



# CELBRIDGE HAZELHATCH MOBILITY CORRIDOR

## Natura Impact Statement (NIS)



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## Appendices

### Appendix A In-combination assessment

# 1. INTRODUCTION

## 1.1. Scope of Report

RPS was commissioned by Kildare County Council (KCC) to produce this Natura Impact Statement (NIS) for Appropriate Assessment (AA). The report will inform the Competent Authority's AA of the proposed Celbridge to Hazelhatch Mobility Corridor (hereafter 'the Proposed Scheme') in Co. Kildare. This report has been prepared to accompany an application by Kildare County Council for planning permission from the Competent Authority, and is an examination of whether, in view of best-scientific knowledge and in applying the precautionary principle, the Proposed Scheme, either individually or in combination with other plans or projects, may adversely affect the integrity of any European Site(s). The assessment will be carried out in accordance with the legal context outlined in **Section 1.2**.

## 1.2. Legislative Context

### 1.2.1. European Sites

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, better known as the 'Habitats Directive', provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of a European Union-wide network of sites known as Natura 2000 (hereafter referred to as 'European Sites'). In the Republic of Ireland, European Sites comprise:

- Special Areas of Conservation (SACs) designated for habitats, plants, and non-bird species, under the Habitats Directive (92/43/EEC);
- Special Protection Areas (SPAs) classified for bird species and their habitats, under the Birds Directive (79/409/EEC as codified by Directive 2009/147/EC); and
- 'Candidate' sites including 'cSACs' and 'proposed' sites including 'pSPAs'. The process of designating cSACs as SACs, and pSPAs as SPAs is ongoing in Ireland. The term SAC and SPA is used throughout this report for both SACs and cSACs, and SPAs and pSPAs given they are subject to equal protection.

Each European Site has assigned Conservation Objectives (CO) and a list of Qualifying Interests (QIs) or Special Conservation Interests (SCIs). The CO concept appears in the eighth recital of Directive 92/43/EEC, which reads: *'whereas it is appropriate, in each area designated, to implement the necessary measures having regard to the conservation objectives pursued'*. Article 1 then explains that *'conservation means a series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favourable status'*.

The National Parks and Wildlife Service (NPWS) publishes COs for European Sites on their website. The NPWS advise in the general introductory notes of their site-specific CO series publications that an AA based on their *'published conservation objectives will remain valid even if the conservation objective targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out'*. The NPWS advise that to assist in that regard, it is essential that the date and version are included when objectives are cited.

### 1.2.2. Appropriate Assessment

#### 1.2.2.1. European Context

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to have a significant effect on or to adversely affect the integrity of European Sites (Annex 1.1). Article 6(3) establishes the requirement for AA:

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

*ascertained that it will not adversely affect the integrity of the site concerned and if appropriate, after having obtained the opinion of the general public”.*

Article 6(4) states:

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

### 1.2.2.2. National Context

In the context of the Proposed Scheme, the requirement (to screen) for AA under the Habitats Directive is transposed by the Planning and Development Act 2000, as amended; ‘the Planning Act’, and the Planning and Development Regulations 2001, as amended.

Under Section 177U (5) of the Planning Act, the competent authority shall determine that an AA of a proposed development is required if it cannot be excluded [emphasis added], on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European Site(s).

## 1.3. Stages of Appropriate Assessment

### Stage 1: Screening/Test of Significance

This process identifies whether the proposed development is directly connected with or necessary to the management of a European Site(s) and whether the proposed development is likely to have significant impacts upon a European Site(s), either alone or in combination with other projects or plans.

The output from this stage (i.e., the subject of this report) is a determination for each European Site(s) of not significant, significant, potentially significant, or uncertain effects. The latter three determinations will cause that European Site to be brought forward to Stage 2.

### Stage 2: Appropriate Assessment

This stage considers the impact of the proposed development on the integrity of a European Site(s), either alone or in combination with other projects or plans, with respect to: (i) the European Site’s conservation objectives; and (ii) the European Site’s structure, function, and its overall integrity. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts is undertaken.

The output from this stage is a Natura Impact Statement (NIS). This document must include sufficient information for the competent authority to carry out the appropriate assessment. If the assessment is negative, i.e., adverse effects on the integrity of a European Site cannot be excluded, then the process must consider alternatives (Stage 3) or proceed to Stage 4.

### Stage 3: Assessment of Alternatives

This process examines alternative ways of achieving the objectives of the proposed development that avoid adverse impacts on the integrity of the European Site. This assessment may be carried out concurrently with Stage 2 in order to find the most appropriate solution. If no alternatives exist or all alternatives would result in negative impacts to the integrity of the European Sites, then the process either moves to Stage 4 or the proposed development is abandoned.

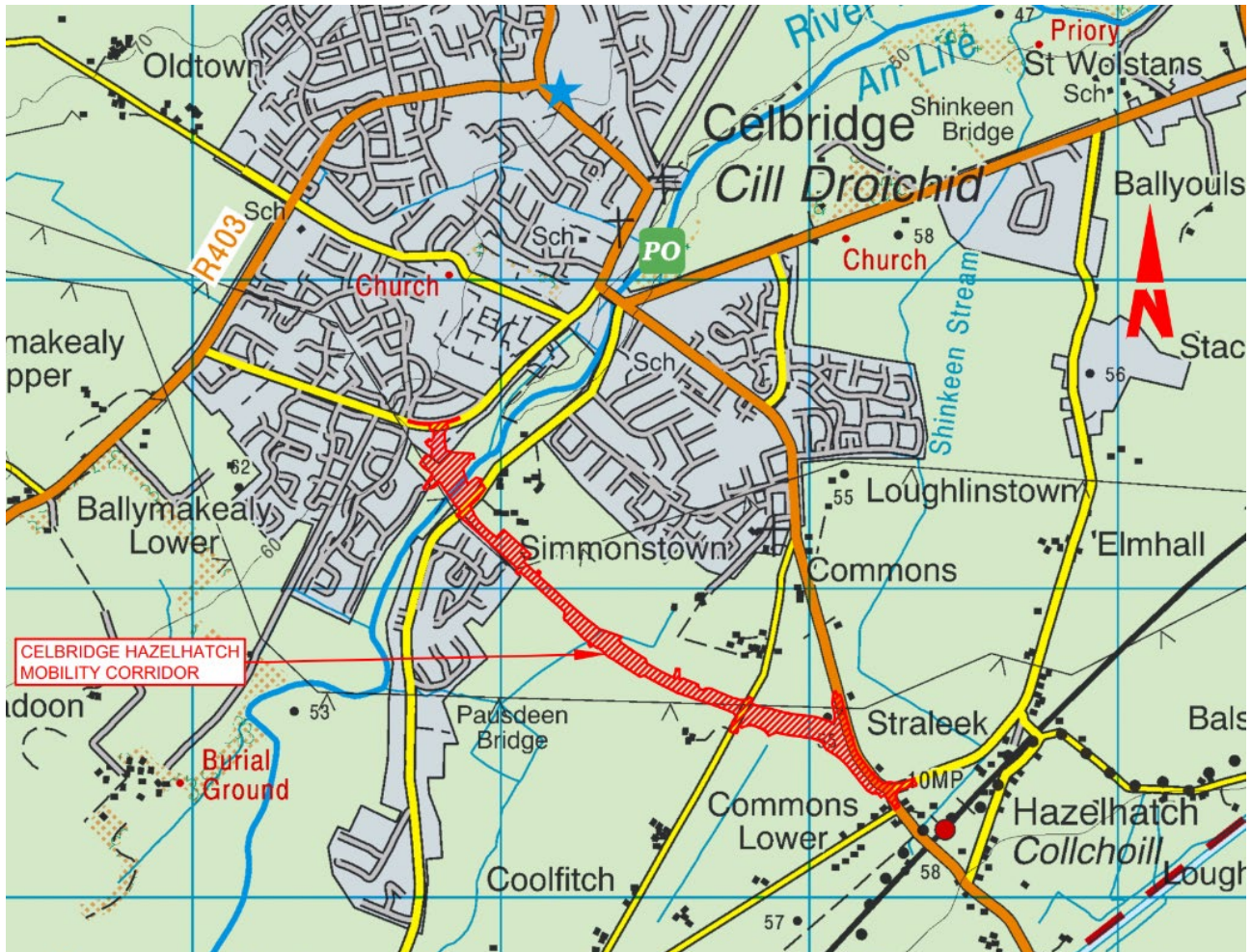
### Stage 4: Assessment Where Adverse Impacts Remain

This stage includes the identification of compensatory measures where, in the context of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

## 2. PROJECT DESCRIPTION

### 2.1. Site Location

The project is situated in the south west of Celbridge, County Kildare. Refer to drawing **MDT0902-RPS-01-XX-DR-Z-IX0001** (Location Plan) and **Figure 2-1** below.



**Figure 2-1: Site Location**

### 2.2. Description of Route

The proposed route is approximately 2km long, beginning at a proposed junction with Clane Road and heading in a south easterly direction, predominantly through greenfield lands until it ties into the existing R405 Hazelhatch Road, before terminating at the existing Loughlinstown Road Roundabout near Hazelhatch Train Station. The route also includes proposed junctions with Newtown Road, Simmonstown Manor Road and R405 Hazelhatch Road. A new bridge crossing is required over the River Liffey, located approximately 200m south of the beginning of the route at Clane Road.

### 2.3. Road Cross-Section

The proposed road cross-section for the project's mainline is a single carriageway with 3.5m wide lanes in each direction for a total pavement width of 7.0m.

The majority of the route includes 2.0m wide one-way cycle tracks and 2.0m wide footpaths on both sides of the road. The portion of the route between Hazelhatch Road Junction and Loughlinstown Road roundabout includes a 2.0m wide footpath and 3.0m wide two-way cycleway on the northbound side of the road only due to space restrictions and desire line requirements.

On both sides of the mainline, it is typically proposed to provide a 2.0m wide grassed verge between the cycle facility and the carriageway, and 1.0m wide grassed verge between the back of the footpath and adjacent earthwork slopes. The exception to this is across the proposed River Liffey Bridge, where no additional verge width is proposed between the cycle tracks and the carriageway or between the footpaths and bridge parapets.

### 2.4. Design Speed, Speed Limit and Geometry

The design speeds and corresponding posted speed limits proposed for the new road are as follows:

- Ch. 0+000 to Ch. 0+350: 50km/h
- Ch. 0+000 to Ch. 1+1959: 60km/h

The road geometry is designed to the standards contained in the Design Manual for Urban Roads and Streets May 2019.

The proposed geometric design for the new road is illustrated on drawings **MDT0902-RPS-01-XX-DR-Z-GE0000-GE0003**.

### 2.5. Junctions

Junctions are proposed where the new road interfaces with the following existing roads:

- **Clane Road (R403)**: At the start of the route, a 3-arm signalised junction is proposed with the existing regional road.
- **Newtown Road (L1016)**: At approximately Ch. 0+285, a 4-arm signalised junction is proposed with the existing local road.
- **Simmonstown Manor Road (L5062)**: At approximately Ch. 1+420, a priority junction is proposed with the existing local road on the northbound side of the proposed new road. On the southbound side of the road it is proposed to terminate the existing road with a turning head to be provided at the end of the cul-de-sac.
- **Hazelhatch Road (R405)**: At approximately Ch. 1+730, a 3-arm signalised junction is proposed with the existing regional road.
- **Loughlinstown Road (L5061)**: At the end of the route, minor improvements are proposed to the existing roundabout junction.

All junctions include facilities for pedestrians and cyclists.

### 2.6. River Liffey Bridge Crossing

A new bridge crossing over the River Liffey is required between approximately Ch.0+170 to Ch. 0+265.

The location of the proposed bridge is illustrated on drawing **MDT0902-RPS-01-XX-DR-Z-BR0001**. The primary function of the bridge is to carry the Celbridge to Hazelhatch Mobility Corridor over the River Liffey. The design life of the structure shall be 120 years.

The proposed River Liffey Bridge will be an integral Single Span Varying Depth Steel Composite Plate Girder Bridge. Being an integral structure, the superstructure is connected monolithically to the substructure. This design enhances durability and reduces maintenance by eliminating expansion joints and bearings. The substructure consists of cast in-situ reinforced concrete abutments, integral with the steel girders and a bridge deck.

The bridge comprises of a single span arrangement with an overall length of 65.5m. It will span across the CFRAM 0.1% Annual Exceedance Probability (AEP) predicted peak flood level (50.53mOD). The 0.1% AEP flood extents are contained within the river's steep bank slopes in the vicinity of the proposed crossing, and the proposed bridge is designed to span above the top of the riverbanks. Hence the proposed structure will not have any impact on the predicted flooding from the River Liffey.

The superstructure consists of weathering steel plate girders, varying in depth (meaning their height changes across the span of the bridge), that act compositely with an in-situ concrete deck slab. Weathering steel

offers significant advantages in terms of durability and maintenance, as it develops a protective rust layer that prevents further corrosion, reducing the need for repainting and extensive upkeep. Fibre Reinforced Concrete (FRC) permanent formwork will span between the girders to support the deck slab, which will be poured in-situ to form the integral structure. Transverse concrete cantilevers will extend from the deck edges to support the parapet and edge beam.

The clear span between abutments is 63.4m, with an out-to-out width of 16.03m and skew angle of 17.5°. The substructure consists of reinforced concrete abutments on shallow footing foundations, reflecting the underlying geotechnical conditions. The design of the bridge structure includes for sufficient headroom (2.7m) for a future active travel route under the bridge for both pedestrians and cyclists on the northern bank of the river (note – this route is not part of Proposed Scheme).

A 1.4m high bespoke parapet system will be implemented, serving as both a vehicle restraint and pedestrian parapet, with N2 Containment Level and mesh infill. These combined systems will be installed on the precast concrete parapet edge beams at the deck edges.

The River Liffey Bridge has the following cross-sectional dimensions as outlined in **Table 2-1** below.

**Table 2-1: Proposed Cross-sectional Dimensions of the River Liffey Bridge Crossing**

| Location              | Width (m)   |
|-----------------------|-------------|
| Parapet Edge beam     | 0.5         |
| Walkway               | 2.0         |
| Cycleway              | 2.0         |
| Carriageway westbound | 3.5         |
| Carriageway eastbound | 3.5         |
| Cycleway              | 2.0         |
| Walkway               | 2.0         |
| Parapet Edge beam     | 0.5         |
| <b>Total</b>          | <b>16.0</b> |

As this is a single span structure, no works will be required within the river channel.

The proposed bridge design is illustrated on drawings **MDT0902-RPS-01-XX-DR-Z-BR1010-BR1012**.

## 2.7. Land Take

The approximate land take required for the scheme is as follows:

- Permanent land take (including roadbed): 12.4ha
- Temporary land take: 0.7ha

Approximately 15 no. landowners are impacted by this land take as illustrated on drawings **MDT0902-RPS-01-XX-DR-Z-LH0001-LH0003**.

## 2.8. Access Arrangements

Where lands are severed or existing access arrangements are impacted by the project, appropriate measures will be provided to maintain vehicle access. These Include:

- Ch. 0+060: Junction provided on mainline for replacement access to service station.
- Ch. 0+090: Direct access provided to maintain access to foul water pumping station.
- Ch. 0+105: Junction provided on mainline for access to severed commercial lands.

- Ch. 0+550: Field access provided on mainline for access to severed agricultural lands.
- Ch. 0+605: Field access provided on mainline for access to severed agricultural lands.
- Ch. 0+890: Field access provided on maintenance access road for access to severed agricultural lands. The portion of this maintenance access road between the mainline and field access shall be subject to shared use with the landowner and KCC.
- Ch. 1+175: Field access provided on mainline for access to severed agricultural lands.
- Ch. 1+415: Field accesses provided on either side of Simmonstown Manor Road to severed agricultural lands.
- Ch. 1+490: Culvert to be extended and access track provided to maintain access across watercourse.

Where the project interfaces with existing roads, existing accesses will be retained wherever possible. Works will be carried out as necessary to tie in these existing accesses with the new road surface.

Vehicle access for maintenance of drainage attenuation and pollution control facilities are proposed at the following locations:

- Ch. 0+090: Access provided on mainline (shared with foul water pumping station access) for maintenance of Attenuation Basin 1 and associated pollution control facilities.
- Ch. 0+270: Access provided on Newtown Road for maintenance of Attenuation Basin 2 and associated pollution control facilities.
- Ch. 0+890: Access provided on mainline for maintenance of Attenuation Basin 3, Attenuation Swale 4A and associated pollution control facilities.
- Ch. 0+935: Access provided on mainline for maintenance of Attenuation Swale 4B and associated pollution control facilities.
- Ch. 1+415: Access provided at end of Simmonstown Manor Road for maintenance of Attenuation Basin 5 and associated pollution control facilities.
- Ch. 1+425: Access provided at end of Simmonstown Manor Road for maintenance of Attenuation Swale 6A and associated pollution control facilities.
- Ch. 1+835: Access provided on mainline for maintenance of Attenuation Swale 6B and associated pollution control facilities.

## 2.9. Drainage

The proposed surface water drainage layouts are illustrated on the drawings **MDT0902-RPS-01-XX-DR-C-DR0000 to DR0007**.

### 2.9.1. Edge Drainage Systems

The proposed road cross section limits the ability to utilise soft SuDS features at the road edge (filter strips, grass channels) as the primary surface water collection method. As the carriageway is kerbed, the surface water will be collected from the carriageway using kerb and gully drainage systems which may include traditional gully systems, or by combined kerb & drainage systems (CKDS). However, once the surface water is collected, various SuDS features (bio-retention trenches, swales, attenuation basins, infiltration trenches) will treat and attenuate the surface water run-off before it discharges to the receiving watercourse at greenfield run-off rates.

On large embankments, once the surface water is collected, it will discharge to a carrier pipe system beneath the verge and/or footpath and cycle track, and continue through the system where it will eventually discharge to attenuation and treatment basins.

In other locations of large embankments where the attenuation feature is a swale at the base of the road earthworks, the kerb and gully drainage system will discharge directly to the swales without connecting to a carrier pipe system first.

In areas of shallow embankment or cut, or areas where the proposed road is at grade, the kerb and gully drainage systems will discharge to a bio-retention trench (BRT) as shown on **MDT0902-RPS-01-XX-DR-C-DR2001**. During average rainfall events, the surface water in the trench will primarily discharge via infiltration as the outlet pipe from the BRT is at a higher level than the trench invert. During intense rainfall events, the water in the trench will fill to the outlet level, and discharge through the pipe ensuring the BRT does not become saturated and/or flooded. The water will also be discharged by evapotranspiration where the surface of the trench is planted with vegetation. The BRT will be located beneath the verge behind the kerb. Any water that does not infiltrate, or that is not absorbed by the vegetation, will discharge to the outlet of the BRT and into the carrier pipe system before discharging to an attenuation feature (basin/swale/infiltration trench). Where a carrier pipe in a large embankment continues to an area where the road is at-grade or in cut, the carrier pipe will discharge to a BRT to allow infiltration and evapotranspiration (subject to minimum separation distances being provided).

In areas where rock is at or near the surface and the minimum separation distances to bedrock or groundwater cannot be achieved, the trench shall be lined with an impermeable liner, meaning evapotranspiration will be the only discharge method for the water before the level reaches the outlet pipe invert. Alternatively in such areas, the BRT may be omitted where the environmental or landscaping risks outweigh the benefits.

Where levels prohibit connections to the mainline drainage the kerb and gully drainage systems will discharge to infiltration trenches.

## 2.9.2. Attenuation Systems

At the discharge locations it is proposed that, where possible and where required as a condition of the drainage design, attenuation ponds/swales are to be constructed to control the discharge of water to the receiving watercourse. As well as controlling the discharge, these allow sediments to settle from the water prior to the road drainage being discharged to the receiving watercourse. Attenuation ponds/swales have an environmental benefit in that they assist in improving the quality of the water being discharged to the watercourse.

Once the surface water enters the attenuation basin or attenuation swale, it will travel through the system to the outlet where the outfall discharge rate will be limited to the pre-development greenfield runoff rate. The attenuation features are designed to attenuate the runoff during the 100-year rainfall event to the equivalent  $Q_{bar}$  greenfield runoff rate.

All attenuation ponds (Ponds 1, 2, 3 & 5) will have a permanent depth of water beneath the outlet invert to aid water treatment prior to discharge. The permanent water depths will be 500mm and an aquatic bench, shall be provided just below the permanent water depth to deter unintentional entry.

Subsequently, the attenuated surface water will then pass through a hydrocarbon interceptor prior to discharge to the receiving watercourse. A summary of the outfalls where attenuation systems are required is provided in **Table 2-2** below.

