles, cars and bicycles. Gates, signage and all ancillary site works. Dublin Port.
- Provision of a double circuit 220kV transmission line and a 220kV gas insulated switchgear (GIS) substation along with associated and ancillary works. Townlands of Cruiserath, Goddamendy and Bay, Co. Dublin.
- Construction of a 2 storey 110kV Gas Insulated Switchgear (GIS) substation, underground cable and all associated and ancillary site works. Former Clyde House, IDA Blanchardstown Business and Technology Park, Snugborough Road, Blanchardstown, Dublin 15
- Flood alleviation works along and adjacent to the River Poddle extending from the upper reaches of the river. Tymon North, Tallaght to Merchant's Quay, Dublin.
- Park development project at the Racecourse Park
- Increase the capacity of the Dublin Waste to Energy Facility from 600,000 tonnes per annum to 690,000 tonnes per annum
- Clutterland 110kV GIS Substation building and 2 underground single circuit transmission lines
- 2 no. 110kV transmission lines and a 110kV Gas Insulated Switchgear (GIS) substation
- Clongriffin to City Centre Core Bus Corridor Scheme
- Ballymun / Finglas to City Centre Core Bus Corridor Scheme
- Blanchardstown to City Centre Core Bus Corridor Scheme
- Lucan to City Centre Core Bus Corridor Scheme
- Liffey Valley to City Centre Core Bus Corridor Scheme
- Tallaght / Clondalkin to City Centre Core Bus Corridor Scheme
- Templeogue / Rathfarnham to City Centre Core Bus Corridor Scheme
- Kimmage to City Centre Core Bus Corridor Scheme
- Bray to City Centre Core Bus Corridor Scheme
- Belfield / Blackrock to City Centre Core Bus Corridor Scheme
- Ringsend to City Centre Core Bus Corridor Scheme
- A range of Strategic Housing Developments
- GDA Transport Strategy Park and Ride
- A range of Irish Water Projects

123. There is potential for developments listed in Table 9 or those implemented under a range of land use and other plans listed in Table 8 to lie either within European sites, or be situated in a location where they may be within the ZoI of the European sites which also fall within the ZoI of the Proposed Scheme.

124. Key development projects with potential for in-combination effects due to their size, nature and / or location include other Core Bus Corridor Schemes, MetroLink, upgrades to or new rail infrastructure, utility infrastructure including proposed or consented water utility improvement.

125. The potential for in combination effects between these plans and projects and the Proposed Scheme arises via the same pathways for potential effects as identified above in Table 7 for the Proposed Scheme (i.e. hydrological, invasive species, and disturbance and displacement effects) which could act in combination with similar effects and pathways arising from the various plans.

126. Therefore, the potential for the following in combination effects arising from plans cannot be ruled out:



- Habitat degradation / effects on QI / SCI species as a result of hydrological impacts (for example reduction in water quality in catchments draining to Dublin Bay affecting the conservation objectives supporting aquatic habitats and species in North Dublin Bay SAC, South Dublin Bay SAC, Howth Head SAC, Howth Head Coast SPA, Rockabill to Dalkey Island SAC, Lambay Island SAC, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA, Dalkey Islands SPA, Baldoyle Bay SPA, Ireland's Eye SPA, Skerries Islands SPA, Rockabill SPA, Lambay Island SPA, Malahide Estuary SPA, Rogerstown Estuary SPA, Dalkey Islands SPA and The Murrough SPA);
- Habitat degradation as a result of introducing / spreading non-native invasive species; and,
- Disturbance and displacement impacts (for example *ex-situ* inland feeding sites which are utilised by SCI wintering bird species within the potential disturbance ZOI of the Proposed Scheme for Malahide Estuary SPA, Baldoyle Bay SPA, Rogerstown Estuary SPA, Skerries Islands SPA, Ireland's Eye SPA, Lambay Island SPA, North Bull Island SPA, South Dublin Bay and River Tolka SPA and The Murrough SPA).