**Table 2-2: Proposed Drainage Outfalls**

| Drainage Network Ref. No | Attenuation System Ref. No | Contributing Catchment Area (ha) | Max Discharge Rate (l/s) | Attenuation System - Volume of Storage (m <sup>3</sup> ) | Outfall                   |
|--------------------------|----------------------------|----------------------------------|--------------------------|----------------------------------------------------------|---------------------------|
| 1                        | Attenuation Basin 1        | 0.41                             | 1.10                     | 277.00                                                   | River Liffey              |
| 2                        | Attenuation Basin 2        | 0.66                             | 1.70                     | 455.00                                                   | River Liffey              |
| 3                        | Attenuation Basin 3        | 0.59                             | 1.50                     | 411.00                                                   | Loughlinstown Watercourse |
| 4A                       | Attenuation Swale 4A       | 0.30                             | 0.80                     | 206.00                                                   | Loughlinstown Watercourse |
| 4B                       | Attenuation Swale 4B       | 0.30                             | 0.80                     | 203.00                                                   | Loughlinstown Watercourse |
| 5                        | Attenuation Basin 5        | 0.39                             | 1.00                     | 239.00                                                   | Hazelhatch River          |

| Drainage Network Ref. No | Attenuation System Ref. No | Contributing Catchment Area (ha) | Max Discharge Rate (l/s) | Attenuation System - Volume of Storage (m <sup>3</sup> ) | Outfall                                     |
|--------------------------|----------------------------|----------------------------------|--------------------------|----------------------------------------------------------|---------------------------------------------|
| 6A                       | Attenuation Swale 6A       | 0.34                             | 0.90                     | 245.00                                                   | Hazelhatch River                            |
| 6B                       | Attenuation Swale 6B       | 0.35                             | 0.90                     | 252.00                                                   | Stream Diversion                            |
| 7                        | N/A                        | N/A                              | N/A                      | N/A                                                      | 3 No. Outfalls to Infiltration Trenches     |
| 8                        | N/A                        | N/A                              | N/A                      | N/A                                                      | Stream Diversion                            |
| 9                        | N/A                        | N/A                              | N/A                      | N/A                                                      | 5 No. Outfalls to existing drainage network |

The details of the proposed watercourse crossing structures are outlined in **Table 2-3**.

**Table 2-3: Proposed Watercourse Crossings**

| Structure Ref.        | Chainage | Location          | Watercourse          | Type               | Span/Length (m) | Size (m)            | Embedment (m) |
|-----------------------|----------|-------------------|----------------------|--------------------|-----------------|---------------------|---------------|
| River Liffey Crossing | 0+230    | Mainline Corridor | River Liffey         | Single Span Bridge | 65.50           | -                   | -             |
| Cul-01                | 0+880    | Mainline Corridor | Loughlinstown Stream | Pipe               | 35.11           | 1.2mØ               | 0.300         |
| Cul-02                | 1+490    | Mainline Corridor | Hazelhatch River     | Box                | 37.40           | 4.0m (W) x 2.7m (H) | 0.500         |
| Cul-03                | 1+710    | Mainline Corridor | Stream Diversion     | Box                | 31.20           | 3.5m (W) x 2.6m (H) | 0.500         |

## 2.10. Project Specific Flood Alleviation Proposals

In accordance with the requirements of “*The Planning System and Flood Risk Management, Guidelines for Planning Authorities*” and associated Technical Appendices (DoEHLG & OPW, 2009), a separate Flood Risk Assessment (FRA) has been carried out.

The Guidelines outline the key principles that should be considered when assessing flood risk to proposed sites. It recommends a staged approach to the assessment of flood risk. The FRA may conclude at any stage if criteria are not met to progress to the next stage. The stages are listed below:

- Stage I Flood Risk Identification – to identify whether there may be any flooding or surface water management issues.
- Stage II Initial Flood Risk Assessment – to confirm sources of flooding that may affect an area or proposed development, to appraise the adequacy of existing information and to scope the extent of the risk of flooding which may involve preparing indicative flood zone maps.
- Stage III Detailed Flood Risk Assessment – to assess flood risk issues in sufficient detail and to provide a quantitative appraisal of potential flood risk to a proposed or existing development or land to be zoned, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures.

The Flooding Risk Assessment is provided under separate cover as part of the planning application and a summary is provided below:

- The desktop study undertaken identified fluvial flooding from the Hazelhatch Rivers as the primary source of flood risk to the proposed CHMC site. Potential fluvial flood risk was also identified for the River Liffey and Loughlinstown River Crossing. Fluvial Flooding caused by insufficient channel and/or hydraulic structures capacity contributing to out-of-bank flooding. Pluvial flooding was identified as a possible risk to the site due to the extent of the hardstanding area proposed for the

development, and also due to GSI Synthetic Aperture Radar (SAR) seasonal flood map showing a low probability of localised pluvial flooding intersecting the proposed CHMC.

- The Stage 2 Initial Flood Risk Assessment concludes the design for the River Liffey and Loughlinstown River Crossings are adequate and does not pose a fluvial flood risk. The proposed CHMC drainage design improves the existing pluvial flood risk and it also caters for the run-off from hardstanding areas and the discharge to receiving watercourses are limited to greenfield runoff rates. The fluvial flood risk from the Hazelhatch Rivers required further assessment and was progressed to Stage 3 Detailed Flood Risk Assessment.
- The Stage 3 Detailed Flood Risk Assessment concluded that mitigation was required to ensure no increase to flood risk adjacent to the Scheme due to flooding from the Hazelhatch Rivers.

The following measures are proposed between Ch. 1+440 to Ch. 1+710, where the proposed road crosses through an area subject to existing flooding, to mitigate potential increases in flood levels upstream of the project:

- Proposed 15 no. 0.9m diameter floodplain culverts (60m length each)
- Proposed 4 no. 1m deep ditches (500m total length)
- The Stage 3 Detailed Flood Risk Assessment concludes that the proposed CHMC with mitigation does not increase flood risk elsewhere. The results of the analysis showed the proposed CHMC provide an improved freeboard for a number of residential dwellings located downstream of the proposed CHMC.

The proposed CHMC is considered an appropriate development of the site in accordance with the requirements of the Justification Test and the Planning Guidelines for Flood Risk Management (DoEHLG & OPW 2009).

## 2.11. Utilities

Utility providers were contacted and requested to provide all relevant information on any existing utilities located within the study area for the Celbridge to Hazelhatch Mobility Corridor. Responses received indicated that GNI, ESB, Eir, Virgin Media and Uisce Éireann (formerly known as Irish Water) have utilities in the study area. Most of the other utility companies responded confirming that they do not currently own any plant within the study area and have no plans to construct any new plant within the study area in the foreseeable future.

A Utilities Report has been prepared for the scheme (Reference **MDT0902-RPS-00-XX-RP-Z-0032**) which provides a summary of the existing utilities encountered along the scheme and outlines the proposed measures for addressing any conflicts with existing services. A summary of the utility conflicts expected to be encountered and the recommended measures for each conflict are provided in **Table 2-4** below.

The proposed utility works are illustrated on drawings **MDT0902-RPS-01-XX-DR-Z-UT1001-UT1007**.

**Table 2-4: Summary of Proposed Measures for Utility Conflicts**

| Location                              | Description of Service | Conflict                                                                              | Proposed Measures                               |
|---------------------------------------|------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------|
| <b>Gas Networks Ireland (GNI)</b>     |                        |                                                                                       |                                                 |
| Ch. 0                                 | Gas Distribution Pipe  | Pipe runs along the R403 Clane Road where the project ties in with the existing road. | Pipeline to be retained and protected in place. |
| Ch. 50 to Ch. 100                     | Gas Distribution Pipe  | Pipe crosses the proposed road alignment.                                             | Pipeline to be decommissioned.                  |
| Ch. 290                               | Gas Distribution Pipe  | Pipe runs along Newtown Road where the project interfaces with the existing road.     | Pipeline to be retained and protected in place. |
| <b>ESB / ESB International (ESBI)</b> |                        |                                                                                       |                                                 |

| Location             | Description of Service     | Conflict                                                                                                                           | Proposed Measures                                               |
|----------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Ch. 100              | HV 110KV Overhead Line     | Overhead powerline crosses over proposed access to severed lands.                                                                  | Overhead powerline to be retained and protected in place.       |
| Ch. 150              | HV 110KV Overhead Line     | Overhead powerline crosses over proposed footpath link.                                                                            | Overhead powerline to be retained and protected in place.       |
| Ch. 290              | HV 110KV Overhead Line     | Overhead powerline crosses over Newtown Road where the project interfaces with the existing road.                                  | Overhead powerline to be retained and protected in place.       |
| Ch. 540 to Ch. 570   | HV 110KV Overhead Line     | Overhead powerline crosses over proposed road alignment.                                                                           | Overhead powerline to be retained and protected in place.       |
| Ch. 1250 to Ch. 1450 | HV 220KV Overhead Line     | Overhead powerline crosses over proposed road alignment.                                                                           | Overhead powerline to be retained and protected in place.       |
| Ch. 1700 to Ch. 1750 | HV 220KV Overhead Line     | Overhead powerline crosses over realignment of R405 Hazelhatch Road.                                                               | Overhead powerline to be retained and protected in place.       |
| Ch. 0 to Ch. 75      | HV 38KV Underground Cable  | Underground power cable crosses the proposed road alignment.                                                                       | Underground power cable to be retained and protected in place.  |
| Ch 0.                | MV/LV Underground Cables   | Underground power cables run along the R403 Clane Road where the project ties in with the existing road.                           | Underground power cables to be retained and protected in place. |
| Ch. 290              | MV/LV Underground Cables   | Underground power cables run along Newtown Road where the project interfaces with the existing road.                               | Underground power cables to be retained and protected in place. |
| Ch. 360              | MV 10KV/20KV Overhead Line | Overhead powerline crosses the proposed road alignment.                                                                            | Overhead powerline to be retained and protected in place.       |
| Ch. 1960             | LV 400V/230V Overhead Line | Overhead powerline located near where the proposed road alignment ties in with the Loughlinstown Road Roundabout at Chainage 1960. | Overhead powerline to be diverted with new overhead line.       |
| <b>Uisce Éireann</b> |                            |                                                                                                                                    |                                                                 |
| Ch.0                 | Watermain                  | Watermain runs along the R403 Clane Road where the project ties in with the existing road.                                         | Watermain to be retained and protected in place.                |
| Ch. 290              | Watermain                  | Watermain runs along Newtown Road where the project interfaces with the existing road.                                             | Watermain to be retained and protected in place.                |
| Ch. 1700 to Ch. 1960 | Watermain                  | Watermain runs along the R405 Hazelhatch Road where the project interfaces with the existing road.                                 | Watermain to be retained and protected in place.                |

| Location             | Description of Service                  | Conflict                                                                                                                  | Proposed Measures                                                                                                                                                                                                                                                            |
|----------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ch. 100 to Ch. 150   | Foul Sewer                              | Foul sewer crosses the proposed road alignment between Chainage 100 to 150.                                               | Foul sewer to be retained and protected in place. Manhole covers to be adjusted where required.                                                                                                                                                                              |
| Ch. 150 to Ch. 200   | Foul Sewer                              | Foul sewer crosses under the north west side of the proposed River Liffey bridge crossing.                                | Foul sewer to be retained and protected in place. Manhole covers to be adjusted where required.<br><br>Additional 300mm diameter pipe to be provided under bridge crossing for potential future use. Manholes to be provided at ends of new pipe to allow future connection. |
| Ch. 200 to Ch. 250   | Foul Sewer                              | Foul sewer crosses under the south east side of the proposed River Liffey bridge crossing.                                | Foul sewer to be retained and protected in place. Manhole covers to be adjusted where required.<br><br>Additional 450mm diameter pipe to be provided under bridge crossing for potential future use. Manholes to be provided at ends of new pipe to allow future connection. |
| Ch. 0                | Eir Underground Cables                  | Underground cables run along the R403 Clane Road where the project ties in with the existing road.                        | Underground cables to be retained and protected in place. Chamber covers to be adjusted where required.                                                                                                                                                                      |
| Ch. 290              | Eir Underground Cable                   | Underground cable runs along Newtown Road where the project interfaces with the existing road.                            | Underground cable to be retained and protected in place. Chamber covers to be adjusted where required.                                                                                                                                                                       |
| Ch. 1420             | Eir Overhead Line and Underground Cable | Overhead line and underground cable run along Simmonstown Manor Road where the project interfaces with the existing road. | Overhead line and underground cable to be diverted underground.                                                                                                                                                                                                              |
| Ch. 1700 to Ch. 1960 | Eir Underground Cable                   | Underground cable runs along the R405 Hazelhatch Road where the project interfaces with the existing road.                | Underground cable to be retained and protected in place. Chamber to be relocated so situated in proposed road verge rather than proposed carriageway. Chamber covers to be adjusted where required.                                                                          |
| Ch. 1890             | Eir Overhead line                       | Overhead line crosses the proposed road alignment.                                                                        | Overhead line to be diverted underground.                                                                                                                                                                                                                                    |
| Ch. 1960             | Eir Underground Cable                   | Underground cable runs along Loughlinstown Road where the project ties in with the existing road.                         | Underground cable to be retained and protected in place. Chamber covers to be adjusted where required.                                                                                                                                                                       |
| <b>Virgin Media</b>  |                                         |                                                                                                                           |                                                                                                                                                                                                                                                                              |
| Ch. 0                | Virgin Media Underground Cable          | Underground cable runs along the R403 Clane Road where the project ties in with the existing road.                        | Underground cables to be retained and protected in place. Chamber covers to be adjusted where required.                                                                                                                                                                      |

## 2.12. Pavement

The following pavement construction is proposed for the new road:

- Surface Course: 40mm SMA 14 surf PMB 65/105-60 DES

- Binder Course: 60mm AC 20 DENSE BIN 40/60 DES
- Base Course: 80mm AC 32 DENSE BASE 40/60 DES
- Subbase: 150mm UGM A

It is generally proposed that 300mm of 6F2 capping is provided beneath the pavement construction.

The pavement design is illustrated on drawings **MDT0902-RPS-01-XX-DR-Z-PV0000-PV0007** and **MDT0902-RPS-01-XX-DR-Z-PV1001**.

### 2.13. Earthworks

The proposed road is predominantly constructed on embankment. The approximate quantities of earthworks material to be imported are as follows:

- General Fill: 56,000m<sup>3</sup>
- Capping (Class 6F2): 6,000m<sup>3</sup>

For road embankment construction in area prone to flooding between Ch. 1+400 to Ch. 1+960, starter layers of Class 6B or Class 6C granular material shall be deposited as the first layers of fill above existing ground level.

Any existing topsoil shall be stripped from ground over the entire footprint of the project. This excavated topsoil shall be appropriately stored for reuse in construction of grassed verges, embankment slopes, and vegetated drainage systems.

Given deep excavations are generally not required for the construction of the road, it is expected that interactions with groundwater bodies shall be minimal for the majority of the works. However, excavations will be required adjacent to the River Liffey for construction of the bridge structure foundations. Groundwater will likely be encountered in these excavations requiring dewatering for construction of the foundations.

The following earthworks quantities have been estimated for the construction of the proposed attenuation basins, attenuation swales, drainage ditches and stream diversions:

- Total Excavation: 10,000m<sup>3</sup>
- Total Fill: 7,100m<sup>3</sup>

### 2.14. Lighting

New public lighting will be provided for the full extent of the proposed project. The proposed lighting columns are illustrated on drawings **MDT902- RPS-01-XX-DR-Z-GA0001 – GA0015**.

The lighting will be provided by energy efficient light emitting diode (LED) lanterns providing a neutral white output with each mounted on lighting columns that will be designed to the minimum height required. All lanterns will be fully cut-off type to minimise light spill and ensure that light is concentrated on the proposed roads, cycleways and footpaths. The lighting will be designed to the appropriate Lighting Class in compliance with BS 5489-1: Code of Practice for the Design of Road Lighting.

All cables for the lighting installation will be ducted underground.

### 2.15. Site Clearance

The site shall be cleared of any obstructions to the construction of the project.

Existing buildings and polytunnels currently used for horticulture purposes will be demolished between approximately Ch. 0+050 to Ch. 0+150.

The following lengths of existing walls are to be removed:

- Approximately 23m of stone wall to be removed at R403 Clane Road.
- Approximately 92m of stone and blockwork walls to be removed at Newtown Road.

An Arboricultural Survey was carried out in accordance with BS5837:2012 *Trees in Relation to design, demolition and construction* for a study area covering the full extent of the proposed Project. Following completion of the survey, a Tree Constraints Plan and a Tree Schedule were produced identifying the locations of the trees, their assessment category, their crown spreads and their Root Protection Areas (RPAs). A check was carried out to confirm that no trees within the study area were subject to any statutory designations e.g. Tree Protection Orders.

Subsequently an Arboricultural Impact Assessment (AIA) was carried out to evaluate the impact of the proposed project on the trees in the study area and determine required tree removals, required pruning works and recommended measures to mitigate impacts. A Tree Protection and Removal Plan was produced identifying the trees to be removed, trees to be retained and recommended locations of temporary tree protection fencing. A Tree Removal Schedule was also produced listing the trees to be removed.

The AIA has identified the following quantities of trees and hedgerows that require removal:

- Individual Trees: 126 No.
- Groups of Trees: 4,446 m<sup>2</sup>
- Length of Hedgerow: 445 m
- Scrub: 135 m<sup>2</sup>

The trees protection and removal plan are illustrated on drawings **MDT0902-RPS-01-XX-DR-Z-LA1000-LA1007**.

No contaminated land was identified during the ground investigation works.

### 2.16. Fencing

The proposed fencing and environmental barrier design is illustrated on drawings **MDT0902-RPS-01-XX-DR-Z-FE0000-FE0007**.

Mammal-resistant fencing will be required to prevent badgers and otter crossing the new roadway and guide them to the proposed mammal underpasses and mammal ledges in box culverts. The specification for mammal-resistant fencing for badgers and otters is outlined in the NRA “Guidelines for the Treatment of Badgers prior to the construction of National Road Schemes” and “Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes” respectively.

The mammal resistant fencing will be constructed as per TII standard details [CC-SCD-00319](#) or [CC-SCD-00324](#). At some locations it will be necessary to incorporate mammal-resistant measures into the construction of the proposed noise barriers and security fencing.

Where mammal-resistant measures are not required, boundary fencing for the project will generally be timber post and rails fence as per TII standard details [CC-SCD-00301](#).

Paladin style security fencing is proposed where required to prevent unauthorised access such as around proposed attenuation basins.

Steel field gates will be provided where required for landowner accesses and maintenance accesses. These gates will be constructed as per TII standard details [CC-SCD-00309](#) (steel single field gate) and [CC-SCD-00310](#) (steel double field gate). Paladin style security gates are proposed where required to prevent unauthorised access. At some locations it will be necessary to incorporate mammal-resistant measures into the construction of the proposed gates.

### 2.17. Landscaping

A preliminary landscape design has been prepared for the scheme and is illustrated on drawings **MDT0902-RPS-01-XX-DR-Z-LA0000-LA0008**. A detailed Landscape Design Plan will be prepared at the detailed design stage.

The landscape design for the Celbridge to Hazelhatch Mobility Corridor was developed, having regard for the baseline landscape character and to mitigate adverse landscape and visual effects. The scheme features native species woodland and hedgerow planting along with standard trees and was designed to link in with existing retained vegetation. The proposed Scheme as a whole sought to minimise vegetation losses. The landscape scheme details serve to enhance biodiversity and incorporate sustainable drainage features.

Where the drainage bio-retention trenches are proposed, trees will be planted at circa 25m spacing within the grassed verge between the proposed road and cycleways. It is also proposed to provide tree and vegetation planting in other available green spaces, so long as it does not impact on sightlines and safe operation of the scheme, or maintenance requirements.

The proposed planting is as follows:

Standard Trees: 219 No.

Hedge (linear metres): 2,207m

Woodland (square metres): 7,152m<sup>2</sup>

Woodland (damp conditions, square metres): 4,191m<sup>2</sup>

Shrub mix near overhead lines (square metres): 1,411m<sup>2</sup>

## 2.18. Construction of the Proposed Development

### 2.18.1. Site Access

The site will likely be accessible from each existing road that interfaces with the project.

It is expected that HGV site access, e.g. for import of earthworks material, shall generally be limited to the R403 Clane Road for site access north of the River Liffey, and the R405 Hazelhatch Road for site access south of the river.

### 2.18.2. Compound

It is proposed that main compound will be located on the south east side of Newtown Road between approximately Ch. 0+425 to Ch. 0+545. This compound will include welfare facilities and vehicle parking for site staff and will allow for the storage of materials. Temporary land take has been included to accommodate this compound and the compound will remain in place for the duration of the works. The compound will have appropriate levels of security. The Contractor will be required to manage parking and deliveries at the compound and other areas in such a manner as to ensure that there is no obstruction to general traffic or sightlines during construction.

It is likely that an additional smaller compound will be required for the site to the north of the River Liffey. Also, localised welfare facilities and vehicle parking for site staff may be provided along the scheme.

Following completion of the proposed scheme, the site compounds will be decommissioned and all materials removed from the site. The temporary land take will be returned back to its original use.

The expected locations of the site compounds are indicated on the drawings **MDT0902-RPS-01-XX-DR-Z-LH0001-LH0003**.

### 2.18.3. Advance Works

Kildare County Council may decide for some works to be carried out under advance works contracts. These works could include:

- Archaeological test trenching
- Site clearance including demolition of structures and vegetation/ tree removal
- Invasive species management
- Boundary fencing
- Utilities diversions
- Site compound set-up
- Natural catchment drainage including watercourse culverts and flood relief measures
- Landowner access arrangements.

## 2.18.4. Main Construction

It is expected that the bridge construction will begin early in the programme due to the need for construction space in the area of Attenuation Pond 2. This will include construction of working platforms for operation of cranes. The working platforms will likely be constructed of stone fill and will be located outside the extent of the fluvial flooding from the River Liffey.

The earthworks for the remainder of the project will predominately involve stripping topsoil and subsequent import, laying and compaction of embankment fill. As the earthworks does not include significant cuttings, dewatering of excavations will generally not be required. However, suitable sediment and erosion controls will be implemented for the runoff from the earthworks to ensure that the sediment load in water discharging to the receiving watercourses is kept below permissible levels.

## 2.18.5. Construction Works in Proximity to River Liffey

Proposed construction works in proximity to the River Liffey include:

- Bridge construction including temporary working platform for crane operation
- Construction of earthworks embankments approaching bridge crossing
- Construction of drainage attenuation basins
- Drainage outfalls construction
- Construction of foul sewer pipes and manholes for potential future use.

The northern bridge abutment has been set back a minimum of 12 metres from the top of northern river bank. The minimum distance between the southern bridge abutment and the top of the southern river bank is approximately 9.5 metres. It is considered that these set back distances are sufficient to allow the bridge foundations and abutments to be constructed without impacting the river banks. There is also sufficient space to construct the proposed foul sewer pipes and manholes without impacting the river banks.

The proposed bridge abutments, bridge foundations, temporary working platform, earthworks embankments, drainage attenuation basins, and foul sewers, are all sited outside the River Liffey's predicted 0.1% AEP flood extents. The drainage outfalls will encroach areas which may be prone to fluvial flooding, however, these works can be timed to take place when the river's water levels are low.

Due to potential ingress of groundwater, excavations for construction of bridge foundations, drainage outfalls, and foul sewers, may require dewatering. The water extracted from the excavations would likely be discharged to the river. Sediment control measures would be implemented to reduce the sediment load in this water prior to discharging to the watercourse. This could include fitting silt bags to outlet pipes. When the water flows through these silt bags, the tightly woven fabric traps sediment particles down to a size of 100 microns ( $\mu\text{m}$ ). Once the bag is filled with sediment it will be removed and replaced. **Figure 2-2** illustrates an example of a silt bag installed on an outlet pipe.



**Figure 2-2: Typical Silt Bag**

Sediment control measures will also be implemented to prevent laden surface water runoff from earthworks reaching the river. This could include silt fences which comprise a geotextile filter fabric installed in the path of sheet flow run-off to filter out heavy sediments. Posts support the filter fabric and the fabric itself is buried in the ground to ensure sediment is trapped behind it and doesn't breach the fence. The selection of the type of filter fabric depends on the expected volume of run-off and the characteristics of the sediment. It is sized to retain sediment particles but also have openings large enough to permit water to drain through and avoid clogging. When silt fences are used as sediment control measures, they will be subject to regular rigorous inspections to ensure they remain well constructed and functional. Any silt trapped during rainfall events will be promptly removed and any damage to the fences will be repaired to ensure they continue to function as effective silt barriers. **Figure 2-3** illustrates an example of a silt fence.



**Figure 2-3: Typical Silt Fence**

### 2.18.6. Construction Timeline

It is estimated that the overall duration of the construction programme will be approximately 24 months. The exact sequencing of the works will be dictated by the Contractor's methodology and programme.

The sequence of works is expected to be as follows, noting that many of these elements will progress in parallel:

- Establish site compounds
- Site clearance and fencing
- Demolition works
- Bridge Construction
- Drainage culverts construction
- Earthworks
- Drainage and utilities works
- Road pavement construction
- Cycle tracks and footpaths construction
- Landscaping works
- Signage, road markings, lighting and traffic signals works

### 2.18.7. Hours of Works

Construction activities will be undertaken during daylight hours. It is proposed that the normal permitted working times will be 07.00 to 19.00 hours Monday to Friday and 08.00 to 16.30 hours on Saturdays, with no

working on Sundays and Public Holidays, unless otherwise agreed between the Contractor and the local authority (Kildare County Council).

Works other than the pumping out of excavations, security and emergency works will not be undertaken outside these working hours without the written permission of the local authority. This permission, if granted, can be withdrawn at any time should the working regulations be breached.

There are certain works that may benefit from being undertaken outside of normal working hours e.g. delivery and lifting of bridge beams or any other works that require traffic management on existing roads. The bridge beams will be manufactured off-site but will need to be craned into position. This activity will benefit from being undertaken outside of normal working hours. Temporary lighting will be required for any works outside of daylight hours and details on temporary lighting requirements are provided in **Section 2.18.8** below.

### 2.18.8. Site Lighting

Site lighting will typically be provided by tower mounted temporary portable construction floodlights. The floodlights will be cowled and angled downwards to minimise light spillage outside of works areas and to surrounding properties. Lighting will be provided with the minimum luminosity sufficient for safety and security purposes and will be shut off at night when not in use or when works cease at the end of the day in order to minimise the effects of light pollution and disturbance to nocturnal species.

## 2.19. Operational Phase

### 2.19.1. Maintenance of Bridge Structure

The use of weathering steel for the fabrication of the steel plate girders will ensure that maintenance painting will not be required over the lifetime of the structure. The deck surfacing will need maintenance and replacement after 20 years.

As noted in **Section 2.6**, the integral bridge design does not require expansion joint or bridge bearings, significantly reducing the maintenance requirements for the structure.

### 2.19.2. Maintenance of Drainage

The vegetated attenuation systems (basins and swales) will need regular inspection as the growth of vegetation will need to be inspected and controlled to ensure the system continues to operate as designed.

Inspections will be carried out at regular intervals and after any significant storm events (greater than a 1-in-1 year event) to check for signs of erosion or flooding, which would indicate whether the system has been affected by the storm. The maintenance regime will ensure that the hydraulic and treatment performance of the ponds is operating as designed.

Any sediment which is not collected upstream of the ponds is likely to settle in the base of the retention pond. This sediment, along with any plant waste, will be removed with care to avoid damage to the pond liner (if part of the pond design) and any vegetation. Information will be provided to operatives on the presence and depth of liners and on the existence of any depth markers. Consideration will be given to the impact that disturbance of the sediment will have on the short-term migration of fines and contaminants from the system and maintenance operations planned accordingly.

Sediment removal will take place at least every ten-years, but this will vary by location and shall be determined by inspection during operation. The removal may need to be phased to protect the existing vegetation. As the ponds are designed to collect and treat contaminants associated with run-off, the area in and around the pond will be considered contaminated and the maintenance regime will take account of this during the disposal of any sediment or plant waste from the ponds, as well as the de-contamination of the pond when it has reached the end of its useful life.

The hydrocarbon interceptors' maintenance will be carried out in accordance with the manufacturer's recommendations and BS EN 858-2:2003 Separator systems for light liquids (e.g. oil and petrol) – Part 2.

It is normally recommended that cleaning of the interceptor takes place every three to six months, but this may vary depending on location and catchment area. Additional cleaning and maintenance will be undertaken after any major events that may have caused additional debris to collect in the system.

The regular maintenance schedule will include, but not be limited to:

- Check the integrity of the interceptor and all its mechanical parts;
- Inspect the filters and repair or replace, where required;
- Assess the volume of contaminants collected in the tank;
- Service all electrical systems, interceptor management systems and alarms etc.;
- Have all silt and contaminants removed and disposed in accordance with environmental regulations;
- Keep logs of any inspections, maintenance, incidents, services and contaminant removal activities; and
- Ensure any contaminants are removed and transported in accordance with relevant legislation.

### **2.19.3. Maintenance of Road Pavement**

The new road pavement will require ongoing inspection, testing and maintenance. This will be carried out in accordance with Kildare County Council's pavement management requirements. Temporary traffic management will be provided where required to facilitate inspection, testing and maintenance.

It is expected that the pavement surface course will require to be replaced every 8 to 10 years.

### 3. METHODOLOGY

#### 3.1. Appropriate Assessment Guidance

Both EU and national guidance exists in relation to Member States fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in relation to this assessment has had regard to the following guidance:

- Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. & Fuller, R.J. (2013) *Bird Atlas 2007–11: The Breeding and Wintering Birds of Britain and Ireland*. BTO Books, Thetford;
- CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland*. Chartered Institute of Ecology and Environmental Management. Version 1.2, last Updated April 2023;
- DEHLG (2009, rev. 2010) *Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities*. Department of the Environment, Heritage and Local Government;
- European Commission (EC) (2000) *Communication from the Commission on the Precautionary Principle*. Office for Official Publications of the European Communities, Luxembourg;
- EC (2001) *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC*. Office for Official Publications of the European Communities, Brussels;
- EC (2013) *Interpretation Manual of European Union Habitats*. Version EUR 28. European Communities, Luxembourg;
- EC (2018) *Managing Natura 2000 Sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC*. Office for Official Publications of the European Communities, Luxembourg;
- EC (2021a) (Amended) *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC*. Office for Official Publications of the European Communities, Luxembourg;
- EC (2021b) (Amended) *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. Office for Official Publications of the European Communities, Luxembourg;
- NPWS (2013a) *Ireland’s Summary Report for the period 2008 – 2012 under Article 12 of the Birds Directive*. National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland;
- NPWS (2019a) *The Status of EU Protected Habitats and Species in Ireland*. Volume 1: Summary Overview. Unpublished Report, National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland;
- NPWS (2019b) *The Status of EU Protected Habitats and Species in Ireland. Habitat Assessments* Volume 2. Version 1.0. Unpublished Report, National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland;
- NPWS (2019c) *The Status of EU Protected Habitats and Species in Ireland. Species Assessments* Volume 3, Version 1.0. Unpublished Report, National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland; and
- Office of the Planning Regulator (OPR) (2021) *Appropriate Assessment Screening for Development Management*. Office of the Planning Regulator.

There have been significant changes to AA practice since both the EC (2001, 2021) and the DEHLG (2009, rev. 2010) guidance, arising from practice and rulings in UK, European, and Irish courts. These changes have been addressed in the preparation of this report.

## 3.2. Identifying Relevant European Sites

The identification of relevant European Sites to be included in this report was based on the identification of the Zone of Influence (Zol) of the Proposed Scheme, a Source-Pathway-Receptor (S-P-R) model of effects, and the likely significance of any identified effects.

### 3.2.1. Source-Pathway-Receptor (S-P-R) Model

The likely effects of the Proposed Scheme on any European Site have been assessed using a S-P-R model, where:

- A 'source' is defined as the individual element of the proposed works that has the potential to impact on a European Site, its qualifying features and its conservation objectives.
- A 'pathway' is defined as the means or route by which a source can affect the ecological receptor.
- A 'receptor' is defined as the Special Conservation Interest (SCI) of Special Protection Areas (SPAs) or the Qualifying Interest (QI) of Special Areas of Conservation (SACs) for which conservation objectives have been set for the European Sites being assessed, in addition to any relevant supporting habitat for species listed.

A S-P-R model is a standard tool used in environmental assessment. In order for an effect to be likely, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism results in no likelihood for the effect to occur. The S-P-R model was used to identify the European Sites and their QIs/SCIs, to which the Proposed Scheme could be potentially linked.

The Zol "rules" which have been developed specifically for the Proposed Scheme (see below) were applied with reference to available databases and mapping for the Natura 2000 network. As detailed above, the rules have been defined following a consideration of the potential sources of impact and defining the potential pathways of effects arising from these impacts upon the receptors. If no such pathway existed or the pathway did not extend sufficiently based on scientific analysis or professional judgement to impinge on the European Site (in whole or part) then no pathway for Likely Significant Effects (LSEs) was considered to exist.

In order to inform Stage 1 – Screening Assessment, the following Zol "rules" were used to identify any European Sites that the Proposed Scheme may impart LSEs upon:

1. Any European Sites within the proposed works area of the Proposed Scheme will be automatically considered with regard to potential for LSE. This is to take account of direct impacts and effects.
2. Any European Sites which lie within 200 m straight-line measurement of the Proposed Scheme will be automatically considered with regard to potential for LSE. This is to account for:
  - The potential incursion of construction personnel, vehicles or materials beyond the proposed works areas during construction; and
  - The extent of potential dust-generating effects and pollution from vehicle emissions.
3. Any European Sites which lie within 50 m of the Proposed Scheme will be considered with respect to any vibration disturbance effects with regard to potential for LSE on QI or SCI species during construction and operation.
4. Any European Sites which lie within 500 m of the Proposed Scheme will be considered with respect to any noise disturbance effects with regard to potential for LSE on QI or SCI species during construction and operation.
5. Any European Sites within the same groundwater body as the Proposed Scheme which support QIs/SCIs which are sensitive to hydrological change (flow or quality) will be automatically considered with regard to potential for LSE.
6. Any European Sites downstream of the Proposed Scheme which support QIs/SCIs which are sensitive to hydrological change (flow or quality) will be automatically considered with regard to potential for LSE.
7. Any European Sites within Dublin Bay, which is approximately 40 km downstream, will be automatically considered with regard to potential for LSE.

8. Any European Sites with upstream hydrological connectivity to the Proposed Scheme will be considered with regard to potential for LSE if they support mobile aquatic QI or SCI species which could move through the proposed works area to/from the European Site as part of their lifecycle.
9. Any European Site which supports QI or SCI species which have been shown through desk or field surveys to be present in *ex-situ* habitats within/adjacent to the proposed works area will be considered with regard to potential for LSE.

### 3.2.2. Scoping of European Sites

Following the identification of European Sites within the initial Zol, a secondary scoping was carried out before sites were taken forward to the assessment stage. Disturbance buffers and hydrological and hydrogeological linkages extending from the Proposed Scheme were assessed to determine if pollution sources arising from the Proposed Scheme, used during the construction and operation of the Proposed Scheme, could come into contact with QI/SCI habitats and species.

Where it was deemed that there is potential for one QI or SCI habitat/species from a European Site within the Zol to come into contact with a pollution source, the entire European Site is brought into the assessment stage.

### 3.2.3. Identification of Likely Significant Effects

The Commission's Notice (EC, 2018) advises that the appropriate assessment procedure under Article 6(3) is triggered not by the certainty but by the likelihood of significant effects, arising from plans or projects regardless of their location inside or outside a protected site. Such likelihood exists if significant effects on the site cannot be excluded. The significance of effects should be determined in relation to the specific features and environmental conditions of the site concerned by the plan or project, taking particular account of the site's conservation objectives and ecological characteristics.

The threshold for an LSE is treated in the screening exercise as being above a *de minimis* level<sup>1</sup>. The opinion of the Advocate General in Court of Justice of the European Union (CJEU) case C-258/11 outlines:

*"The requirement that the effect in question be 'significant' exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European Site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill."*

In this report, therefore, 'relevant' European Sites are those within the potential Zol of activities associated with the construction, operation, and maintenance of the Proposed Scheme, where LSE pathways to European Sites were identified through the source-pathway-receptor model.

A significant effect is triggered when:

- There is a probability or a risk of a plan or project having a significant effect on a European Site;
- The plan is likely to undermine the site's conservation objectives;
- A significant effect cannot be excluded on the basis of objective information; and
- Measures to prevent or offset risk [mitigation measures] would be required.

The Screening for Appropriate Assessment (Stage 1) will incorporate the following steps:

- Describing the project or plan;

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<sup>1</sup> Sweetman v. An Bord Pleanála (Court of Justice of the EU, case C-285/11). A *de minimis* effect is a level of risk that is too small to be concerned with when considering ecological requirements of an Annex I habitat or a population of Annex II species present on a European Site necessary to ensure their favourable conservation condition. If low level effects on habitats or individuals of species are judged to be in this order of magnitude and that judgment has been made in the absence of reasonable scientific doubt, then those effects are not considered to be likely significant effects.

- Identifying the European Sites potentially affected by the project or plan;
- Determining whether a project or plan is directly connected with or necessary to the conservation management of any European Sites;
- Identifying and describing any potential effects of the project or plan on European Sites, alone, in combination and cumulatively with other plans/projects; and
- Assessing the likelihood of significant effects on European Sites.

### 3.3. Desk Study

A desk study was completed to assess the potential for all QIs and SCIs of European Sites to occur, given their ecological requirements, as identified by Balmer *et al.* (2013) for SCIs, and the NPWS for QIs (NPWS, 2019a, b, c).

SCI birds and mobile QI species can travel many kilometres from their core areas and a desk study assessed the potential presence of such species beyond the European Sites for which they are QIs/SCIs. The desk study had particular regard for the following sources:

- Environmental Protection Agency (EPA) online interactive mapping tools (<https://gis.epa.ie/EPAMaps>) and (<https://www.catchments.ie/maps/>) for water quality data including surface and ground water quality status, and river catchment boundaries;
- Tabulated lists of SCIs and QIs for all European Sites in the Republic of Ireland;
- Information on ranges of mobile QI populations in Volume 1 of NPWS' Status of EU Protected Habitats and Species in Ireland (NPWS, 2019a), and associated digital shapefiles obtained from the NPWS Research Branch;
- Information on ranges of mobile SCIs bird populations from Bird Atlas 2007–11 (Balmer *et al.*, 2013), excluding birds of prey whose ranges were determined with reference to Hardey *et al.* (2013);
- Mapping of European Site boundaries and Conservation Objectives for relevant sites in County Dublin and beyond, as relevant, available online from the NPWS;
- Information on wetland sites using BirdWatch Ireland's mapping website for the Irish Wetlands Bird Survey (I-WeBS)<sup>2</sup>;
- Any local surveys of flora, fauna, and habitat available using the Heritage Councils mapping website (<https://heritagemaps.ie/WebApps/HeritageMaps/index.html>);
- Distribution records for QI and SCI species of European Sites held online by the National Biodiversity Data Centre (NBDC)<sup>3</sup>;
- Information on groundwater aquifers, recharge, and vulnerability available from the online database of Geological Survey Ireland (GSI)<sup>4</sup>; and
- Boundaries for catchments with confirmed or potential freshwater pearl mussel (FPM) *Margaritifera* populations in GIS format available online from the NPWS.

### 3.4. Field Study

To inform the assessment, detailed field surveys were undertaken by qualified professional ecologists. Field surveys were undertaken with reference to the NRA's (2009a) *Ecological Surveying Techniques for*

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<sup>2</sup> (<https://bwi.maps.arcgis.com/apps/View/index.html?appid=1043ba01fcb74c78bc75e306eda48d3a>) Accessed October 2024.

<sup>3</sup> Assessing records up to 10 years old (from date of search), for an area of 5 km from the proposed Project site. Available online at: <https://maps.biodiversityireland.ie/Map> Accessed October 2024.

<sup>4</sup> Available online at <https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0ab2fbde2aaac3c228>. Accessed October 2024.

*Protected Flora and Fauna during the Planning of National Road Schemes* in relation to appropriate survey seasons and methods for relevant protected species.

A site survey was carried out on 12 and 13 June 2023 to classify habitats using the Heritage Council's habitat classification system (Fossitt, 2000) for terrestrial habitats occurring within the footprint of the Proposed Scheme. A follow-up habitat survey was carried out from 29 April to 2 May 2024 to update the baseline. The mapping of habitats had cognisance of the Heritage Council's mapping methodology (Smith *et al.*, 2011). The information gained from the survey was used to describe habitat features, and to direct further habitat and species-specific survey work to inform this assessment. 'Target Notes' were recorded as necessary on maps in the field to identify the location of additional ecological features.

Habitat surveys recorded species using an ordinal abundance scale, the DAFOR scale, as detailed in Smith *et al.* (2011). Indicator species for different habitat types or conditions and rare or declining species identified on relevant Red Lists (Wyse Jackson *et al.*, 2016; Lockhart *et al.*, 2012) were also noted, if present.

Vascular plant nomenclature follows that of the Botanical Society of Britain and Ireland (BSBI) 'Complete list of taxon names from the BSBI's database'. As such, any name changes, including those outlined in Stace (2019) are not included. Any bryophyte nomenclature follows the British Bryological Society (Atherton *et al.*, 2010).

### 3.5. Limitations

The receiving environment (i.e. baseline condition) may naturally vary through seasons and between years (NRA, 2009b). This limitation is acknowledged and incorporated into the assessment.

Sources of desk study information are neither exhaustive nor necessarily easily available, and a reasoned effort was made to obtain ecological data in the public domain to inform the description of the receiving environment and its assessment. Additional information, not in the public domain, is likely to exist. This limitation is acknowledged and incorporated into the assessment.

## 4. RECEIVING ENVIRONMENT

This section details the desk study and field survey results, in order to describe the relevant receiving environment of the Proposed Scheme. The relevant receiving environment relates to anything that may be directly or indirectly related to the QIs/SCIs of relevant European Sites.

### 4.1. European Sites

In order to determine the potential of any LSEs, it is necessary to identify the Zol of the Proposed Scheme and the European Sites therein. The Zol of the Proposed Scheme is the geographical area over which the Proposed Scheme could affect the receiving environment in a way that could have LSEs directly or indirectly on European Site(s). The Zol is established using the Source-Pathway-Receptor (S-P-R) model (see the rules set out in **Section 3.2.1**) which is a standard tool used in environmental assessment. In order for an effect to be likely, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism results in no likelihood for the effect to occur. European Sites identified within the initial Zol of the Proposed Scheme are detailed in **Table 4-1** and mapped in **Figure 4-1**.