#### 4 Conclusions of Screening Assessment Process

127. Following an examination, analysis and evaluation of all relevant information and in view of best scientific knowledge and applying the precautionary principle, it can be concluded that there is the possibility for significant effects on the following European sites, in the absence of mitigation, either arising from the project alone or in combination with other plans and projects, as a result of hydrological impacts, hydrogeological impacts, invasive species and disturbance and displacement impacts: North Dublin Bay SAC, South Dublin Bay SAC, Howth Head SAC, Howth Head Coast SPA, Rockabill to Dalkey Island SAC, North Bull Island SPA, South Dublin Bay and River Tolka Estuary SPA and Dalkey Islands SPA, Malahide Estuary SAC, Malahide Estuary SPA, Baldoyle Bay SAC, Baldoyle Bay SPA, Rogerstown Estuary SPA, Skerries Islands SPA, Ireland's Eye SAC, Ireland's Eye SPA, Lambay Island SAC, Lambay Island SPA, Rockabill SPA and The Murrough.
128. In reaching this conclusion, the nature of the project and its potential relationship with all European sites within the zone of influence, and their conservation objectives, have been fully considered.
129. Therefore, it is the professional opinion of the authors of this report that the application for approval for the Proposed Scheme does require a Stage Two Appropriate Assessment in respect of the above listed twenty no European sites (8 no. SACs and 12 no. SPAs) and consequently, the preparation of a Natura Impact Statement (NIS).

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**Smith, G.F., O’Donoghue, P., O’Hora, K., Delaney, E. (2011).** *Best Practice Guidance for Habitat Survey and Mapping.* The Heritage Council Church Lane, Kilkenny, Ireland.

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### **Directives and Legislation**

Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (The Habitats Directive).

Council Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (The Birds Directive).

Planning and Development Acts 2000 (as amended).

S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011.

S.I. No 355/2015 – European Communities (Birds and Natural Habitats) (Amendment) Regulations 2015.

S.I. No. 356/2022 Flora (Protection) Order 2022.

*Figure 1: European sites in the vicinity of the Proposed Scheme*

## Appendix I

### The Qualifying Interests (QIs) and Special Conservation Interests (SCIs) of the European sites in the vicinity of the Proposed Scheme

| European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)  | Location Relative to the Proposed Scheme Site               |
|---|---|
| <b>Special Area of Conservation (SAC)</b>   |   |
| <b>Rye Water Valley/Carton SAC [001398]</b><br>7220 Petrifying springs with tufa formation (Cratoneurion)*<br>1014 Narrow-mouthed Whorl Snail <i>Vertigo angustior</i><br>1016 Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i><br><br><i>S.I. No. 494/2018 - European Union Habitats (Rye Water Valley/Carton Special Area of Conservation 001398) Regulations 2018</i><br>NPWS (2021a) Conservation objectives for Rye Water Valley/Carton SAC [001398]. Version 1.0. Department of Housing, Local Government and Heritage. <sup>24</sup>   | Approximately 14.8km west (upstream) of the Proposed Scheme |
| <b>North Dublin Bay SAC [000206]</b><br>1140 Mudflats and sandflats not covered by seawater at low tide<br>1210 Annual vegetation of drift lines<br>1310 <i>Salicornia</i> and other annuals colonising mud and sand<br>1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> )<br>1395 Petalwort <i>Petalophyllum ralfsii</i><br>1410 Mediterranean salt meadows ( <i>Juncetalia maritimi</i> )<br>2110 Embryonic shifting dunes<br>2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)<br>2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*<br>2190 Humid dune slacks<br><br><i>S.I. No. 524/2019 - European Union Habitats (North Dublin Bay Special Area of Conservation 000206) Regulations 2019</i><br>NPWS (2013a) Conservation Objectives: North Dublin Bay SAC 000206. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. | Approximately 4.5km east of the Proposed Scheme             |
| <b>South Dublin Bay SAC [000210]</b><br>1140 Mudflats and sandflats not covered by seawater at low tide<br>1210 Annual vegetation of drift lines<br>1310 <i>Salicornia</i> and other annuals colonising mud and sand<br>2110 Embryonic shifting dunes<br><br><i>S.I. No. 525/2019 - European Union Habitats (South Dublin Bay Special Area of Conservation 000210) Regulations 2019</i>   | Approximately 3.7km south-east of the Proposed Scheme       |

<sup>24</sup> The versions of the conservation objectives documents referenced in this table are the most recent published versions at the time of writing



| European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)  | Location Relative to the Proposed Scheme Site               |
|---|---|
| NPWS (2013b) <i>Conservation Objectives: South Dublin Bay SAC 000210</i> . Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.  |   |
| <b>Baldoye Bay SAC [000199]</b><br>1140 Mudflats and sandflats not covered by seawater at low tide<br>1310 <i>Salicornia</i> and other annuals colonizing mud and sand<br>1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )<br>1410 Mediterranean salt meadows ( <i>Juncetalia maritimi</i> )<br><br><i>S.I. No. 472/2021 - European Union Habitats (Baldoye Bay Special Area of Conservation 000199) Regulations 2021</i><br>NPWS (2012) <i>Conservation Objectives: Baldoye Bay SAC 000199</i> . Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht   | Approximately 5.76km east of from the Proposed Scheme       |
| <b>Malahide Estuary SAC [000205]</b><br>1140 Mudflats and sandflats not covered by seawater at low tide<br>1310 <i>Salicornia</i> and other annuals colonising mud and sand<br>1320 <i>Spartina</i> swards ( <i>Spartinion maritimae</i> ) <sup>25**</sup><br>1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )<br>1410 Mediterranean salt meadows ( <i>Juncetalia maritimi</i> )<br>2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)<br>2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*<br><br><i>S.I. No. 91/2019 - European Union Habitats (Malahide Estuary Special Area Of Conservation 000205) Regulations 2019</i><br>NPWS (2013b) <i>Conservation Objectives: Malahide Estuary SAC 000205</i> . Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. | Approximately 1.9km north-east of the Proposed Scheme       |
| <b>Howth Head SAC [000202]</b><br>1230 Vegetated sea cliffs of the Atlantic and Baltic coasts<br>4030 European dry heaths<br><br><i>S.I. No. 524/2021 - European Union Habitats (Howth Head Special Area of Conservation 000202) Regulations 2021</i> .<br>NPWS (2016) <i>Conservation Objectives: Howth Head SAC 000202</i> . Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.   | Approximately 9.5km east of the Proposed Scheme             |
| <b>Rogerstown Estuary SAC [000208]</b><br>1130 Estuaries<br>1140 Mudflats and sandflats not covered by seawater at low tide<br>1310 <i>Salicornia</i> and other annuals colonising mud and sand<br>1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> )  | Approximately 5.6km north-north east of the Proposed Scheme |

<sup>25</sup> 1320 *Spartina* swards (*Spartinion maritimae*) habitat is included within the conservation objectives document for Malahide Estuary SAC, but not within the Statutory Instruments document. This is likely because *Spartina* is an invasive alien species in Ireland.