**Table 4-1: European Sites within the Zone of Influence of the Proposed Scheme**

| European site                         | QI/SCI                                                                                                                                     | Conservation Objective                                                                                                                                                                        | Location Relative to Proposed Scheme                                                                  |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Rye Water Valley/Carlton SAC (001398) | Petrifying springs with tufa formation ( <i>Cratoneurion</i> )* [7220]                                                                     | To restore the favourable conservation condition of Petrifying springs with tufa formation ( <i>Cratoneurion</i> )* in Rye Water Valley/Carlton SAC.                                          | 4.7 km north, on a tributary of the River Liffey with a confluence downstream of the Proposed Scheme. |
|                                       | <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) [1014]                                                                               | To restore the favourable conservation condition of Narrow-mouthed Whorl Snail <i>Vertigo angustior</i> in Rye Water Valley/Carlton SAC.                                                      |                                                                                                       |
|                                       | <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) [1016]                                                                                | To maintain the favourable conservation condition of Desmoulin's Whorl Snail <i>Vertigo moulinsiana</i> in Rye Water Valley/Carlton SAC.                                                      |                                                                                                       |
| Wicklow Mountains SAC (002122)        | Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> ) [3110]                               | To maintain the favourable conservation condition of Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> ) in Wicklow Mountains SAC.          | 13.7 km south-east and over 65 km upstream of the Proposed Scheme, upstream of Poulaphouca Reservoir. |
|                                       | Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoeto-Nanojuncetea</i> [3130] | No available Conservation Objectives.                                                                                                                                                         |                                                                                                       |
|                                       | Natural dystrophic lakes and ponds [3160]                                                                                                  | To maintain the favourable conservation condition of Natural dystrophic lakes and ponds in Wicklow Mountains SAC                                                                              |                                                                                                       |
|                                       | Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130]                                                                       | To maintain the favourable conservation condition of Calaminarian grasslands of the <i>Violetalia calaminariae</i> in Wicklow Mountains SAC                                                   |                                                                                                       |
|                                       | Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010]                                                                             | To restore the favourable conservation condition of Northern Atlantic wet heaths with <i>Erica tetralix</i> in Wicklow Mountains SAC                                                          |                                                                                                       |
|                                       | European dry heaths [4030]                                                                                                                 | To restore the favourable conservation condition of European dry heaths in Wicklow Mountains SAC                                                                                              |                                                                                                       |
|                                       | Alpine and Boreal heaths [4060]                                                                                                            | To restore the favourable conservation condition of Alpine and Boreal heaths in Wicklow Mountains SAC                                                                                         |                                                                                                       |
|                                       | Siliceous scree of the montane to snow levels ( <i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i> ) [8110]                    | To restore the favourable conservation condition of Siliceous scree of the montane to snow levels ( <i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i> ) in Wicklow Mountains SAC |                                                                                                       |

| European site                      | QI/SCI                                                                                                                                 | Conservation Objective                                                                                                                                                                                       | Location Relative to Proposed Scheme                                                                              |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Wicklow Mountains SPA (004040)     | Blanket bogs (* if active bog) [7130]                                                                                                  | To restore the favourable conservation condition of Blanket bogs (* if active bog) in Wicklow Mountains SAC                                                                                                  | 17.1 km south-east and over 65 km upstream of the Proposed Scheme, upstream of Poulaphouca Reservoir.             |
|                                    | Calcareous rocky slopes with chasmophytic vegetation [8210]                                                                            | To restore the favourable conservation condition of Calcareous rocky slopes with chasmophytic vegetation in Wicklow Mountains SAC                                                                            |                                                                                                                   |
|                                    | Siliceous rocky slopes with chasmophytic vegetation [8220]                                                                             | To restore the favourable conservation condition of Siliceous rocky slopes with chasmophytic vegetation in Wicklow Mountains SAC                                                                             |                                                                                                                   |
|                                    | Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]                                                 | To restore the favourable conservation condition of Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles in Wicklow Mountains SAC                                                 |                                                                                                                   |
|                                    | Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] | To restore the favourable conservation condition of Species-rich <i>Nardus</i> grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) in Wicklow Mountains SAC |                                                                                                                   |
|                                    | Otter <i>Lutra lutra</i> [1355]                                                                                                        | To maintain the favourable conservation condition of Otter in Wicklow Mountains SAC.                                                                                                                         |                                                                                                                   |
| Poulaphouca Reservoir SPA (004063) | Merlin ( <i>Falco columbarius</i> ) [A098]                                                                                             | To maintain the favourable conservation condition of Merlin in Wicklow Mountains SPA                                                                                                                         | 15.8 km south-east and approx. 64.4 km upstream of the Proposed Scheme.                                           |
|                                    | Peregrine ( <i>Falco peregrinus</i> ) [A103]                                                                                           | To maintain the favourable conservation condition of Peregrine in Wicklow Mountains SPA                                                                                                                      |                                                                                                                   |
| North Dublin Bay SAC (000206)      | Greylag Goose ( <i>Anser anser</i> ) [A043]                                                                                            | To restore the favourable conservation condition of Greylag Goose in Poulaphouca Reservoir SPA                                                                                                               | 20.1 km east, downstream of the Proposed Scheme and connected directly to the River Liffey and to the Dublin GWB. |
|                                    | Lesser Black-backed Gull ( <i>Larus fuscus</i> ) [A183]                                                                                | To maintain the favourable conservation condition of Lesser Black-backed Gull in Poulaphouca Reservoir SPA                                                                                                   |                                                                                                                   |
|                                    | Mudflats and sandflats not covered by seawater at low tide [1140]                                                                      | To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in North Dublin Bay SAC                                                                      |                                                                                                                   |
|                                    | Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> ) [1330]                                                               | To maintain the favourable conservation condition of Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> ) in North Dublin Bay SAC                                                               |                                                                                                                   |
|                                    | Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) [1410]                                                                       | To maintain the favourable conservation condition of Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) in North Dublin Bay SAC                                                                       |                                                                                                                   |
|                                    | <i>Petalophyllum ralfsii</i> (Petalwort) [1395]                                                                                        | To maintain the favourable conservation condition of Petalwort in North Dublin Bay SAC                                                                                                                       |                                                                                                                   |
|                                    | Annual vegetation of drift lines [1210]                                                                                                | To restore the favourable conservation condition of Annual vegetation of drift lines in North Dublin Bay SAC.                                                                                                |                                                                                                                   |
|                                    | <i>Salicornia</i> and other annuals colonising mud and sand [1310]                                                                     | To restore the favourable conservation condition of <i>Salicornia</i> and other annuals colonising mud and sand in North Dublin Bay SAC.                                                                     |                                                                                                                   |

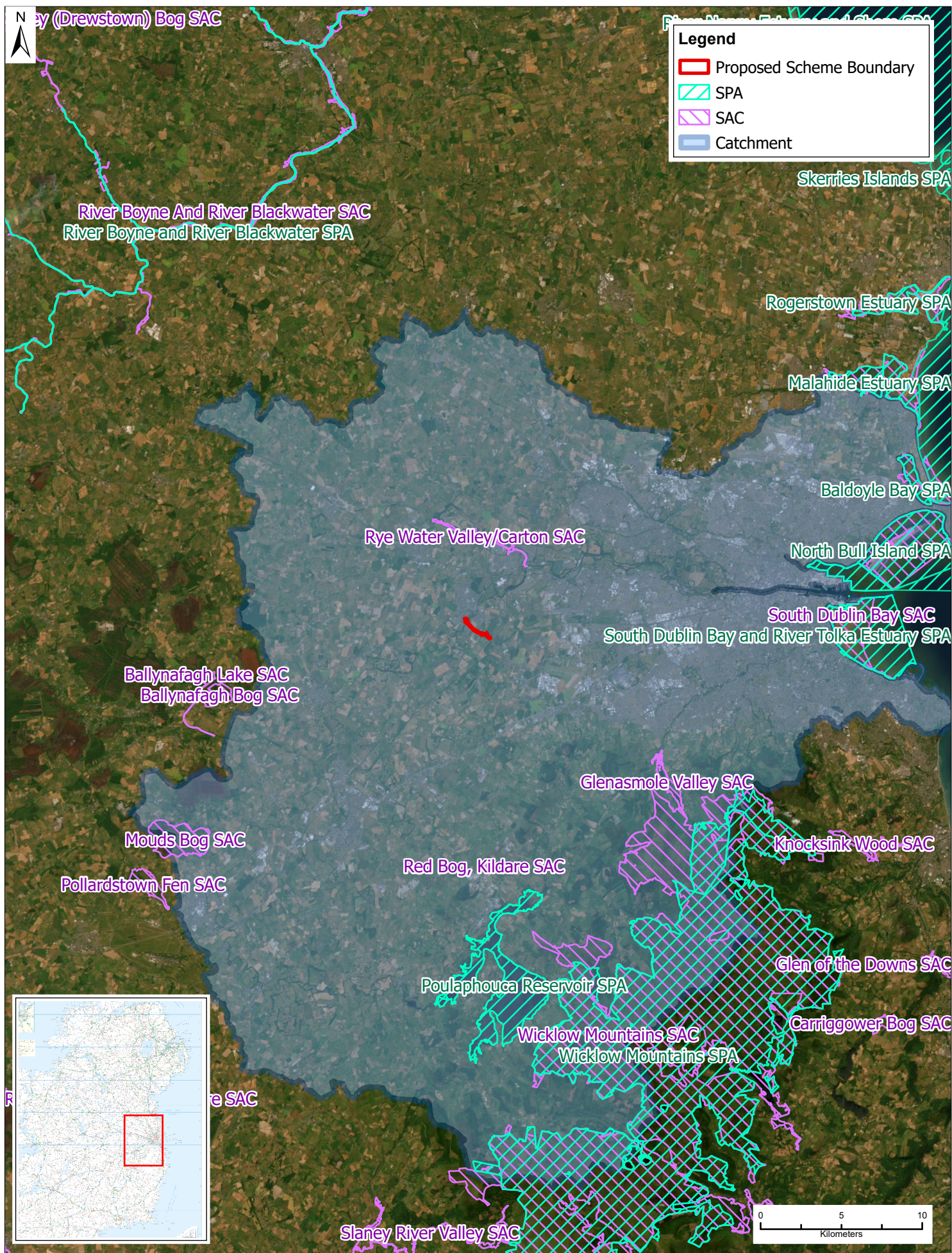
| European site                                         | QI/SCI                                                                                 | Conservation Objective                                                                                                                                       | Location Relative to Proposed Scheme                                                                     |
|-------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                                                       | Embryonic shifting dunes [2110]                                                        | To restore the favourable conservation condition of Embryonic shifting dunes in North Dublin Bay SAC.                                                        |                                                                                                          |
|                                                       | Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] | To restore the favourable conservation condition of Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) in North Dublin Bay SAC. |                                                                                                          |
|                                                       | Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]                     | To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation (grey dunes) in North Dublin Bay SAC.                     |                                                                                                          |
|                                                       | Humid dune slacks [2190]                                                               | To restore the favourable conservation condition of Humid dune slacks in North Dublin Bay SAC.                                                               |                                                                                                          |
| South Dublin Bay SAC (000210)                         | Mudflats and sandflats not covered by seawater at low tide [1140]                      | To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC.                     | 20.8 km east, downstream of the Proposed Scheme and connected to the River Liffey and to the Dublin GWB. |
|                                                       | Annual vegetation of drift lines [1210]                                                | No available Conservation Objectives.                                                                                                                        |                                                                                                          |
|                                                       | Salicornia and other annuals colonising mud and sand [1310]                            | No available Conservation Objectives.                                                                                                                        |                                                                                                          |
|                                                       | Embryonic shifting dunes [2110]                                                        | No available Conservation Objectives.                                                                                                                        |                                                                                                          |
| South Dublin Bay and River Tolka Estuary SPA (004024) | Light-bellied Brent Goose ( <i>Branta bernicla hrota</i> ) [A046]                      | To maintain the favourable conservation condition of Light-bellied Brent Goose in South Dublin Bay and River Tolka Estuary SPA.                              | 20.8 km east, downstream of the Proposed Scheme and connected to the River Liffey and to the Dublin GWB. |
|                                                       | Oystercatcher ( <i>Haematopus ostralegus</i> ) [A130]                                  | To maintain the favourable conservation condition of Oystercatcher in South Dublin Bay and River Tolka Estuary SPA.                                          |                                                                                                          |
|                                                       | Ringed Plover ( <i>Charadrius hiaticula</i> ) [A137]                                   | To maintain the favourable conservation condition of Ringed Plover in South Dublin Bay and River Tolka Estuary SPA.                                          |                                                                                                          |
|                                                       | Knot ( <i>Calidris canutus</i> ) [A143]                                                | To maintain the favourable conservation condition of Knot in South Dublin Bay and River Tolka Estuary SPA.                                                   |                                                                                                          |
|                                                       | Sanderling ( <i>Calidris alba</i> ) [A144]                                             | To maintain the favourable conservation condition of Sanderling in South Dublin Bay and River Tolka Estuary SPA.                                             |                                                                                                          |
|                                                       | Dunlin ( <i>Calidris alpina</i> ) [A149]                                               | To maintain the favourable conservation condition of Dunlin in South Dublin Bay and River Tolka Estuary SPA.                                                 |                                                                                                          |
|                                                       | Bar-tailed Godwit ( <i>Limosa lapponica</i> ) [A157]                                   | To maintain the favourable conservation condition of Bar-tailed Godwit in South Dublin Bay and River Tolka Estuary SPA.                                      |                                                                                                          |
|                                                       | Redshank ( <i>Tringa totanus</i> ) [A162]                                              | To maintain the favourable conservation condition of Redshank in South Dublin Bay and River Tolka Estuary SPA.                                               |                                                                                                          |
|                                                       | Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) [A179]                         | To maintain the favourable conservation condition of Black-headed Gull in South Dublin Bay and River Tolka Estuary SPA.                                      |                                                                                                          |
|                                                       | Roseate Tern ( <i>Sterna dougalli</i> ) [A192]                                         | To maintain the favourable conservation condition of Roseate Tern in South Dublin Bay and River Tolka Estuary SPA.                                           |                                                                                                          |
|                                                       | Common Tern ( <i>Sterna hirundo</i> ) [A193]                                           | To maintain the favourable conservation condition of Common Tern in South Dublin Bay and River Tolka Estuary SPA.                                            |                                                                                                          |

| European site                  | QI/SCI                                                            | Conservation Objective                                                                                                                                                                                                                                                                                                            | Location Relative to Proposed Scheme                                                                                                                              |
|--------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | Arctic Tern ( <i>Sterna paradisaea</i> ) [A194]                   | To maintain the favourable conservation condition of Arctic Tern in South Dublin Bay and River Tolka Estuary SPA.                                                                                                                                                                                                                 |                                                                                                                                                                   |
|                                | Wetland and Waterbirds [A999]                                     | To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it.                                                                                                                          |                                                                                                                                                                   |
|                                | Grey Plover ( <i>Pluvialis squatarola</i> ) [A141]                | Grey Plover is proposed for removal from the list of Special Conservation Interests for South Dublin Bay and River Tolka Estuary SPA.                                                                                                                                                                                             |                                                                                                                                                                   |
| Mouds Bog SAC (002331)         | Active raised bogs* [7110]                                        | To restore the favourable conservation condition of Active raised bogs in Mouds Bog SAC.                                                                                                                                                                                                                                          | 21.1 km southwest. Partially within the Liffey and Dublin Bay Catchment, upstream of the Proposed Scheme. A very small proportion (>2%) is within the Dublin GWB. |
|                                | Degraded raised bogs still capable of natural regeneration [7120] | The long-term aim for Degraded raised bogs still capable of natural regeneration is that its peat-forming capability is re-established; therefore, the conservation objective for this habitat is inherently linked to that of Active raised bogs (7110) and a separate conservation objective has not been set in Mouds Bog SAC. |                                                                                                                                                                   |
|                                | Depressions on peat substrates of the Rhynchosporion [7150]       | Depressions on peat substrates of the Rhynchosporion is an integral part of good quality active raised bogs (7110) and thus a separate conservation objective has not been set for the habitat in Mouds Bog SAC.                                                                                                                  |                                                                                                                                                                   |
| North Bull Island SPA (004006) | Light-bellied Brent Goose ( <i>Branta bernicla hrota</i> ) [A046] | To maintain the favourable conservation condition of Light-bellied Brent Goose in North Bull Island SPA.                                                                                                                                                                                                                          | 23.2 km east, downstream of the Proposed Scheme and connected to the River Liffey and to the Dublin GWB.                                                          |
|                                | Shelduck ( <i>Tadorna tadorna</i> ) [A048]                        | To maintain the favourable conservation condition of Shelduck in North Bull Island SPA.                                                                                                                                                                                                                                           |                                                                                                                                                                   |
|                                | Teal ( <i>Anas crecca</i> ) [A052]                                | To maintain the favourable conservation condition of Teal in North Bull Island SPA.                                                                                                                                                                                                                                               |                                                                                                                                                                   |
|                                | Pintail ( <i>Anas acuta</i> ) [A054]                              | To maintain the favourable conservation condition of Pintail in North Bull Island SPA.                                                                                                                                                                                                                                            |                                                                                                                                                                   |
|                                | Shoveler ( <i>Anas clypeata</i> ) [A056]                          | To maintain the favourable conservation condition of Shoveler in North Bull Island SPA.                                                                                                                                                                                                                                           |                                                                                                                                                                   |
|                                | Oystercatcher ( <i>Haematopus ostralegus</i> ) [A130]             | To maintain the favourable conservation condition of Oystercatcher in North Bull Island SPA.                                                                                                                                                                                                                                      |                                                                                                                                                                   |
|                                | Golden Plover ( <i>Pluvialis apricaria</i> ) [A140]               | To maintain the favourable conservation condition of Golden Plover in North Bull Island SPA.                                                                                                                                                                                                                                      |                                                                                                                                                                   |
|                                | Grey Plover ( <i>Pluvialis squatarola</i> ) [A141]                | To maintain the favourable conservation condition of Grey Plover in North Bull Island SPA.                                                                                                                                                                                                                                        |                                                                                                                                                                   |
|                                | Knot ( <i>Calidris canutus</i> ) [A143]                           | To maintain the favourable conservation condition of Knot in North Bull Island SPA.                                                                                                                                                                                                                                               |                                                                                                                                                                   |
|                                | Sanderling ( <i>Calidris alba</i> ) [A144]                        | To maintain the favourable conservation condition of Sanderling in North Bull Island SPA.                                                                                                                                                                                                                                         |                                                                                                                                                                   |
|                                | Dunlin ( <i>Calidris alpina</i> ) [A149]                          | To maintain the favourable conservation condition of Dunlin in North Bull Island SPA.                                                                                                                                                                                                                                             |                                                                                                                                                                   |
|                                | Black-tailed Godwit ( <i>Limosa limosa</i> ) [A156]               | To maintain the favourable conservation condition of Black-tailed Godwit in North Bull Island SPA.                                                                                                                                                                                                                                |                                                                                                                                                                   |
|                                | Bar-tailed Godwit ( <i>Limosa lapponica</i> ) [A157]              | To maintain the favourable conservation condition of Bar-tailed Godwit in North Bull Island SPA.                                                                                                                                                                                                                                  |                                                                                                                                                                   |
|                                | Curlew ( <i>Numenius arquata</i> ) [A160]                         | To maintain the favourable conservation condition of Curlew in North Bull Island SPA.                                                                                                                                                                                                                                             |                                                                                                                                                                   |

| European site                     | QI/SCI                                                         | Conservation Objective                                                                                                                                                            | Location Relative to Proposed Scheme                                                                     |
|-----------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                                   | Redshank ( <i>Tringa totanus</i> ) [A162]                      | To maintain the favourable conservation condition of Redshank in North Bull Island SPA.                                                                                           |                                                                                                          |
|                                   | Turnstone ( <i>Arenaria interpres</i> ) [A169]                 | To maintain the favourable conservation condition of Turnstone in North Bull Island SPA.                                                                                          |                                                                                                          |
|                                   | Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) [A179] | To maintain the favourable conservation condition of Black-headed Gull in North Bull Island SPA.                                                                                  |                                                                                                          |
|                                   | Wetland and Waterbirds [A999]                                  | To maintain the favourable conservation condition of the wetland habitat in North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it. |                                                                                                          |
| North-West Irish Sea SPA (004236) | Red-throated Diver ( <i>Gavia stellata</i> ) [A001]            | To maintain the favourable conservation condition of red-throated diver at North-west Irish Sea SPA.                                                                              | 25.1 km east, downstream of the Proposed Scheme and connected to the River Liffey and to the Dublin GWB. |
|                                   | Great Northern Diver ( <i>Gavia immer</i> ) [A003]             | To maintain the favourable conservation condition of great northern diver at North-west Irish Sea SPA.                                                                            |                                                                                                          |
|                                   | Manx Shearwater ( <i>Puffinus puffinus</i> ) [A013]            | To maintain the favourable conservation condition of manx shearwater in North-west Irish Sea SPA.                                                                                 |                                                                                                          |
|                                   | Common Scoter ( <i>Melanitta nigra</i> ) [A065]                | To maintain the favourable conservation condition of common scoter at North-west Irish Sea SPA.                                                                                   |                                                                                                          |
|                                   | Little Gull ( <i>Larus minutus</i> ) [A177]                    | To maintain the favourable conservation condition of little gull at North-west Irish Sea SPA.                                                                                     |                                                                                                          |
|                                   | Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) [A179] | To maintain the favourable conservation condition of black-headed gull at North-west Irish Sea SPA.                                                                               |                                                                                                          |
|                                   | Common Gull ( <i>Larus canus</i> ) [A182]                      | To maintain the favourable conservation condition of common gull at North-west Irish Sea SPA.                                                                                     |                                                                                                          |
|                                   | Lesser Black-backed Gull ( <i>Larus fuscus</i> ) [A183]        | To maintain the favourable conservation condition of lesser black-backed gull in North-west Irish Sea SPA.                                                                        |                                                                                                          |
|                                   | Great Black-backed Gull ( <i>Larus marinus</i> ) [A187]        | To maintain the favourable conservation condition of great black-backed gull at North-west Irish Sea SPA.                                                                         |                                                                                                          |
|                                   | Roseate Tern ( <i>Sterna dougallii</i> ) [A192]                | To maintain the favourable conservation condition of roseate tern in North-west Irish Sea SPA.                                                                                    |                                                                                                          |
|                                   | Common Tern ( <i>Sterna hirundo</i> ) [A193]                   | To maintain the favourable conservation condition of common tern in North-west Irish Sea SPA.                                                                                     |                                                                                                          |
|                                   | Arctic Tern ( <i>Sterna paradisaea</i> ) [A194]                | To maintain the favourable conservation condition of Arctic tern in North-west Irish Sea SPA.                                                                                     |                                                                                                          |
|                                   | Little Tern ( <i>Sterna albifrons</i> ) [A195]                 | To maintain the favourable conservation condition of little tern in North-west Irish Sea SPA.                                                                                     |                                                                                                          |
|                                   | Guillemot ( <i>Uria aalge</i> ) [A199]                         | To maintain the favourable conservation condition of guillemot in North-west Irish Sea SPA.                                                                                       |                                                                                                          |
|                                   | Razorbill ( <i>Alca torda</i> ) [A200]                         | To maintain the favourable conservation condition of razorbill in North-west Irish Sea SPA.                                                                                       |                                                                                                          |
|                                   | Fulmar ( <i>Fulmarus glacialis</i> ) [A009]                    | To restore the favourable conservation condition of fulmar in North-west Irish Sea SPA                                                                                            |                                                                                                          |
|                                   | Cormorant ( <i>Phalacrocorax carbo</i> ) [A017]                | To restore the favourable conservation condition of cormorant in North-west Irish Sea SPA                                                                                         |                                                                                                          |
|                                   | Shag ( <i>Phalacrocorax aristotelis</i> ) [A018]               | To restore the favourable conservation condition of shag in North-west Irish Sea SPA                                                                                              |                                                                                                          |
|                                   | Herring Gull ( <i>Larus argentatus</i> ) [A184]                | To restore the favourable conservation condition of herring gull in North-west Irish Sea SPA                                                                                      |                                                                                                          |
|                                   | Kittiwake ( <i>Rissa tridactyl</i> ) [A188]                    | To restore the favourable conservation condition of kittiwake in North-west Irish Sea SPA                                                                                         |                                                                                                          |

| European site                 | QI/SCI                                                                                 | Conservation Objective                                                                                                                                         | Location Relative to Proposed Scheme               |
|-------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
|                               | Puffin ( <i>Fratercula arctica</i> ) [A204]                                            | To restore the favourable conservation condition of puffin in North-west Irish Sea SPA                                                                         |                                                    |
| Baldoyle Bay SAC (000199)     | Mudflats and sandflats not covered by seawater at low tide [1140]                      | To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Baldoyle Bay SAC.                           | 27.1 km northeast and connected to the Dublin GWB. |
|                               | <i>Salicornia</i> and other annuals colonising mud and sand [1310]                     | To maintain the favourable conservation condition of <i>Salicornia</i> and other annuals colonizing mud and sand in Baldoyle Bay SAC.                          |                                                    |
|                               | Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> ) [1330]               | To maintain the favourable conservation condition of Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> ) in Baldoyle Bay SAC                     |                                                    |
|                               | Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) [1410]                       | To maintain the favourable conservation condition of Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) in Baldoyle Bay SAC                             |                                                    |
| Malahide Estuary SAC (000205) | Mudflats and sandflats not covered by seawater at low tide [1140]                      | To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Malahide Estuary SAC.                       | 27.4 km northeast and connected to the Dublin GWB. |
|                               | Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) [1410]                       | To maintain the favourable conservation condition of Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) in Malahide Estuary SAC                         |                                                    |
|                               | <i>Salicornia</i> and other annuals colonising mud and sand [1310]                     | To maintain the favourable conservation condition of <i>Salicornia</i> and other annuals colonising mud and sand in Malahide Estuary SAC.                      |                                                    |
|                               | Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritima</i> ) [1330]               | To restore the favourable conservation condition of Atlantic salt meadows ( <i>Glauco Puccinellietalia maritima</i> ) in Malahide Estuary SAC.                 |                                                    |
|                               | Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] | To restore the favourable conservation condition of Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes') in Malahide Estuary SAC. |                                                    |
|                               | Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]                     | To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in Malahide Estuary SAC.                     |                                                    |
| Malahide Estuary SPA (004025) | Light-bellied Brent Goose ( <i>Branta bernicla hrota</i> ) [A046]                      | To maintain the favourable conservation condition of Light-bellied Brent Goose in Malahide Estuary SPA.                                                        | 27.4 km northeast and connected to the Dublin GWB. |
|                               | Shelduck ( <i>Tadorna tadorna</i> ) [A048]                                             | To maintain the favourable conservation condition of Shelduck in Malahide Estuary SPA.                                                                         |                                                    |
|                               | Pintail ( <i>Anas acuta</i> ) [A054]                                                   | To maintain the favourable conservation condition of Pintail in Malahide Estuary SPA.                                                                          |                                                    |
|                               | Goldeneye ( <i>Bucephala clangula</i> ) [A067],                                        | To maintain the favourable conservation condition of Goldeneye in Malahide Estuary SPA.                                                                        |                                                    |
|                               | Red-breasted Merganser ( <i>Mergus serrator</i> ) [A069]                               | To maintain the favourable conservation condition of Red-breasted Merganser in Malahide Estuary SPA.                                                           |                                                    |
|                               | Great Crested Grebe ( <i>Podiceps cristatus</i> ) [A005]                               | To maintain the favourable conservation condition of Great Crested Grebe in Malahide Estuary SPA.                                                              |                                                    |
|                               | Oystercatcher ( <i>Haematopus ostralegus</i> ) [A130]                                  | To maintain the favourable conservation condition of Oystercatcher in Malahide Estuary SPA.                                                                    |                                                    |
|                               | Golden Plover ( <i>Pluvialis apricaria</i> ) [A140]                                    | To maintain the favourable conservation condition of Golden Plover in Malahide Estuary SPA.                                                                    |                                                    |
|                               | Grey Plover ( <i>Pluvialis squatarola</i> ) [A141]                                     | To maintain the favourable conservation condition of Grey Plover in Malahide Estuary SPA.                                                                      |                                                    |
|                               | Knot ( <i>Calidris canutus</i> ) [A143]                                                | To maintain the favourable conservation condition of Knot in Malahide Estuary SPA.                                                                             |                                                    |

| European site                           | QI/SCI                                                                                                                                               | Conservation Objective                                                                                                                                                           | Location Relative to Proposed Scheme                              |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
|                                         | Dunlin ( <i>Calidris alpina</i> ) [A149]                                                                                                             | To maintain the favourable conservation condition of Dunlin in Malahide Estuary SPA.                                                                                             |                                                                   |
|                                         | Black-tailed Godwit ( <i>Limosa limosa</i> ) [A156]                                                                                                  | To maintain the favourable conservation condition of Black-tailed Godwit in Malahide Estuary SPA.                                                                                |                                                                   |
|                                         | Bar-tailed Godwit ( <i>Limosa lapponica</i> ) [A157]                                                                                                 | To maintain the favourable conservation condition of Bar-tailed Godwit in Malahide Estuary SPA.                                                                                  |                                                                   |
|                                         | Redshank ( <i>Tringa totanus</i> ) [A162]                                                                                                            | To maintain the favourable conservation condition of Redshank in Malahide Estuary SPA.                                                                                           |                                                                   |
|                                         | Wetland and Waterbirds [A999]                                                                                                                        | To maintain the favourable conservation condition of the wetland habitat in Malahide Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. |                                                                   |
| Baldoyle Bay SPA (004016)               | Light-bellied Brent Goose ( <i>Branta bernicla hrota</i> ) [A046],                                                                                   | To maintain the favourable conservation condition of Light-bellied Brent Goose in Baldoyle Bay SPA.                                                                              | 27.5 km northeast and connected to the Dublin GWB.                |
|                                         | Shelduck ( <i>Tadorna tadorna</i> ) [A048]                                                                                                           | To maintain the favourable conservation condition of Shelduck in Baldoyle Bay SPA.                                                                                               |                                                                   |
|                                         | Ringed Plover ( <i>Charadrius hiaticula</i> ) [A137],                                                                                                | To maintain the favourable conservation condition of Ringed Plover in Baldoyle Bay SPA.                                                                                          |                                                                   |
|                                         | Golden plover ( <i>Pluvialis apricaria</i> ) [A140],                                                                                                 | To maintain the favourable conservation condition of Golden plover in Baldoyle Bay SPA.                                                                                          |                                                                   |
|                                         | Grey Plover ( <i>Pluvialis squatarola</i> ) [A141],                                                                                                  | To maintain the favourable conservation condition of Grey Plover in Baldoyle Bay SPA.                                                                                            |                                                                   |
|                                         | Bar-tailed Godwit ( <i>Limosa lapponica</i> ) [A157]                                                                                                 | To maintain the favourable conservation condition of Bar-tailed Godwit in Baldoyle Bay SPA.                                                                                      |                                                                   |
|                                         | Wetland and Waterbirds [A999]                                                                                                                        | To maintain the favourable conservation condition of the wetland habitat in Baldoyle Bay SPA.                                                                                    |                                                                   |
| Rockabill to Dalkey Island SAC (003000) | Reefs [1170]                                                                                                                                         | To maintain the favourable conservation condition of Reefs in Rockabill to Dalkey Island SAC.                                                                                    | 29 km east and downstream of the Proposed Scheme in Dublin Bay.   |
|                                         | Harbour Porpoise ( <i>Phocoena phocoena</i> ) [1351]                                                                                                 | To maintain the favourable conservation condition of Harbour porpoise in Rockabill to Dalkey Island SAC.                                                                         |                                                                   |
| Dalkey Islands SPA (004172)             | Roseate Tern ( <i>Sterna dougallii</i> ) [A192],<br>Common Tern ( <i>Sterna hirundo</i> ) [A193],<br>Arctic Tern ( <i>Sterna paradisaea</i> ) [A194] | To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA                                           | 29.1 km east downstream of the Proposed Scheme and in Dublin Bay. |
| Howth Head SAC (000202)                 | Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]                                                                                        | To maintain the favourable conservation condition of Vegetated sea cliffs of the Atlantic and Baltic coasts in Howth Head SAC.                                                   | 29 km east, within the Dublin GWB.                                |
|                                         | European dry heaths [4030]                                                                                                                           | To maintain the favourable conservation condition of European dry heaths in Howth Head SAC.                                                                                      |                                                                   |
| Howth Head Coast SPA (004113)           | Kittiwake ( <i>Rissa tridactyla</i> ) [A188]                                                                                                         | To maintain or restore the favourable conservation condition of the Kittiwake ( <i>Rissa tridactyla</i> ) for Howth Head Coast SPA.                                              | 31.6 km east and downstream of the Proposed Scheme in Dublin Bay  |



**Figure 4-1: European Sites within the potential zone of influence of the Proposed Scheme**

**Project:**  
Celbridge Hazelhatch Mobility Corridor



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## 4.2. Habitats

The dominant habitat within the footprint of the Proposed Scheme is improved agricultural grassland (GA1). The Proposed Scheme between the R405 and Newtown Road passes through agricultural land predominantly consisting of fields of improved agricultural grassland (GA1). The Proposed Scheme also passes through numerous hedgerows (WL1), drainage ditches (FW4), including one with flowing water classifying it as a depositing watercourse (FW2), and treelines (WL2).

To the north-west of the Newtown Road, the Proposed Scheme passes through a stone wall (BL1), a hedgerow (WL1), an area of GS2 dry meadows and grassy verges and riparian woodland (WN5) before passing over the River Liffey (FW2 depositing/lowland river). There is also an area of grassland adjacent to this section of the Proposed Scheme that is a matrix of GS4 wet grassland and GS2 dry meadows and grassy verges.

North of the River Liffey the Proposed Scheme passes through an area of riparian woodland (WN5), amenity grassland (improved) (GA2), GS2 dry meadows and grassy verges, a hedgerow (WL1) and a small area of dry calcareous and neutral grassland (GS1) and scrub (WS1). North of this area, it passes through an area of buildings and artificial surfaces (BL3) and a matrix of recolonising bare ground (ED3), horticultural land (BC2) and flower beds and borders (BC4). North of this area, it passes through hedgerows (WL1), scrub (WS1) and GS2 dry meadows and grassy verges.

It is assumed that the Annex I habitat, floating river vegetation (3260), is present within the River Liffey at the Proposed Scheme or downstream of the Proposed Scheme, as this is within the current distribution, current range and favourable reference range of the habitat (NPWS, 2019b). No other Annex I habitat or Annex I-corresponding habitat is located within the footprint of the Proposed Scheme.

## 4.3. Hydrology

The Proposed Scheme area lies within the Liffey and Dublin Bay WFD Catchment (Catchment ID: 09) and the Liffey\_SC\_050 (Subcatchment ID: 09\_7) and Liffey\_SC\_070 (Subcatchment ID: 09\_14) Subcatchments, on the northern and southern sides of the River Liffey, respectively.

The Proposed Scheme crosses the River Liffey and Loughlinstown Stream. Both of these are within the Liffey\_140 WFD River Waterbody (RWB) (WFD ID: IE\_EA\_09L011700). The WFD status of the Liffey\_140 RWB, for the 2016-2021 period, has been classified as 'Good' and the RWB is considered to be 'Not at Risk' of failing to achieve its WFD objectives (based on WFD risk for the 3<sup>rd</sup> Cycle of the WFD). The quality of the Liffey\_140, as measured at the 'Br in Cellbridge' monitoring station, approx. 650 m downstream of the Proposed Scheme, was 'Good' during its latest assessment in 2022.

At its southeasternmost extent, the Proposed Scheme is approx. 70 m from the Castletown (Dublin-Kildare)\_010 Stream (WFD ID: IE\_EA\_09C500830) RWB. The WFD status of the Castletown (Dublin-Kildare)\_010 RWB, for the period 2016-2021, has been classified as 'Poor' and the risk of the RWB failing to achieve its WFD objectives (based on WFD risk for the 3<sup>rd</sup> Cycle of the WFD) is currently 'Under Review'.

In addition to the above, the Proposed Scheme crosses an unnamed stream, approx. 250 m west of the R405. Historical OS maps were used to determine the path of this stream, which flows for approx. 2.2 km before flowing into the River Liffey to the north. The Proposed Scheme also crosses a drainage ditch which is connected to this stream both upstream and downstream of the Proposed Scheme area and runs along the western boundary of the R405.

From the Proposed Scheme area, the River Liffey flows in an easterly direction for approx. 20.8 km, where it merges into the Liffey Estuary Upper Transitional Waterbody (TWB) (WFD Code: IE\_EA\_090\_0400), which extends eastwards into the Liffey Estuary Lower TWB (WFD Code: IE\_EA\_090\_0300), and Dublin Bay Coastal Waterbody (CWB) (WFD Code: IE\_EA\_090\_0000), constituting hydrological connectivity between the Proposed Scheme and North Dublin Bay SAC, South Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA, North-west Irish Sea SPA, Rockabill to Dalkey Island SAC, Dalkey Islands SPA, and Howth Head SPA, all >25 km downstream.

## 4.4. Hydrogeology

The Proposed Scheme lies within the Dublin Groundwater Body (GWB) (WFD GWB ID: IE\_EA\_G\_008). The Dublin GWB discharges directly to the Irish Sea, along the coast, as well as to overlying gravel aquifers in places and also to overlying rivers if they are in hydraulic continuity with the aquifer (GSI, no date).

The WFD GWB status of the Dublin GWB, for the 2016-2021 period, has been classified as 'Good' and the risk of this GWB failing to achieve its WFD objectives (based on WFD risk for the 3<sup>rd</sup> Cycle of the WFD) is currently 'Under Review'.

Groundwater vulnerability describes the natural ground characteristics that determine the ease with which groundwater may be contaminated by human activities. Irish bedrock aquifers are protected by the subsoil and, therefore, the type and thickness of the subsoil will determine the aquifers vulnerability. The GSI groundwater vulnerability is high over the area of the Proposed Scheme north of Temple Mills Road (L1016) and is moderate over the area of the Proposed Scheme south of Temple Mills Road. Therefore, groundwater vulnerability is high at the proposed bridge.

## 5. APPROPRIATE ASSESSMENT – STAGE 1: SCREENING

### 5.1. Screening for Appropriate Assessment

Under Section 177U (1) of the Planning Acts, a Screening for AA of the proposed development shall be carried out by the competent authority to assess in view of best scientific knowledge, if that proposed development, individually or in combination with other plans or projects, is likely to have a significant effect(s) on any European Sites.

In order to comply with the requirements of Article 6(3) of the EU Habitats Directive, the process of Screening for AA was undertaken for the Proposed Scheme. A report to inform screening for AA (RPS, 2024) assessed the potential for the project to result in likely significant effects on any European Sites, either alone or in combination with other plans or projects. A standalone AA Screening Report has been included in the planning application document submitted for this application.

### 5.2. Potential for likely Significant Effects

Considering the April 2018 judgement of the Court of Justice of the European Union<sup>5</sup>, mitigation measures, including pollution control measures proposed during construction and operation, may not be considered when deciding whether to 'Screen in' a project plan to the requirement for AA.

The report to inform Screening for AA (RPS, 2024) identified potential LSEs to a number of European Sites, resulting from:

- Direct pollution to the River Liffey and downstream transitional and coastal waterbodies through disturbance of sewage pipes and surface water pollution; and
- Pollution and disturbance of connected groundwater bodies.

No LSEs are anticipated during the operational phase of the Proposed Scheme.

### 5.3. Screening for Appropriate Assessment Conclusion

Through an assessment of the source-pathway-receptor model, which considered the ZoI of effects from the Proposed Scheme and the potential in-combination effects with other plans or projects, the following findings were reported in the report to inform screening for AA (RPS, 2024):

- In the absence of mitigation measures to control water pollution during the construction of the Proposed Scheme, the potential for LSEs on the following European Sites cannot be ruled out:
  - North Dublin Bay SAC (000206);
  - South Dublin Bay SAC (000210);
  - South Dublin Bay and River Tolka Estuary SPA (004024);
  - North Bull Island SPA (004006);
  - North-West Irish Sea SPA (004236);
  - Rockabill to Dalkey Island SAC (003000);
  - Dalkey Islands SPA (004172); and
  - Howth Head Coast SPA (004113).

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<sup>5</sup> Case C 323/17, REQUEST for a preliminary ruling under Article 267 TFEU from the High Court (Ireland), made by decision of 10 May 2017, received at the Court on 30 May 2017, in the proceedings People Over Wind, Peter Sweetman v Coillte.

Through an assessment of the source-pathway-receptor model, which considered the Zol of effects from the Proposed Scheme and the potential in-combination effects with other plans or projects, the following findings were reported:

- The Proposed Scheme is not directly connected with or necessary to the management of any European Site; and
- The Proposed Scheme may give rise to likely significant effects on the qualifying interests of European Sites during the construction phase, in view of best scientific knowledge and in view of the conservation objectives of the sites concerned.

For the purposes of this NIS, RPS has assumed that the Competent Authority would agree that the Proposed Scheme 'Screens in' to the requirement for AA; although it is ultimately up to the Competent Authority to make this determination.

## 6. APPROPRIATE ASSESSMENT – STAGE 2: NATURA IMPACT STATEMENT

### 6.1. Required Information

The requirement to carry out a NIS is reliant on the conclusion arrived at during the Screening process (See **Section 5** and AA Screening). In order to determine if the identified source-pathway-receptor linkages may adversely affect the integrity of any European Site(s), the following steps are taken:

1. Identification of the information required, including the Proposed Scheme, linkages to European Sites, and description of relevant European Sites;
2. Examination of the site-specific conservation objectives and attributes of QIs/SCIs of relevant European Sites; and
3. Prediction of any adverse effect to the integrity of any European Site(s), including in-combination effects.

#### 6.1.1. Proposed Scheme

The Proposed Scheme has been described in detail in **Section 2** of this report.

#### 6.1.2. Linkages to European Sites

The connectivity between the Proposed Scheme and all European Sites has been assessed. Three SACs and five SPAs have been identified as relevant European Sites for this NIS. The source-pathway-receptor model for the Proposed Scheme is detailed in **Table 6-1**. The only sources of LSEs are associated with the construction phase of the Proposed Scheme. Only relevant QIs/SCIs identified are brought forward to the next part of the NIS assessment.