| European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)  | Location Relative to the Proposed Scheme Site     |
|---|---|
| <p>1410 Mediterranean salt meadows (<i>Juncetalia maritimi</i>)</p> <p>2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)</p> <p>2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*</p> <p><i>S.I. No. 286/2018 - European Union Habitats (Rogerstown Estuary Special Area of Conservation 000208) Regulations 2018</i></p> <p>NPWS (2013c) <i>Conservation Objectives: Rogerstown Estuary SAC 000208</i>. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>   |   |
| <p><b>Rockabill to Dalkey Island SAC [003000]</b></p> <p>1170 Reefs</p> <p>1351 Harbour porpoise <i>Phocoena phocaena</i></p> <p><i>S.I. No. 94/2019 - European Union Habitats (Rockabill To Dalkey Island Special Area Of Conservation 003000) Regulations 2019</i></p> <p>NPWS (2013d) <i>Conservation Objectives: Rockabill to Dalkey Island SAC 003000</i>. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>   | Approximately 10km east of the Proposed Scheme    |
| <p><b>Glenasmole Valley SAC [001209]</b></p> <p>6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)</p> <p>6410 <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)</p> <p>7220 Petrifying springs with tufa formation (Cratoneurion)*</p> <p><i>S.I. No. 345/2021 - European Union Habitats (Glenasmole Valley Special Area of Conservation 001209) Regulations 2021</i></p> <p>NPWS (2021b) <i>Conservation objectives for Glenasmole Valley SAC [001209]</i>. Version 1.0. Department of Housing, Local Government and Heritage</p> | Approximately 12.5km south of the Proposed Scheme |
| <p><b>Ireland's Eye SAC [002193]</b></p> <p>1220 Perennial vegetation of stony banks</p> <p>1230 Vegetated sea cliffs of the Atlantic and Baltic coasts</p> <p><i>S.I. No. 501/2017 - European Union Habitats (Ireland's Eye Special Area of Conservation 002193) Regulations 2017</i></p> <p>NPWS (2017a) <i>Conservation Objectives: Ireland's Eye SAC 002193</i>. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</p>   | Approximately 10.7km east of the Proposed Scheme  |
| <p><b>Wicklow Mountains SAC [002122]</b></p> <p>3110 Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)</p> <p>3160 Natural dystrophic lakes and ponds</p> <p>4010 Northern Atlantic wet heaths with <i>Erica tetralix</i></p> <p>4030 European dry heaths</p> <p>4060 Alpine and Boreal heaths</p> <p>6130 Calaminarian grasslands of the <i>Violetalia calaminariae</i></p>   | Approximately 12.7km south of the Proposed Scheme |

| European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)  | Location Relative to the Proposed Scheme Site                       |
|---|---|
| <p>6230 Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe)*</p> <p>7130 Blanket bogs (* if active bog)</p> <p>8110 Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>)</p> <p>8210 Calcareous rocky slopes with chasmophytic vegetation</p> <p>8220 Siliceous rocky slopes with chasmophytic vegetation</p> <p>91A0 Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</p> <p>1355 <i>Lutra lutra</i> (Otter)</p> <p>NPWS (2017b) <i>Conservation Objectives: Wicklow Mountains SAC 002122. Version 1.</i> National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.</p>   |   |
| <p><b>Lambay Island SAC [000204]</b></p> <p>1170 Reefs</p> <p>1230 Vegetated sea cliffs of the Atlantic and Baltic coasts</p> <p>1364 Grey seal <i>Halichoerus grypus</i></p> <p>1365 Harbour seal <i>Phoca vitulina</i></p> <p><i>S.I. No. 294/2019 - European Union Habitats (Lambay Island Special Area Of Conservation 000204) Regulations 2019</i></p> <p>NPWS (2013e) <i>Conservation Objectives: Lambay Island SAC 000204. Version 1.</i> National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>   | <p>Approximately 13.1km north-north-east of the Proposed Scheme</p> |
| <b>Special Protection Area (SPA)</b>  |   |
| <p><b>North Bull Island SPA [004006]</b></p> <p>A046 Light-bellied Brent Goose <i>Branta bernicla hrota</i></p> <p>A048 Shelduck <i>Tadorna tadorna</i></p> <p>A052 Teal <i>Anas crecca</i></p> <p>A054 Pintail <i>Anas acuta</i></p> <p>A056 Shoveler <i>Anas clypeata</i></p> <p>A130 Oystercatcher <i>Haematopus ostralegus</i></p> <p>A140 Golden Plover <i>Pluvialis apricaria</i></p> <p>A141 Grey Plover <i>Pluvialis squatarola</i></p> <p>A143 Knot <i>Calidris canutus</i></p> <p>A144 Sanderling <i>Calidris alba</i></p> <p>A149 Dunlin <i>Calidris alpina</i></p> <p>A156 Black-tailed Godwit <i>Limosa limosa</i></p> <p>A157 Bar-tailed Godwit <i>Limosa lapponica</i></p> <p>A160 Curlew <i>Numenius arquata</i></p> <p>A162 Redshank <i>Tringa totanus</i></p> <p>A169 Turnstone <i>Arenaria interpres</i></p> <p>A179 Black-headed Gull <i>Chroicocephalus ridibundus</i></p> <p>A999 Wetlands &amp; Waterbirds</p> | <p>Approximately 4.5km east of the Proposed Scheme</p>              |

| European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)  | Location Relative to the Proposed Scheme Site          |
|---|--|
| <p><i>S.I. No. 211/2010 - European Communities (Conservation of Wild Birds (North Bull Island Special Protection Area 004006)) Regulations 2010.</i></p> <p>NPWS (2015a) <i>Conservation Objectives: North Bull Island SPA 004006.</i> Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>  |  |
| <p><b>South Dublin Bay and River Tolka Estuary SPA [004024]</b></p> <p>A046 Light-bellied Brent Goose <i>Branta bernicla hrota</i></p> <p>A130 Oystercatcher <i>Haematopus ostralegus</i></p> <p>A137 Ringed Plover <i>Charadrius hiaticula</i></p> <p>A141 Grey Plover <i>Pluvialis squatarola</i></p> <p>A143 Knot <i>Calidris canutus</i></p> <p>A144 Sanderling <i>Calidris alba</i></p> <p>A149 Dunlin <i>Calidris alpina</i></p> <p>A157 Bar-tailed Godwit <i>Limosa lapponica</i></p> <p>A162 Redshank <i>Tringa totanus</i></p> <p>A179 Black-headed Gull <i>Chroicocephalus ridibundus</i></p> <p>A192 Roseate Tern <i>Sterna dougallii</i></p> <p>A193 Common Tern <i>Sterna hirundo</i></p> <p>A194 Arctic Tern <i>Sterna paradisaea</i></p> <p>A999 Wetland and Waterbirds</p> <p><i>S.I. No. 212/2010 - European Communities (Conservation of Wild Birds (South Dublin Bay and River Tolka Estuary Special Protection Area 004024)) Regulations 2010.</i></p> <p>NPWS (2015b) <i>Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024.</i> Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p> | <p>Approximately 1.9km east of the Proposed Scheme</p> |
| <p><b>Baldoyle Bay SPA [004016]</b></p> <p>A046 Light-bellied Brent Goose <i>Branta bernicla hrota</i></p> <p>A048 Shelduck <i>Tadorna tadorna</i></p> <p>A137 Ringed Plover <i>Charadrius hiaticula</i></p> <p>A140 Golden Plover <i>Pluvialis apricaria</i></p> <p>A141 Grey Plover <i>Pluvialis squatarola</i></p> <p>A157 Bar-tailed Godwit <i>Limosa lapponica</i></p> <p>A999 Wetland and Waterbirds</p> <p><i>S.I. No. 275/2010 - European Communities (Conservation of Wild Birds (Baldoyle Bay Special Protection Area 004016)) Regulations 2010.</i></p> <p>NPWS (2013f) <i>Conservation Objectives: Baldoyle Bay SPA 004016.</i> Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p>   | <p>Approximately 5.8km east of the Proposed Scheme</p> |