The QIs and SCIs of North Dublin Bay SAC (000206), South Dublin Bay SAC (000210), South Dublin Bay and River Tolka Estuary SPA (004024), North Bull Island SPA (004006), North-west Irish Sea SPA (004236), Rockabill to Dalkey Island SAC (003000), Dalkey Islands SPA (004172) and Howth Head Coast SPA (004113) are described, with regard to the source-pathway-receptor link(s) within the Zol of LSE of the Proposed Scheme, in **Table 6-2** and **Table 6-3**. QIs and SCIs with identified source-pathway-receptor link(s) are carried forward for further assessment, while QIs and SCIs with no identified source-pathway-receptor link(s) are not assessed further in this NIS.

**Table 6-1: Source-Pathway-Receptor model for the Proposed Scheme**

| Source of Potential Effect                                                                                                                      | Description of Effect Pathway                                                                                                                              | Potential Zol of Effect                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Potential Relevance of Effect to AA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Noise, vibration, lighting, and human presence during movements of vehicles and operation of machinery associated with construction activities. | During construction, noise or other construction-related disturbance could reduce the ability of populations of QI/SCI species to forage, roost, or breed. | The pathways for disturbance effects relating to noise and/or construction-related disturbance are generally assessed within 300 m of the proposed development footprint for wintering birds in an urban setting (Cutts <i>et al.</i> , 2009). However, this distance can be significantly lower (e.g., 150 m for otter underground sites (NRA, 2008) or higher (e.g. Hen Harriers may take flight when nesting up to 750 m from disturbance (Whitfield <i>et al.</i> , 2008)). | <b>Not Relevant.</b> The operation of plant in the demolition and earthworks required to facilitate the construction of the Proposed Scheme, as well as the increased activity in road users during the operational and maintenance phases, may temporarily disturb QIs/SCIs within the Zone of Influence of the Proposed Scheme.<br><br>Agricultural grassland, which could represent suitable significant foraging habitat for wintering SCI birds, is contained within the Proposed Scheme area. However, considering the scale, nature, and limited duration of the proposed works and the context of the surrounding habitats at large, it is |

| Source of Potential Effect                                                      | Description of Effect Pathway                                                                                                                                                                                                                                  | Potential Zol of Effect                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Potential Relevance of Effect to AA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                 |                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | unlikely that any disturbance to SCI birds will occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Habitat loss, destruction, fragmentation, or deterioration.                     | Land take and/or vegetation clearance required to accommodate the Proposed Scheme could have direct or indirect impacts to the qualifying habitat of European Sites or supporting habitats of QI and SCI species, resulting in habitat loss and fragmentation. | Land take and habitat fragmentation both within and adjacent to the boundaries of European Sites accosted with the project. The favourable reference range of QI species is also considered, the zone of influence with therefore differ with species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p><b>Not Relevant.</b> As the Proposed Scheme area does not intersect with any European Site(s), habitat loss, destruction, fragmentation, or deterioration due to the Proposed Scheme will not occur and no likely significant effects on any European site(s) are predicted.</p> <p>In relation to potential for <i>in-situ</i> or <i>ex-situ</i> effects on QI species or SCI birds, despite the loss of agricultural grassland earmarked for removal to accommodate for the Proposed Scheme, which represents potential suitable habitat for SCI species, considering the available of similar suitable habitat in the wider environs of the Proposed Scheme area, no appreciable impact can be attributed in this regard.</p>                          |
| Surface water runoff carrying suspended silt or contaminants into watercourses. | Silt, hydrocarbons, and/or other contaminants (oils, fuels, etc.) may enter nearby watercourses through surface water runoff.                                                                                                                                  | <p>The Zol of effects from contaminated surface water is difficult to accurately estimate as it will depend on numerous factors including the type and concentration of pollutants, assimilative capacity of receiving waters, and time of year (related to water levels).</p> <p>As a precautionary measure, a reasonable worst-case Zol for water pollution from the Proposed Scheme is considered to be the downstream surface water catchment. In this NIS the surface water catchment is defined at the scale of Catchment Management Unit (CMU) as adopted in the River Basin Management Plan (RBMP) for Ireland 2018-2021 (Department of Housing, Planning and Local Government (DHPLG), 2018).</p> <p>The open coastlines, where Coastal Waterbodies begin, are also considered to fall within the potential Zol of significant effects.</p> | <p><b>Relevant.</b> It has been determined that silt, grit, fuels, oils, or known soil contaminants could enter surface waters (River Liffey) or infiltrate to groundwater during the construction of the Proposed Scheme. These effects are potentially amplified by the immediate proximity of the Proposed Scheme works to receiving waters. In the absence of mitigation measures to control surface-water pollution during the construction of the Proposed Scheme, the potential for significant adverse effects exists to North Dublin Bay SAC, South Dublin Bay SAC, Rockabill to Dalkey Island SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA, North-west Irish Sea SPA, Howth Head Coast SPA and Dalkey Islands SPA.</p> |
| Disturbance of invasive species during the construction of the Proposed Scheme. | Construction activities could lead to the dispersal of scheduled invasive species either via machinery, materials, clothing, or wild animals.                                                                                                                  | The Zol of effects for the spread of terrestrial invasive species is difficult to accurately estimate, as plant fragments may be spread on tyre treads to distant, unrelated sites. In relation to the water-borne spread of vegetation, the Zol is generally restricted to the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>Not Relevant.</b> The Proposed Scheme area is located within the Liffey and Dublin Bay WFD Catchment. Though elements of eighteen European Sites (eleven SACs and seven SPAs) are also located within this WFD Catchment, hydrological connectivity from the Proposed Scheme area only exists for the North Dublin Bay SAC, South Dublin Bay SAC, Rockabill to Dalkey Island</p>                                                                                                                                                                                                                                                                                                                                                                       |

| Source of Potential Effect                                                                              | Description of Effect Pathway                                                                                                                                                                      | Potential Zol of Effect                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Potential Relevance of Effect to AA                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                         |                                                                                                                                                                                                    | surface water Catchment Management Unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SAC, South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA, North-west Irish Sea SPA, Howth Head Coast SPA and Dalkey Islands SPA, via the River Liffey and the Dublin Bay CWB. Considering the intervening hydrological distances between the Proposed Scheme area and the aforementioned European Sites, no impacts to the integrity of any European Sites via the spread of invasive species as a result of the Proposed Scheme are anticipated. |
| Changes of groundwater quality, yield and/or flow paths associated with earthworks during construction. | Construction activities (e.g. earthworks) could interfere with groundwater quality, yields and/or flow paths, potentially affecting the water quality or habitats dependent on groundwater supply. | The potential Zol of effects from earthworks to groundwater quality, flow, and/or yield is difficult to accurately estimate as it will depend on factors including the depth and intrusion of excavations and time of year (related to water levels). As a precautionary measure, a reasonable worst-case spatial Zol is considered to be 500 m from the point of excavation, which is a precautionary doubling of the 250 m stated as the potential Zol from intrusive excavations to sensitive upland peatland sites (Scottish Environment Protection Agency (SEPA), 2014). | <b>Not Relevant.</b> There are no European Sites located within 500 m of the Proposed Scheme area.                                                                                                                                                                                                                                                                                                                                                                |

**Table 6-2: Proposed Scheme link(s) with the identified SACs**

| QI (priority habitat indicated with asterisk)                                                                                                                                                                                                                                                                                                                       | Relevance to the Zol of Likely Significant Effects of the Proposed Scheme                                                                                           | Source-Pathway-Receptor Link(s)                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>North Dublin Bay SAC (000206) (see Conservation Objectives and Site Synopsis (NPWS, 2013b, 2013c))</b>                                                                                                                                                                                                                                                           |                                                                                                                                                                     |                                                                                                                                                                                                                   |
| Mudflats and sandflats not covered by seawater at low tide [1140], Atlantic salt meadows <i>Glauco-Puccinellietalia maritima</i> [1330], Mediterranean salt meadows <i>Juncetalia maritimi</i> [1410], <i>Petalophyllum ralfsii</i> (Petalwort) [1395], Annual vegetation of drift lines [1210], <i>Salicornia</i> and other annuals colonising mud and sand [1310] | Habitats have been mapped . This feature occurs downstream of the proposed Scheme and is connected directly to the River Liffey and to Dublin Bay groundwater body. | <b>Link(s) Identified</b><br>There is potential for these habitats to be affected by silt, oils, grit, sewage spills or other potential contaminants generated during the construction of proposed works.         |
| Embryonic shifting dunes [2110]                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                     | <b>Link(s) Identified</b><br>There is potential for embryonic shifting dunes to be affected by silt, oils, grit, or other potential contaminants generated during the construction of proposed works.             |
| Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]                                                                                                                                                                                                                                                                              |                                                                                                                                                                     | <b>No Link(s) Identified</b><br>This habitat relies on regular sediment inputs for accretion and is set back from the high-water mark as it cannot tolerate immersion from saltwater. Therefore, there is limited |

| QI (priority habitat indicated with asterisk)                                                                                                                                                                   | Relevance to the Zol of Likely Significant Effects of the Proposed Scheme                                                                                                                                                                                                        | Source-Pathway-Receptor Link(s)                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Humid dune slacks [2190]                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                  | <p>potential for Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) to come into contact with discharges from the Proposed Scheme.</p> <p><b>Link(s) Identified</b></p> <p>Humid dune slacks are associated with the water table throughout the year. There is potential for embryonic shifting dunes to be affected by silt, oils, grit, or other potential contaminants generated during the construction of proposed works.</p> |
| Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]                                                                                                                                              |                                                                                                                                                                                                                                                                                  | <p><b>No Link(s) Identified.</b></p> <p>This habitat is found to the landward side of dune habitats and is sheltered from LSE arising from the proposed development. Therefore, owing to the terrestrial nature of the habitat, it is unlikely that it would come into contact with discharges from the Proposed Scheme.</p>                                                                                                                                    |
| <b>South Dublin Bay SAC (000210) (see Conservation Objectives and Site Synopsis (NPWS, 2013d, 2015a))</b>                                                                                                       |                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Mudflats and sandflats not covered by seawater at low tide [1140], Annual vegetation of drift lines [1210], <i>Salicornia</i> and other annuals colonising mud and sand [1310], Embryonic shifting dunes [2110] | Habitats have been mapped. This feature occurs downstream of the proposed Scheme and is connected directly to the River Liffey and to Dublin Bay groundwater body.                                                                                                               | <p><b>Link(s) Identified</b></p> <p>There is potential for these habitats to be affected by silt, oils, grit, sewage spills or other potential contaminants generated during the construction of proposed works.</p>                                                                                                                                                                                                                                            |
| <b>Rockabill to Dalkey Island SAC (003000) (see Conservation Objectives and Site Synopsis (NPWS, 2013e, 2014a))</b>                                                                                             |                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Reefs [1170]                                                                                                                                                                                                    | These features have been mapped. This feature occurs downstream of the proposed Scheme and is connected directly to the River Liffey and to Dublin Bay groundwater body. Discharge from River Liffey into Dublin Bay can travel north-eastwards through current flow and mixing. | <p><b>Link(s) Identified</b></p> <p>There is potential for these QIs to be affected by silt, oils, grit, sewage outflow, or other potential contaminants generated during the construction of Proposed Scheme.</p>                                                                                                                                                                                                                                              |
| Harbour Porpoise <i>Phocoena phocoena</i> [1351]                                                                                                                                                                |                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

**Table 6-3: Proposed Scheme link(s) with the identified SPAs**

| SCI                                                                                                       | Relevance to the Zol of Likely Significant Effects of the Proposed Scheme                                                                | Key Source-Pathway-Receptor Link(s)                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Howth Head Coast SPA (004113) (see Conservation Objectives and Site Synopsis (NPWS, 2022a, 2011a))</b> |                                                                                                                                          |                                                                                                                                                                                                                   |
| Kittiwake <i>Rissa tridactyla</i> [1188]                                                                  | Roosting locations for the SCI species have not been mapped as part of the NPWS assessment. This species is also known to use Dublin Bay | <p><b>Link(s) Identified</b></p> <p>There is potential for SCI birds who commute across neighbouring SPAs to be affected by periods of unmitigated discharge of pollution to the River Liffey and Dublin GWB.</p> |

| SCI                                                                                                                               | Relevance to the Zol of Likely Significant Effects of the Proposed Scheme                                                                                                                                        | Key Source-Pathway-Receptor Link(s)                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                   | and Doldrum Bay areas for feeding.                                                                                                                                                                               | However, the Proposed Scheme area does not provide significant ex-situ foraging/roosting habitat for SCI species.                                                                                                                                                                                                        |
| <b>North Bull Island SPA (004006) (see Conservation Objectives and Site Synopsis (NPWS, 2015b, 2014b))</b>                        |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Light Bellied Brent Goose <i>Branta bernicla hrota</i> [A046]                                                                     | Roosting and loafing locations for SCI species are located across much of the SPA. Mobile SCI species are also deemed to be present across Dublin Bay.                                                           | <b>Link(s) Identified</b><br>There is potential for SCI birds who commute across neighbouring SPAs to be affected by periods of unmitigated discharge of pollution to the River Liffey and Dublin GWB. However, the Proposed Scheme area does not provide significant ex-situ foraging/roosting habitat for SCI species. |
| Shelduck <i>Tadorna tadorna</i> [A048]                                                                                            |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Teal <i>Anas crecca</i> [A052]                                                                                                    |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Pintail <i>Anas acuta</i> [A054]                                                                                                  |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Shoveler <i>Anas clypeata</i> [A056]                                                                                              |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Oystercatcher <i>Haematopus ostralegus</i> [A130]                                                                                 |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Golden Plover <i>Pluvialis apricaria</i> [A140]                                                                                   |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Grey Plover <i>Pluvialis squatarola</i> [A141]                                                                                    |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Knot <i>Calidris canutus</i> [A143]                                                                                               |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Sanderling <i>Calidris alba</i> [A144]                                                                                            |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Dunlin <i>Calidris alpina</i> [A149]                                                                                              |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Black-tailed Godwit <i>Limosa limosa</i> [A156]                                                                                   |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Bar-tailed Godwit <i>Limosa lapponica</i> [A157]                                                                                  |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Curlew <i>Numenius arquata</i> [A160]                                                                                             |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Redshank <i>Tringa totanus</i> [A162]                                                                                             |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Turnstone <i>Arenaria interpres</i> [A169]                                                                                        |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]                                                                        |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Wetlands [A999]                                                                                                                   | No specific wetland habitat is mapped. The NPWS have mapped the SPA territory and do identify subsites within the 2012 roosting surveys. This provides valuable roosting and loafing habitats for all SCI birds. | <b>Link(s) Identified</b><br>There is potential for SCI birds who commute across neighbouring SPAs to be affected by periods of unmitigated discharge of pollution to the River Liffey and Dublin GWB. However, the Proposed Scheme area does not provide significant ex-situ foraging/roosting habitat for SCI species. |
| <b>South Dublin Bay and River Tolka Estuary SPA (004024) (see Conservation Objectives and Site Synopsis (NPWS, 2015c, 2015d))</b> |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Light Bellied Brent Goose <i>Branta bernicla hrota</i> [A046]                                                                     | Roosting and loafing locations for SCI species are located across much of the SPA. Mobile SCI species are also deemed to be present across Dublin Bay areas.                                                     | <b>Link(s) Identified</b><br>There is potential for SCI birds who commute across neighbouring SPAs to be affected by periods of unmitigated discharge of pollution to the River Liffey and Dublin GWB. However, the Proposed Scheme area does not provide significant ex-situ foraging/roosting habitat for SCI species. |
| Knot <i>Calidris canutus</i> [A143]                                                                                               |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Sanderling <i>Calidris alba</i> [A144]                                                                                            |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Bar-tailed Godwit <i>Limosa lapponica</i> [A157]                                                                                  |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Redshank <i>Tringa totanus</i> [A162]                                                                                             |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Roseate Tern <i>Sterna Dougallii</i> [A192]                                                                                       |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Common Tern <i>Sterna hirundo</i> [A193]                                                                                          |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Arctic Tern <i>Sterna paradisaea</i> [A194]                                                                                       |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Oystercatcher <i>Haematopus ostralegus</i> [A130]                                                                                 |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Ringed Plover <i>Charadrius hiaticula</i> [A137]                                                                                  |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Golden Plover <i>Pluvialis apricaria</i> [A140]                                                                                   |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |
| Grey Plover <i>Pluvialis squatarola</i> [A141]                                                                                    |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |

| SCI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Relevance to the Zol of Likely Significant Effects of the Proposed Scheme                                                                                                                                        | Key Source-Pathway-Receptor Link(s)                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dunlin <i>Calidris alpina</i> [A149]<br>Black-headed Gull<br><i>Larus ridibundus</i> [A179]<br>Wetlands [A999]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No specific wetland habitat is mapped. The NPWS have mapped the SPA territory and do identify subsites within the 2012 roosting surveys. This provides valuable roosting and loafing habitats for all SCI birds. | <b>Link(s) Identified</b><br>There is potential for wetlands to be affected by periods of unmitigated discharge of pollution to the River Liffey and Dublin GWB.                                                                                                                                                                |
| <b>North-west Irish Sea SPA (004236) (see Conservation Objectives and Site Synopsis (NPWS, 2023a, 2023b))</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                 |
| Red-throated Diver <i>Gavia stellata</i> [A001]<br>Great Northern Diver <i>Gavia immer</i> [A003]<br>Manx Shearwater <i>Puffinus puffinus</i> [A013]<br>Common Scoter <i>Melanitta nigra</i> [A065]<br>Little Gull <i>Larus minutus</i> [A177]<br>Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]<br>Common Gull <i>Larus canus</i> [A182]<br>Lesser Black-backed Gull <i>Larus fuscus</i> [A183]<br>Great Black-backed Gull <i>Larus marinus</i> [A187]<br>Roseate Tern <i>Sterna dougallii</i> [A192]<br>Common Tern <i>Sterna hirundo</i> [A193]<br>Arctic Tern <i>Sterna paradisaea</i> [A194]<br>Little Tern <i>Sterna albifrons</i> [A195]<br>Guillemot <i>Uria aalge</i> [A199]<br>Razorbill <i>Alca torda</i> [A200]<br>Fulmar <i>Fulmarus glacialis</i> [A009]<br>Cormorant <i>Phalacrocorax carbo</i> [A017]<br>Shag <i>Phalacrocorax aristotelis</i> [A018]<br>Herring Gull <i>Larus argentatus</i> [A184]<br>Kittiwake <i>Rissa tridactyl</i> [A188]<br>Puffin <i>Fratercula arctica</i> [A204] | Roosting and loafing locations for SCI species are located across much of the SPA. Mobile SCI species are also deemed to be present across Dublin Bay area.                                                      | <b>Link(s) Identified</b><br>There is potential for SCI birds who commute across neighbouring SPAs to be affected by periods of unmitigated discharge of pollution to the River Liffey and Dublin GWB. However, the Proposed Scheme area does not provide significant <i>ex-situ</i> foraging/roosting habitat for SCI species. |
| <b>Dalkey Islands SPA (004172) (see Conservation Objectives and Site Synopsis (NPWS, 2022b, 2015e))</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                 |
| Roseate Tern ( <i>Sterna dougallii</i> ) [A192]<br>Common Tern ( <i>Sterna hirundo</i> ) [A193]<br>Arctic Tern ( <i>Sterna paradisaea</i> ) [A194]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Breeding and roosting locations for SCI species are located on the three islands (NPWS, 2022). Roosting birds likely originate from Dublin breeding sites                                                        | <b>Link(s) Identified</b><br>There is potential for SCI birds who commute across neighbouring SPAs to be affected by periods of unmitigated discharge of pollution to the River Liffey and Dublin GWB. However, the Proposed Scheme area does not provide significant <i>ex-situ</i> foraging/roosting habitat for SCI species. |

Based on the findings in **Table 6-2**, a number of QI habitats from North Dublin Bay SAC are removed from further consideration as no link exists between the Proposed Scheme and the QIs for the European Sites.

### 6.1.3. Threats and Pressures facing European Sites

The NPWS Natura 2000 data form provides status assessments for the QIs/SCIs of North Dublin Bay SAC (NPWS, 2020a), South Dublin Bay SAC (NPWS, 2020b), South Dublin Bay and River Tolka Estuary SPA (NPWS, 2021), North Bull Island SPA (NPWS, 2020c), Rockabill to Dalkey Island SAC (NPWS, 2019d), Dalkey Islands SPA (NPWS 2020d) and Howth Head Coast SPA (NPWS, 2020e). The data form has not yet been published for North-west Irish Sea SPA.

Site-level and species-wide threats and pressures facing European Sites and QI and SCI habitats/species with identified source-pathway-receptor link(s) have been assessed. Those which are deemed relevant to the Proposed Scheme (i.e. those which the Proposed Scheme could exacerbate) are included in **Table 6-4** and **Table 6-5**.