| European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)   | Location Relative to the Proposed Scheme Site                    |
|--|--|
| <p><b>Malahide Estuary SPA [004025]</b></p> <p>A005 Great Crested Grebe <i>Podiceps cristatus</i><br/> A046 Light-bellied Brent Goose <i>Branta bernicla hrota</i><br/> A048 Shelduck <i>Tadorna tadorna</i><br/> A054 Pintail <i>Anas acuta</i><br/> A067 Goldeneye <i>Bucephala clangula</i><br/> A069 Red-breasted Merganser <i>Mergus serrator</i><br/> A130 Oystercatcher <i>Haematopus ostralegus</i><br/> A140 Golden Plover <i>Pluvialis apricaria</i><br/> A141 Grey Plover <i>Pluvialis squatarola</i><br/> A143 Knot <i>Calidris canutus</i><br/> A149 Dunlin <i>Calidris alpina</i><br/> A156 Black-tailed Godwit <i>Limosa limosa</i><br/> A157 Bar-tailed Godwit <i>Limosa lapponica</i><br/> A162 Redshank <i>Tringa totanus</i><br/> A999 Wetland and Waterbirds</p> <p><i>S.I. No. 285/2011 - European Communities (Conservation of Wild Birds (Malahide Estuary Special Protection Area 004025)) Regulations 2011.</i><br/> NPWS (2013) <i>Conservation Objectives: Malahide Estuary SPA 004025</i>. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p> | <p>Approximately 2 km north east of the Proposed Scheme</p>      |
| <p><b>Wicklow Mountains SPA [004040]</b></p> <p>A098 Merlin <i>Falco columbarius</i><br/> A103 Peregrine <i>Falco peregrinus</i></p> <p><i>S.I. No. 586/2012 - European Communities (Conservation of Wild Birds (Wicklow Mountains Special Protection Area 004040)) Regulations 2012.</i><br/> NPWS (2021c) <i>Conservation objectives for Wicklow Mountains SPA [004040]</i>. Generic Version 8.0. Department of Housing, Local Government and Heritage.</p>  | <p>Approximately 12.9km south of the Proposed Scheme</p>         |
| <p><b>Ireland's Eye SPA [004117]</b></p> <p>A017 Cormorant <i>Phalacrocorax carbo</i><br/> A184 Herring Gull <i>Larus argentatus</i><br/> A188 Kittiwake <i>Rissa tridactyla</i><br/> A199 Guillemot <i>Uria aalge</i><br/> A200 Razorbill <i>Alca torda</i></p> <p><i>S.I. No. 240/2010 - European Communities (Conservation of Wild Birds (Ireland's Eye Special Protection Area 004117)) Regulations 2010.</i><br/> NPWS (2022a) <i>Conservation objectives for Ireland's Eye SPA [004117]</i>. Generic Version 9.0. Department of Housing, Local Government and Heritage.</p>  | <p>Approximately 10.5km east of the Proposed Scheme</p>          |
| <p><b>Rogerstown Estuary SPA [004015]</b></p> <p>A043 Greylag Goose <i>Anser anser</i><br/> A046 Brent Goose <i>Branta bernicla hrota</i></p>  | <p>Approximately 6km north-north-east of the Proposed Scheme</p> |

| European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)   | Location Relative to the Proposed Scheme Site                       |
|--|---|
| <p>A048 Shelduck <i>Tadorna tadorna</i><br/> A056 Shoveler <i>Anas clypeata</i><br/> A130 Oystercatcher <i>Haematopus ostralegus</i><br/> A137 Ringed Plover <i>Charadrius hiaticula</i><br/> A141 Grey Plover <i>Pluvialis squatarola</i><br/> A143 Knot <i>Calidris canutus</i><br/> A149 Dunlin <i>Calidris alpina alpina</i><br/> A156 Black-tailed Godwit <i>Limosa limosa</i><br/> A162 Redshank <i>Tringa totanus</i><br/> A999 Wetlands</p> <p><i>S.I. No. 271/2010 - European Communities (Conservation of Wild Birds (Rogerstown Estuary Special Protection Area 004015)) Regulations 2010.</i><br/> NPWS (2013h) <i>Conservation Objectives: Rogerstown Estuary SPA 004015</i>. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.</p> |   |
| <p><b>Howth Head Coast SPA [004113]</b><br/> A188 Kittiwake <i>Rissa tridactyla</i></p> <p><i>S.I. No. 185/2012 - European Communities (Conservation of Wild Birds (Howth Head Coast Special Protection Area 004113)) Regulations 2012.</i><br/> NPWS (2022b) <i>Conservation objectives for Howth Head Coast SPA [004113]</i>. Generic Version 9.0. Department of Housing, Local Government and Heritage.</p>   | <p>Approximately 12.1km east of the Proposed Scheme</p>             |
| <p><b>Dalkey Islands SPA [004172]</b><br/> A192 Roseate Tern <i>Sterna dougallii</i><br/> A193 Common Tern <i>Sterna hirundo</i><br/> A194 Arctic Tern <i>Sterna paradisaea</i></p> <p><i>S.I. No. 238/2010 - European Communities (Conservation of Wild Birds (Dalkey Islands Special Protection Area 004172)) Regulations 2010</i><br/> NPWS (2022c) <i>Conservation objectives for Dalkey Islands SPA [004172]</i>. Generic Version 9.0. Department of Housing, Local Government and Heritage.</p>  | <p>Approximately 13.8km south-south-east of the Proposed Scheme</p> |
| <p><b>Lambay Island SPA [004069]</b><br/> A009 Fulmar <i>Fulmarus glacialis</i><br/> A017 Cormorant <i>Phalacrocorax carbo</i><br/> A018 Shag <i>Phalacrocorax aristotelis</i><br/> A043 Greylag Goose <i>Anser anser</i><br/> A183 Lesser Black-backed Gull <i>Larus fuscus</i><br/> A184 Herring Gull <i>Larus argentatus</i><br/> A188 Kittiwake <i>Rissa tridactyla</i><br/> A199 Guillemot <i>Uria aalge</i><br/> A200 Razorbill <i>Alca torda</i><br/> A204 Puffin <i>Fratercula arctica</i></p>   | <p>Approximately 13.1km north-east of the Proposed Scheme</p>       |