**Table 6-4: Conservation status and threats to relevant QIs of SACs under consideration**

| QI                                                                      | Site-Level Conservation Status | National Conservation Status (and Trend) (NPWS, 2019b)                                         | Primary Site-Level Threats From the Proposed Scheme (Professional Judgement Applied to Natura 2000 Form) | Other Relevant National Threats From NPWS (2019b)                                                                                           |
|-------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>North Dublin Bay SAC (000206)</b>                                    |                                |                                                                                                |                                                                                                          |                                                                                                                                             |
| Mudflats and sandflats not covered by seawater at low tide [1140]       | B                              | Favourable range/area<br>Inadequate Conservation Status –<br>Deteriorating trend               | Diffuse and point pollution to surface waters (H01.09, H01.3);<br>Discharges (E03)                       | Residential or recreational activities and structures generating marine pollution (excl. marine macro-and micro particular pollution (F20)) |
| Annual vegetation of drift lines [1210]                                 | B                              | Favourable range<br>Inadequate area<br>Inadequate Conservation Status –<br>Deteriorating trend |                                                                                                          | N/A                                                                                                                                         |
| Humid dune slacks [2190]                                                | A                              | Favourable range<br>Inadequate area<br>Inadequate Conservation Status –<br>Stable trend        |                                                                                                          | N/A                                                                                                                                         |
| <i>Salicornia</i> and other annuals colonising mud and sand [1310]      | A                              | Favourable range/area<br>Favourable Conservation Status –<br>Stable trend                      |                                                                                                          | Other invasive alien species (other than species of Union concern) (I02)                                                                    |
| Atlantic salt meadows ( <i>Glaucopuccinellietalia maritima</i> ) [1330] | B                              | Favourable range<br>Inadequate area<br>Inadequate Conservation Status –<br>Deteriorating trend |                                                                                                          | Modification of hydrological flow (A33);<br>Other Invasive alien species (other than species of Union concern) (I02)                        |
| <i>Petalophyllum ralfsii</i> (Petalwort) [1395]                         | B                              | Favourable range<br>Favourable area<br>Favourable Conservation Status –<br>Stable trend        |                                                                                                          | No threats                                                                                                                                  |
| Mediterranean salt meadows ( <i>Juncetalia maritima</i> ) [1410]        | B                              | Favourable range<br>Inadequate area<br>Inadequate Conservation Status –<br>Deteriorating trend |                                                                                                          | Modification of hydrological flow (A33);<br>Other Invasive alien species (other than species of Union concern) (I02)                        |
| Embryonic shifting dunes [2110]                                         | A                              | Favourable range/area<br>Inadequate Conservation Status –<br>Stable trend                      |                                                                                                          | N/A                                                                                                                                         |

| QI                                                                 | Site-Level Conservation Status | National Conservation Status (and Trend) (NPWS, 2019b)                                      | Primary Site-Level Threats From the Proposed Scheme (Professional Judgement Applied to Natura 2000 Form)                    | Other Relevant National Threats From NPWS (2019b)                                                                                                                                                                       |
|--------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>South Dublin Bay SAC (000210)</b>                               |                                |                                                                                             |                                                                                                                             |                                                                                                                                                                                                                         |
| Mudflats and sandflats not covered by seawater at low tide [1140]  | B                              | Favourable range<br>Favourable area<br>Inadequate Conservation Status – Deteriorating trend | Marine water pollution (H03);<br>Roads, motorways (D01.02);<br>Urbanised areas, human habitation (E01);<br>Discharges (E03) | Residential or recreational activities and structures generating marine pollution (excl. marine macro-and micro particular pollution (F20)                                                                              |
| Annual vegetation of drift lines [1210]                            | B                              | Favourable range<br>Inadequate area<br>Inadequate Conservation Status – Deteriorating trend |                                                                                                                             | N/A                                                                                                                                                                                                                     |
| <i>Salicornia</i> and other annuals colonising mud and sand [1310] | B                              | Favourable range<br>Favourable area<br>Favourable Conservation Status – Stable trend        |                                                                                                                             | Other invasive alien species (other than species of Union concern) (I02)                                                                                                                                                |
| Embryonic shifting dunes [2110]                                    | B                              | Favourable range<br>Inadequate area<br>Inadequate Conservation Status – Stable trend        |                                                                                                                             | Roads, paths, railroads and related infrastructure (e.g. bridges, viaducts, tunnels) (E01);<br>Other invasive alien species (other than species of Union concern) (I02)                                                 |
| <b>Rockabill and Dalkey Island SAC (003000)</b>                    |                                |                                                                                             |                                                                                                                             |                                                                                                                                                                                                                         |
| Reefs [1170]                                                       | B                              | Favourable range/area<br>Inadequate Conservation Status – Deteriorating trend               | Utility and service lines (D02);<br>Discharges (E03);<br>Oil spills in the sea (H06.01)                                     | Residential or recreational activities and structures generating marine pollution (excl. marine macro-and micro particular pollution (F20);<br>Other Invasive alien species (other than species of Union concern) (I02) |
| Harbour Porpoise <i>Phocoena phocoena</i> [1351]                   | B                              | Favourable range/area<br>Favourable Conservation Status – Stable trend                      |                                                                                                                             | N/A                                                                                                                                                                                                                     |

**Table 6-5: Conservation status and threats to relevant SCIs of SPA's under consideration**

| SCI                                             | Site-Level Conservation Status | Primary site-level threats from the Proposed Scheme (professional judgement applied to Natura 2000 form) | National conservation status (Gilbert <i>et al.</i> , 2021) |
|-------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| <b>Howth Head Coast SPA</b>                     |                                |                                                                                                          |                                                             |
| Kittiwake <i>Rissa tridactyla</i> [A188]        | A                              | None                                                                                                     | Red list                                                    |
| <b>North Bull Island SPA</b>                    |                                |                                                                                                          |                                                             |
| Shoveler <i>Anas clypeata</i> [A056]            | A                              | Roads, motorways (D01.02);                                                                               | Red list                                                    |
| Golden Plover <i>Pluvialis apricaria</i> [A140] | B                              | Discharges (E03)                                                                                         | Red list                                                    |

| SCI                                                            | Site-Level Conservation Status             | Primary site-level threats from the Proposed Scheme (professional judgement applied to Natura 2000 form) | National conservation status (Gilbert et al., 2021) |
|----------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Dunlin <i>Calidris alpina alpina</i> [A149]                    | A                                          |                                                                                                          | Red list                                            |
| Curlew <i>Numenius arquata</i> [A160]                          | A                                          |                                                                                                          | Red list                                            |
| Redshank <i>Tringa totanus</i> [A162]                          | A                                          |                                                                                                          | Red list                                            |
| Black-headed Gull <i>Larus ridibundus</i> [A179]               | A                                          |                                                                                                          | Amber list                                          |
| Pintail <i>Anas acuta</i> [A054]                               | A                                          |                                                                                                          | Amber list                                          |
| Light Bellied Brent Goose <i>Branta bernicla hrota</i> [A046]  | A                                          |                                                                                                          | Amber list                                          |
| Shelduck <i>Tadorna tadorna</i> [A048]                         | A                                          |                                                                                                          | Amber list                                          |
| Teal <i>Anas crecca</i> [A052]                                 | A                                          |                                                                                                          | Amber list                                          |
| Oystercatcher <i>Haematopus ostralegus</i> [A130]              | A                                          |                                                                                                          | Red list                                            |
| Grey Plover <i>Pluvialis squatarola</i> [A141]                 | A                                          |                                                                                                          | Red list                                            |
| Knot <i>Calidris canutus</i> [A143]                            | A                                          |                                                                                                          | Red list                                            |
| Black-tailed Godwit <i>Limosa limosa</i> [A156]                | A                                          |                                                                                                          | Red list                                            |
| Bar-tailed Godwit <i>Limosa lapponica</i> [A157]               | A                                          |                                                                                                          | Red list                                            |
| Turnstone <i>Arenaria interpres</i> [A169]                     | A                                          |                                                                                                          | Amber list                                          |
| Sanderling <i>Calidris alba</i> [A144]                         | A                                          |                                                                                                          | Green list                                          |
| Wetlands [A999]                                                | N/A                                        |                                                                                                          | N/A                                                 |
| <b>South Dublin Bay and River Tolka Estuary SPA</b>            |                                            |                                                                                                          |                                                     |
| Knot <i>Calidris canutus</i> [A143]                            | B                                          | Roads, motorways (D01.02);                                                                               | Red list                                            |
| Dunlin <i>Calidris alpina alpina</i> [A149]                    | B                                          | Urbanised areas, human habitation (E01)                                                                  | Red list                                            |
| Redshank <i>Tringa totanus</i> [A162]                          | B                                          |                                                                                                          | Red list                                            |
| Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) [A179] | B                                          |                                                                                                          | Amber list                                          |
| Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046]  | A                                          |                                                                                                          | Amber list                                          |
| Oystercatcher <i>Haematopus ostralegus</i> [A130]              | B                                          |                                                                                                          | Red list                                            |
| Ringed Plover <i>Charadrius hiaticula</i> [A137]               | B                                          |                                                                                                          | Amber list                                          |
| Grey Plover <i>Pluvialis squatarola</i> [A141]                 | B                                          |                                                                                                          | Red list                                            |
| Bar-tailed Godwit <i>Limosa lapponica</i> [A157]               | B                                          |                                                                                                          | Red list                                            |
| Roseate Tern <i>Sterna dougallii</i> [A192]                    | A                                          |                                                                                                          | Amber list                                          |
| Common Tern <i>Sterna hirundo</i> [A193]                       | A                                          |                                                                                                          | Amber list                                          |
| Arctic Tern <i>Sterna paradisaea</i> [A194]                    | A                                          |                                                                                                          | Amber list                                          |
| Sanderling <i>Calidris alba</i> [A144]                         | A                                          |                                                                                                          | Green list                                          |
| <b>North-West Irish Sea SPA</b>                                |                                            |                                                                                                          |                                                     |
| Red-throated Diver <i>Gavia stellata</i> [A001]                | N/A (Standard Data Form not yet published) | N/A (Standard Data Form not yet published)                                                               | Amber list                                          |
| Great Northern Diver <i>Gavia immer</i> [A003]                 |                                            |                                                                                                          | Amber list                                          |
| Manx Shearwater <i>Puffinus puffinus</i> [A013]                |                                            |                                                                                                          | Amber list                                          |
| Common Scoter <i>Melanitta nigra</i> [A065]                    |                                            |                                                                                                          | Red list                                            |
| Little Gull <i>Larus minutus</i> [A177]                        |                                            |                                                                                                          | Amber list                                          |
| Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]     |                                            |                                                                                                          | Amber list                                          |
| Common Gull <i>Larus canus</i> [A182]                          |                                            |                                                                                                          | Amber list                                          |

| SCI                                                 | Site-Level Conservation Status      | Primary site-level threats from the Proposed Scheme (professional judgement applied to Natura 2000 form) | National conservation status (Gilbert et al., 2021) |
|-----------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Lesser Black-backed Gull <i>Larus fuscus</i> [A183] |                                     |                                                                                                          | Amber list                                          |
| Great Black-backed Gull <i>Larus marinus</i> [A187] |                                     |                                                                                                          | Green list                                          |
| Roseate Tern <i>Sterna dougallii</i> [A192]         |                                     |                                                                                                          | Amber list                                          |
| Common Tern <i>Sterna hirundo</i> [A193]            |                                     |                                                                                                          | Amber list                                          |
| Arctic Tern <i>Sterna paradisaea</i> [A194]         |                                     |                                                                                                          | Amber list                                          |
| Little Tern <i>Sterna albifrons</i> [A195]          |                                     |                                                                                                          | Amber list                                          |
| Guillemot <i>Uria aalge</i> [A199]                  |                                     |                                                                                                          | Amber list                                          |
| Razorbill <i>Alca torda</i> [A200]                  |                                     |                                                                                                          | Red list                                            |
| Fulmar <i>Fulmarus glacialis</i> [A009]             |                                     |                                                                                                          | Amber list                                          |
| Cormorant <i>Phalacrocorax carbo</i> [A017]         |                                     |                                                                                                          | Amber list                                          |
| Shag <i>Phalacrocorax aristotelis</i> [A018]        |                                     |                                                                                                          | Amber list                                          |
| Herring Gull <i>Larus argentatus</i> [A184]         |                                     |                                                                                                          | Amber list                                          |
| Kittiwake <i>Rissa tridactyl</i> [A188]             |                                     |                                                                                                          | Red list                                            |
| Puffin <i>Fratercula arctica</i> [A204]             |                                     |                                                                                                          | Red list                                            |
| <b>Dalkey Islands SPA (004172)</b>                  |                                     |                                                                                                          |                                                     |
| Roseate Tern ( <i>Sterna dougallii</i> ) [A192]     | Reproducing: B;<br>Concentrating: A | Urbanised areas, human habitation ( <b>E01</b> ).                                                        | Amber list                                          |
| Common Tern ( <i>Sterna hirundo</i> ) [A193]        | Reproducing: B;<br>Concentrating: A |                                                                                                          | Amber list                                          |
| Arctic Tern ( <i>Sterna paradisaea</i> ) [A194]     | Reproducing: B;<br>Concentrating: A |                                                                                                          | Amber list                                          |

#### 6.1.4. Brief Description of European Sites within the Zone of Influence That are Further Assessed

There are eighteen European Sites within the Zol of the Proposed Scheme. Of these sites identified, eight have been brought forward for further consideration, with justification provided in the report to inform screening for AA (RPS, 2024) in relation to the potential for a source-pathway-receptor between the Proposed Scheme and the European Sites. Key source-effect pathways identified included those relating to the transmission of silt, hydrocarbons, and/or other contaminants (oils, fuels, etc.) from the Proposed Scheme area to European Sites, via the River Liffey.

##### 6.1.4.1. North Dublin Bay SAC (000206)

The SAC is centred on the inner part of Dublin Bay, extending northwards from the Bull wall and includes Bull Island. The island is a sandy spit that formed after engineering works in Dublin port and has over time seen increased. The site holds good examples of nine coastal habitats both sand-dune and saltmarsh that are listed on Annex I of the E.U. Habitats Directive; one of which is a priority habitat. The terrestrial part of the SAC supports a number of rare and scarce plants including some which are legally protected (e.g. *Petalophyllum ralfsii*), as well as some of the invertebrates are of national importance. Given the range of habitats, the SAC which overlaps with SPA and supports internationally important numbers of some wintering bird species (NPWS, 2013c).

#### **6.1.4.2. South Dublin Bay SAC (000210)**

The SAC is centred on the inner part of Dublin Bay south of the River Liffey, extending southward from the South Wall to the west pier at Dun Laoghaire. It is an intertidal site with large areas of sand and mudflats. The site is selected for four habitats. The site also includes small sandy beaches with incipient dune formation, notably at Irishtown and Booterstown. A small area of pioneer saltmarsh containing *Salicornia* has recently developed adjacent to the recent Booterstown dune formation. The site contains important habitat for several bird species (NPWS, 2015a).

#### **6.1.4.3. South Dublin Bay and River Tolka Estuary SPA (004024)**

This is an extensive estuarine complex that covers much of Dublin Bay, both the southern sections of the bay along with Booterstown marsh and the discharge of the Tolka River to the immediate south of Bull Island (North Bull Island SPA). The SPA includes extensive areas of intertidal flats. For this reason, the site is of considerable ornithological importance given its extent, diversity of habitat and availability of feeding resource. It supports an internationally important population of Light-bellied Brent Goose and nationally important populations of a further nine wintering species. Furthermore, the site supports a nationally important colony of breeding Common Tern and is an internationally important passage/staging site for three tern species (NPWS, 2015c).

#### **6.1.4.4. North Bull Island SPA (004006)**

Like North Dublin Bay SAC, this SPA occupies much of the same territory. The presence of extensive intertidal flats coupled with saltmarsh and inner lagoon make this an attractive site for birds. Despite its proximity to the Capital and the pressure and disturbance of considerable recreational activity, this estuarine complex, it is an important site for wintering wildfowl (NPWS, 2014c). It is of international importance for a number of wintering birds, but also supports nationally important numbers of other birds and the regular presence of a number of Annex I bird species (NPWS, 2014b).

#### **6.1.4.5. North-west Irish Sea SPA (004236)**

The North-west Irish Sea SPA is an important site for marine birds. The site comprises a 2,333 km<sup>2</sup> area offshore along Dublin, Meath and Louth. Estuaries and bays open into it and areas of intertidal and shallow subtidal habitats provide feeding and roosting habitat. Pelagic waters further offshore also provide foraging habitat. Numerous seabird species breed in nearby coastal SPAs, for which this SPA is an important resource. The populations of Manx shearwater, great northern diver and common scoter recorded in this SPA are of international importance (NPWS, 2023b).

#### **6.1.4.6. Rockabill to Dalkey Island SAC (003000)**

This site includes a range of dynamic inshore and coastal waters in the western Irish Sea. These include sandy and muddy seabed, reefs, sandbanks and islands. This site extends southwards, in a strip approximately 7 km wide and 40 km in length, from Rockabill, running adjacent to Howth Head, and crosses Dublin Bay to Frazer Bank in south Co. Dublin. The site encompasses Dalkey, Muglins and Rockabill islands. This site is of conservation importance for reefs, listed on Annex I, and Harbour Porpoise, listed on Annex II, of the E.U. Habitats Directive.

Reef habitat is uncommon along the eastern seaboard of Ireland due to prevailing geology and hydrographical conditions. Expansive surveys of the Irish coast have indicated that the greatest resource of this habitat within the Irish Sea is found fringing offshore islands which are concentrated along the Dublin coast. The area selected for designation represents a key habitat for the Annex II species Harbour Porpoise within the Irish Sea. Population survey data show that porpoise occurrence within the site boundary meets suitable reference values for other designated sites in Ireland (NPWS, 2014a).

#### **6.1.4.7. Dalkey Islands SPA (003000)**

Dalkey Islands SPA comprises Dalkey Island, Lamb Island and Maiden Rock, rocks and reefs between the islands, and the surrounding 200 m buffer of sea. Dalkey Island and Lamb Island contain grass and herbaceous vegetation, while Maiden Rock is unvegetated. The site is designated for roseate, common and

arctic tern, and the site is a breeding and staging site for the species. Common tern is the most numerous breeding species, followed by arctic tern. Since the introduction of a conservation scheme in 1995, the breeding population has increased and roseate tern returned to breeding, making it one of only three known breeding sites in the country. The site is also an important pre-migration autumn roost, with terns from other Dublin breeding sites utilising the islands (NPWS, 2015e).

#### 6.1.4.8. Howth Head Coast SPA (004113)

The site comprises all of the sea cliffs (which are often sheer and extend up to 100 m above sea-level) around this rocky headland and ranges from just east of the Nose of Howth to the tip of the Bailey Lighthouse peninsula. The marine area extending seawards to a distance of 500 m from the cliff base is included within the boundaries of the SPA. The cliffs around Howth Head are widely regarded for the nationally important colonies of various breeding seabirds as well as being a traditional nesting site for peregrine falcon. However, the SPA has been designated on the basis of a single species, namely; Kittiwake (*Rissa tridactyla*) [A188] (NPWS, 2011a).

## 6.2. Conservation Objectives

### 6.2.1. North Dublin Bay SAC (000206)

Site-specific Conservation Objectives for North Dublin Bay SAC are available (NPWS, 2013b). **Table 6-6** identifies the Conservation Objectives which could be adversely affected by the Proposed Scheme, for 'relevant' QIs scoped into the assessment.

**Table 6-6: Conservation Objectives and Attributes for North Dublin Bay SAC**

| Relevant QI                                                             | Site-Specific Conservation Objective (NPWS, 2013b)                                                                                             | Site-Specific Attributes Potentially Affected By the Proposed Scheme                                              |
|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Mudflats and sandflats not covered by seawater at low tide [1140]       | To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in North Dublin Bay SAC.       | Habitat area;<br>Community extent;<br>Community structure;<br>Community distribution.                             |
| Annual vegetation of drift lines [1210]                                 | To restore the favourable conservation condition of Annual vegetation of drift lines in North Dublin Bay SAC.                                  | Habitat area;<br>Habitat distribution;<br>Physical structure;<br>Vegetation structure;<br>Vegetation composition. |
| <i>Salicornia</i> and other annuals colonising mud and sand [1310]      | To restore the favourable conservation condition of <i>Salicornia</i> and other annuals colonizing mud and sand in North Dublin Bay SAC.       | Habitat area;<br>Habitat distribution;<br>Physical structure;<br>Vegetation structure;<br>Vegetation composition. |
| Atlantic salt meadows ( <i>Glaucopuccinellietalia maritima</i> ) [1330] | To maintain the favourable conservation condition of Atlantic salt meadows ( <i>Glaucopuccinellietalia maritima</i> ) in North Dublin Bay SAC. | Habitat area;<br>Habitat distribution;<br>Physical structure;<br>Vegetation structure;<br>Vegetation composition. |
| Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) [1410]        | To maintain the favourable conservation condition of Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) in North Dublin Bay SAC.        | Habitat area;<br>Habitat distribution;<br>Physical structure;<br>Vegetation structure;<br>Vegetation composition. |
| Embryonic shifting dunes [2110]                                         | To restore the favourable conservation condition of Embryonic                                                                                  | Habitat area;<br>Habitat distribution;<br>Physical structure;                                                     |

| Relevant QI                                                                            | Site-Specific Conservation Objective (NPWS, 2013b)                                                                                                             | Site-Specific Attributes Potentially Affected By the Proposed Scheme                                                                |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                        | shifting dunes in North Dublin Bay SAC.                                                                                                                        | Vegetation structure;<br>Vegetation composition.                                                                                    |
| Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] | To restore the favourable conservation condition of Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes') in North Dublin Bay SAC. | No link identified (see <b>Section 6.1.2</b> ).                                                                                     |
| Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]                     | To restore the favourable conservation condition of Fixed coastal dunes with herbaceous vegetation ('grey dunes') in North Dublin Bay SAC.                     | No link identified (see <b>Section 6.1.2</b> ).                                                                                     |
| Humid dune slacks [2190]                                                               | To restore the favourable conservation condition of Humid dune slacks in North Dublin Bay SAC.                                                                 | Habitat area;<br>Habitat distribution;<br>Physical structure;<br>Vegetation structure;<br>Vegetation composition.                   |
| Petalwort <i>Petalophyllum ralfsii</i> [1395]                                          | To maintain the favourable conservation condition of Petalwort in North Dublin Bay SAC.                                                                        | Distributions of populations;<br>Population size;<br>Area of suitable habitat;<br>Hydrological conditions;<br>Vegetation structure. |

### 6.2.2. South Dublin Bay SAC (000210)

Site-specific Conservation Objectives for South Dublin Bay SAC are available (NPWS, 2013d). **Table 6-7** identifies the Conservation Objectives which could be adversely affected by the Proposed Scheme, for 'relevant' QIs scoped into the assessment.