| European Site Name [Code] and its Qualifying interest(s) / Special Conservation Interest(s) (*Priority Annex I Habitats)   | Location Relative to the Proposed Scheme Site                       |
|--|---|
| <p><i>S.I. No. 242/2010 - European Communities (Conservation of Wild Birds (Lambay Island Special Protection Area 004069)) Regulations 2010.</i></p> <p>NPWS (2022d) <i>Conservation objectives for Lambay Island SPA [004069].</i> Generic Version 9.0. Department of Housing, Local Government and Heritage.</p>   |   |
| <p><b>Skerries Islands SPA [004122]</b></p> <p>A017 Cormorant <i>Phalacrocorax carbo</i></p> <p>A018 Shag <i>Phalacrocorax aristotelis</i></p> <p>A046 Brent Goose <i>Branta bernicla hrota</i></p> <p>A148 Purple Sandpiper <i>Calidris maritima</i></p> <p>A169 Turnstone <i>Arenaria interpres</i></p> <p>A184 Herring Gull <i>Larus argentatus</i></p> <p><i>S.I. No. 245/2010 - European Communities (Conservation of Wild Birds (Skerries Islands Special Protection Area 004122)) Regulations 2010.</i></p> <p>NPWS (2022e) <i>Conservation objectives for Skerries Islands SPA [004122].</i> Generic Version 9.0. Department of Housing, Local Government and Heritage.</p>  | <p>Approximately 15.8km north-north-east of the Proposed Scheme</p> |
| <p><b>The Murrough SPA [004186]</b></p> <p>A001 Red-throated Diver <i>Gavia stellata</i></p> <p>A043 Greylag Goose <i>Anser anser</i></p> <p>A046 Light-bellied Brent Goose <i>Branta bernicla hrota</i></p> <p>A050 Wigeon <i>Anas penelope</i></p> <p>A052 Teal <i>Anas crecca</i></p> <p>A179 Black-headed Gull <i>Chroicocephalus ridibundus</i></p> <p>A184 Herring Gull <i>Larus argentatus</i></p> <p>A195 Little Tern <i>Sterna albifrons</i></p> <p><i>S.I. No. 298/2011 - European Communities (Conservation of Wild Birds (The Murrough Special Protection Area 004186)) Regulations 2011.</i></p> <p>NPWS (2022f) <i>Conservation objectives for The Murrough SPA [004186].</i> Generic Version 9.0. Department of Housing, Local Government and Heritage.</p> | <p>Approximately 31.1km south-south-east of the Proposed Scheme</p> |
| <p><b>Rockabill SPA [004014]</b></p> <p>A148 Purple Sandpiper <i>Calidris maritima</i></p> <p>A192 Roseate Tern <i>Sterna dougallii</i></p> <p>A193 Common Tern <i>Sterna hirundo</i></p> <p>A194 Arctic Tern <i>Sterna paradisaea</i></p> <p><i>S.I. No. 94/2012 - European Communities (Conservation of Wild Birds (Rockabill Special Protection Area 004014)) Regulations 2012.</i></p> <p>NPWS (2013i) <i>Conservation Objectives: Rockabill SPA [004014].</i> Version 1. Department of Arts, Heritage and the Gaeltacht.</p>  | <p>Approximately 16.7km north-north-east of the Proposed Scheme</p> |