**Table 6-7: Conservation Objectives and Attributes for South Dublin Bay SAC**

| Relevant QI                                                       | Site-Specific Conservation Objective (NPWS, 2013d)                                                                                       | Site-Specific Attributes Potentially Affected By the Proposed Scheme                  |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Mudflats and sandflats not covered by seawater at low tide [1140] | To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in South Dublin Bay SAC. | Habitat area;<br>Community extent;<br>Community structure;<br>Community distribution. |

### 6.2.3. South Dublin Bay and River Tolka Estuary SPA (004024)

Site-specific Conservation Objectives for South Dublin Bay and River Tolka Estuary SPA are available (NPWS, 2015c). **Table 6-8** identifies the Conservation Objectives which could be adversely affected by the Proposed Scheme, for 'relevant' SCIs scoped into the assessment.

**Table 6-8: Conservation Objectives and Attributes for South Dublin Bay and River Tolka Estuary SPA**

| Relevant SCI                                                  | Site-Specific Conservation Objective (NPWS, 2015c)          | Site-Specific Attributes Potentially Affected By the Proposed Scheme |
|---------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------|
| Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046] | To maintain the favourable conservation condition of Light- | Population trend;                                                    |

| Relevant SCI                                               | Site-Specific Conservation Objective (NPWS, 2015c)                                                                                                                                                                           | Site-Specific Attributes Potentially Affected By the Proposed Scheme                                                                                                                                                   |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                            | bellied Brent Goose in South Dublin Bay and River Tolka Estuary SPA.                                                                                                                                                         | Distribution.                                                                                                                                                                                                          |
| Oystercatcher <i>Haematopus ostralegus</i> [A130]          | To maintain the favourable conservation condition of Oystercatcher in South Dublin Bay and River Tolka Estuary SPA.                                                                                                          | Population trend;<br>Distribution.                                                                                                                                                                                     |
| Ringed Plover <i>Charadrius hiaticula</i> [A137]           | To maintain the favourable conservation condition of Light-bellied Brent Goose in South Dublin Bay and River Tolka Estuary SPA.                                                                                              | Population trend;<br>Distribution.                                                                                                                                                                                     |
| Grey Plover <i>Pluvialis squatarola</i> [A141]             | Grey Plover is proposed for removal from the list of Special Conservation Interests for South Dublin Bay and River Tolka Estuary SPA. As a result, a site-specific conservation objective has not been set for this species. | N/A                                                                                                                                                                                                                    |
| Knot <i>Calidris canutus</i> [A143]                        | To maintain the favourable conservation condition of Knot in South Dublin Bay and River Tolka Estuary SPA.                                                                                                                   | Population trend;<br>Distribution.                                                                                                                                                                                     |
| Sanderling <i>Calidris alba</i> [A144]                     | To maintain the favourable conservation condition of Sanderling in South Dublin Bay and River Tolka Estuary SPA.                                                                                                             | Population trend;<br>Distribution.                                                                                                                                                                                     |
| Dunlin <i>Calidris alpina alpina</i> [A149]                | To maintain the favourable conservation condition of Dunlin in South Dublin Bay and River Tolka Estuary SPA.                                                                                                                 | Population trend;<br>Distribution.                                                                                                                                                                                     |
| Bar-tailed Godwit <i>Limosa lapponica</i> [A157]           | To maintain the favourable conservation condition of Bar-tailed Godwit in South Dublin Bay and River Tolka Estuary SPA.                                                                                                      | Population trend;<br>Distribution.                                                                                                                                                                                     |
| Redshank <i>Tringa totanus</i> [A162]                      | To maintain the favourable conservation condition of Redshank in South Dublin Bay and River Tolka Estuary SPA.                                                                                                               | Population trend;<br>Distribution.                                                                                                                                                                                     |
| Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179] | To maintain the favourable conservation condition of Black-headed Gull in South Dublin Bay and River Tolka Estuary SPA.                                                                                                      | Population trend;<br>Distribution.                                                                                                                                                                                     |
| Roseate Tern <i>Sterna dougallii</i> [A192]                | To maintain the favourable conservation condition of Roseate Tern in South Dublin Bay and River Tolka Estuary SPA.                                                                                                           | Passage population;<br>Distribution;<br>Prey biomass;<br>Barriers to connectivity;<br>Disturbance at roosting site.                                                                                                    |
| Common Tern <i>Sterna hirundo</i> [A193]                   | To maintain the favourable conservation condition of Common Tern in South Dublin Bay and River Tolka Estuary SPA.                                                                                                            | Breeding population abundance;<br>Productivity rate;<br>Passage population;<br>Distribution;<br>Prey biomass available;<br>Barriers to connectivity;<br>Disturbance at breeding site;<br>Disturbance at roosting site. |
| Arctic Tern <i>Sterna paradisaea</i> [A194]                | To maintain the favourable conservation condition of Arctic Tern                                                                                                                                                             | Passage population;<br>Distribution;                                                                                                                                                                                   |

| Relevant SCI    | Site-Specific Conservation Objective (NPWS, 2015c)                                                                                                                                                       | Site-Specific Attributes Potentially Affected By the Proposed Scheme                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                 | in South Dublin Bay and River Tolka Estuary SPA.                                                                                                                                                         | Prey biomass available;<br>Barriers to connectivity;<br>Disturbance at roosting site. |
| Wetlands [A999] | To maintain the favourable conservation condition of the wetland habitat in South Dublin Bay and River Tolka Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it. | Habitat area.                                                                         |

#### 6.2.4. North Bull Island SPA (004006)

Site-specific Conservation Objectives for North Bull Island SPA are available (NPWS, 2015b). **Table 6-9** identifies the Conservation Objectives which could be adversely affected by the Proposed Scheme, for 'relevant' SCIs scoped into the assessment.

**Table 6-9: Conservation Objectives and Attributes for North Bull Island SPA**

| Relevant SCI                                                  | Site-Specific Conservation Objective (NPWS, 2015b)                                                       | Site-Specific Attributes Potentially Affected By the Proposed Scheme |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046] | To maintain the favourable conservation condition of Light-bellied Brent Goose in North Bull Island SPA. | Population trend;<br>Distribution.                                   |
| Shelduck <i>Tadorna tadorna</i> [A048]                        | To maintain the favourable conservation condition of Shelduck in North Bull Island SPA.                  | Population trend;<br>Distribution.                                   |
| Teal <i>Anas crecca</i> [A052]                                | To maintain the favourable conservation condition of Teal in North Bull Island SPA.                      | Population trend;<br>Distribution.                                   |
| Pintail <i>Anas acuta</i> [A054]                              | To maintain the favourable conservation condition of Pintail in North Bull Island SPA.                   | Population trend;<br>Distribution.                                   |
| Shoveler <i>Anas clypeata</i> [A056]                          | To maintain the favourable conservation condition of Shoveler in North Bull Island SPA.                  | Population trend;<br>Distribution.                                   |
| Oystercatcher <i>Haematopus ostralegus</i> [A130]             | To maintain the favourable conservation condition of Oystercatcher in North Bull Island SPA.             | Population trend;<br>Distribution.                                   |
| Golden Plover <i>Pluvialis apricaria</i> [A140]               | To maintain the favourable conservation condition of Golden Plover in North Bull Island SPA.             | Population trend;<br>Distribution.                                   |
| Grey Plover <i>Pluvialis squatarola</i> [A141]                | To maintain the favourable conservation condition of Grey Plover in North Bull Island SPA.               | Population trend;<br>Distribution.                                   |
| Knot <i>Calidris canutus</i> [A143]                           | To maintain the favourable conservation condition of Knot in North Bull Island SPA.                      | Population trend;<br>Distribution.                                   |
| Sanderling <i>Calidris alba</i> [A144]                        | To maintain the favourable conservation condition of Sanderling in North Bull Island SPA.                | Population trend;<br>Distribution.                                   |

| Relevant SCI                                               | Site-Specific Conservation Objective (NPWS, 2015b)                                                                                                                                | Site-Specific Attributes Potentially Affected By the Proposed Scheme |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Dunlin <i>Calidris alpina alpina</i> [A149]                | To maintain the favourable conservation condition of Dunlin in North Bull Island SPA.                                                                                             | Population trend;<br>Distribution.                                   |
| Black-tailed Godwit <i>Limosa limosa</i> [A156]            | To maintain the favourable conservation condition of Black-tailed Godwit in North Bull Island SPA.                                                                                | Population trend;<br>Distribution.                                   |
| Bar-tailed Godwit <i>Limosa lapponica</i> [A157]           | To maintain the favourable conservation condition of Bar-tailed Godwit in North Bull Island SPA.                                                                                  | Population trend;<br>Distribution.                                   |
| Curlew <i>Numenius arquata</i> [A160]                      | To maintain the favourable conservation condition of Curlew in North Bull Island SPA.                                                                                             | Population trend;<br>Distribution.                                   |
| Redshank <i>Tringa totanus</i> [A162]                      | To maintain the favourable conservation condition of Redshank in North Bull Island SPA.                                                                                           | Population trend;<br>Distribution.                                   |
| Turnstone <i>Arenaria interpres</i> [A169]                 | To maintain the favourable conservation condition of Turnstone in North Bull Island SPA.                                                                                          | Population trend;<br>Distribution.                                   |
| Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179] | To maintain the favourable conservation condition of Black-headed Gull in North Bull Island SPA.                                                                                  | Population trend;<br>Distribution.                                   |
| Wetlands [A999]                                            | To maintain the favourable conservation condition of the wetland habitat in North Bull Island SPA as a resource for the regularly occurring migratory waterbirds that utilise it. | Habitat area.                                                        |

### 6.2.5. North-west Irish Sea SPA (004236)

Site-specific Conservation Objectives for North-west Irish Sea SPA are available (NPWS, 2023a). **Table 6-10** identifies the Conservation Objectives which could be adversely affected by the Proposed Scheme, for 'relevant' SCIs scoped into the assessment.

**Table 6-10: Conservation Objectives and Attributes for North-west Irish Sea SPA**

| Relevant SCI                                    | Site-Specific Conservation Objective (NPWS, 2023a)                                                     | Site-Specific Attributes Potentially Affected By the Proposed Scheme                                                                                                                   |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Red-throated Diver <i>Gavia stellata</i> [A001] | To maintain the favourable conservation condition of red-throated diver at North-west Irish Sea SPA.   | Non-breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent and abundance;<br>Disturbance across the site;<br>Barriers to connectivity and site use. |
| Great Northern Diver <i>Gavia immer</i> [A003]  | To maintain the favourable conservation condition of great northern diver at North-west Irish Sea SPA. | Non-breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent and abundance;<br>Disturbance across the site;<br>Barriers to connectivity and site use. |
| Fulmar <i>Fulmarus glacialis</i> [A009]         | To maintain the favourable conservation condition of fulmar at North-west Irish Sea SPA.               | Population size;<br>Spatial distribution;                                                                                                                                              |

| Relevant SCI                                               | Site-Specific Conservation Objective (NPWS, 2023a)                                                         | Site-Specific Attributes Potentially Affected By the Proposed Scheme                                                                                                                   |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                            |                                                                                                            | Forage spatial distribution, extent, abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.                                                          |
| Manx Shearwater <i>Puffinus puffinus</i> [A013]            | To maintain the favourable conservation condition of manx shearwater at North-west Irish Sea SPA.          | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent, abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.    |
| Cormorant <i>Phalacrocorax carbo</i> [A017]                | To maintain the favourable conservation condition of cormorant at North-west Irish Sea SPA.                | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent, abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.    |
| Shag <i>Phalacrocorax aristotelis</i> [A018]               | To maintain the favourable conservation condition of shag at North-west Irish Sea SPA.                     | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent, abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.    |
| Common Scoter <i>Melanitta nigra</i> [A065]                | To maintain the favourable conservation condition of common scoter at North-west Irish Sea SPA.            | Non-breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent and abundance;<br>Disturbance across the site;<br>Barriers to connectivity and site use. |
| Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179] | To maintain the favourable conservation condition of black-headed gull at North-west Irish Sea SPA.        | Non-breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent and abundance;<br>Disturbance across the site;<br>Barriers to connectivity and site use. |
| Common Gull <i>Larus canus</i> [A182]                      | To maintain the favourable conservation condition of common gull at North-west Irish Sea SPA.              | Non-breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent and abundance;<br>Disturbance across the site;<br>Barriers to connectivity and site use. |
| Lesser Black-backed Gull <i>Larus fuscus</i> [A183]        | To maintain the favourable conservation condition of lesser black-backed gull at North-west Irish Sea SPA. | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent and abundance;<br>Disturbance across the site;<br>Barriers to connectivity and site use.     |
| Herring Gull <i>Larus argentatus</i> [A184]                | To maintain the favourable conservation condition of herring gull at North-west Irish Sea SPA.             | Population size;<br>Spatial distribution;<br>Forage spatial distribution, extent and abundance;<br>Disturbance across the site;<br>Barriers to connectivity and site use.              |

| Relevant SCI                                        | Site-Specific Conservation Objective (NPWS, 2023a)                                                        | Site-Specific Attributes Potentially Affected By the Proposed Scheme                                                                                                                   |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Great Black-backed Gull <i>Larus marinus</i> [A187] | To maintain the favourable conservation condition of great black-backed gull at North-west Irish Sea SPA. | Non-breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent and abundance;<br>Disturbance across the site;<br>Barriers to connectivity and site use. |
| Kittiwake <i>Rissa tridactyla</i> [A188]            | To maintain the favourable conservation condition of kittiwake at North-west Irish Sea SPA.               | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent , abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.   |
| Roseate Tern <i>Sterna dougallii</i> [A192]         | To maintain the favourable conservation condition of roseate tern at North-west Irish Sea SPA.            | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent , abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.   |
| Common Tern <i>Sterna hirundo</i> [A193]            | To maintain the favourable conservation condition of common tern at North-west Irish Sea SPA.             | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent , abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.   |
| Arctic Tern <i>Sterna paradisaea</i> [A194]         | To maintain the favourable conservation condition of Arctic tern at North-west Irish Sea SPA.             | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent , abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.   |
| Little Tern <i>Sterna albifrons</i> [A195]          | To maintain the favourable conservation condition of little tern at North-west Irish Sea SPA.             | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent , abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.   |
| Guillemot <i>Uria aalge</i> [A199]                  | To maintain the favourable conservation condition of guillemot at North-west Irish Sea SPA.               | Population size;<br>Spatial distribution;<br>Forage spatial distribution, extent , abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.            |
| Razorbill <i>Alca torda</i> [A200]                  | To maintain the favourable conservation condition of razorbill at North-west Irish Sea SPA.               | Population size;<br>Spatial distribution;<br>Forage spatial distribution, extent , abundance and availability;<br>Disturbance across the site;<br>Barriers to connectivity.            |
| Puffin <i>Fratercula arctica</i> [A204]             | To maintain the favourable conservation condition of puffin at North-west Irish Sea SPA.                  | Breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent , abundance and availability;<br>Disturbance across the site;                                |

| Relevant SCI                                   | Site-Specific Conservation Objective (NPWS, 2023a)                                            | Site-Specific Attributes Potentially Affected By the Proposed Scheme                                                                                                                                   |
|------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Little Gull <i>Hydrocoloeus minutus</i> [A862] | To maintain the favourable conservation condition of little gull at North-west Irish Sea SPA. | Barriers to connectivity.<br>Non-breeding population size;<br>Spatial distribution;<br>Forage spatial distribution, extent and abundance;<br>Disturbance across the site;<br>Barriers to connectivity. |

### 6.2.6. Rockabill to Dalkey Island SAC (003000)

Site-specific Conservation Objectives for Rockabill to Dalkey Island SAC are available (NPWS, 2013e). **Table 6-11** identifies the Conservation Objectives which could be adversely affected by the Proposed Scheme, for 'relevant' QIs scoped into the assessment.

**Table 6-11: Conservation Objectives and Attributes for Rockabill to Dalkey Island SAC**

| Relevant QIs                                     | Site-Specific Conservation Objective (NPWS, 2013e)                                                       | Site-Specific Attributes Potentially Affected By the Proposed Scheme |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Reefs [1170]                                     | To maintain the favourable conservation condition of Reefs in Rockabill to Dalkey Island SAC.            | Habitat area;<br>Habitat distribution;<br>Community structure.       |
| Harbour porpoise <i>Phocoena phocoena</i> [1351] | To maintain the favourable conservation condition of Harbour porpoise in Rockabill to Dalkey Island SAC. | Access to suitable habitat;<br>Disturbance.                          |

### 6.2.7. Dalkey Islands SPA (004172)

First Order site-specific Conservation Objectives for Dalkey Islands SPA are available (NPWS, 2022b). **Table 6-12** identifies the Conservation Objectives which could be adversely affected by the Proposed Scheme, for 'relevant' SCI scoped into the assessment.

**Table 6-12: Conservation Objectives and Attributes for Dalkey Islands SPA**

| Relevant SCI                                    | First Order Site-Specific Conservation Objective (NPWS, 2022b)                                                                          | Site-Specific Attributes Potentially Affected By the Proposed Scheme |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Roseate Tern ( <i>Sterna dougallii</i> ) [A192] | To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. | N/A                                                                  |
| Common Tern ( <i>Sterna hirundo</i> ) [A193]    |                                                                                                                                         |                                                                      |
| Arctic Tern ( <i>Sterna paradisaea</i> ) [A194] |                                                                                                                                         |                                                                      |

### 6.2.8. Howth Head Coast SPA (004113)

First Order site-specific Conservation Objectives for Howth Head SPA are available (NPWS, 2022a). **Table 6-13** identifies the Conservation Objectives which could be adversely affected by the Proposed Scheme, for 'relevant' SCI scoped into the assessment.

**Table 6-13: Conservation Objectives and Attributes for Howth Head Coast SPA**

| Relevant SCI                             | First Order Site-Specific Conservation Objective (NPWS, 2022a)                                                                          | Site-Specific Attributes Potentially Affected By the Proposed Scheme |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Kittiwake <i>Rissa tridactyla</i> [A188] | To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA. | N/A                                                                  |

## 6.3. Predicted Effects

### 6.3.1. Predicted Effects to SACs

To facilitate the road improvements and construction of the new bridge crossing proposed as part of the Proposed Scheme, habitat clearance, including tree and scrub removal, topsoil stripping and subsequent import, and the compaction of embankment fill, etc. will be required. These proposed works introduce the potential for suspended silt or contaminants to enter the surface-water and groundwater systems in immediate proximity to the Proposed Scheme area (i.e. the River Liffey and/or Dublin GWB) and represent a source of potential adverse impact to the integrity of any hydrologically or hydrogeologically-connected European Site(s) and their QIs.

The prediction of potential effects from the Proposed Scheme (alone) to the integrity of SACs is presented in this section. Cumulative effects from the Proposed Scheme, in combination with other plans or projects, are presented in **Section 6.3.3**.

#### 6.3.1.1. North Dublin Bay SAC (000206)

**Table 6-14: Prediction of effects on site integrity (QIs) in North Dublin Bay SAC during the construction, operation, and maintenance of the Proposed Scheme**

| Relevant QI                                                               | Effect Pathway(s)                                  | Relevant Site-Level Threat                                                   | Predicted Adverse Effect(s) Trigger(s) to Relevant QIs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mudflats and sandflats not covered by seawater at low tide [1140]         | Surface-water pollution;<br>Groundwater pollution. | Discharges [E03]                                                             | <i>Habitat area; Habitat Distribution; Physical Structure; Vegetation Structure; Vegetation Composition</i> – No works associated with the Proposed Scheme will occur in any QI habitat of North Dublin Bay SAC. The potential for pollutants entering the River Liffey via either surface water- or groundwater flow at the Proposed Scheme area and causing significant adverse effects to the listed attributes of QI habitats of North Dublin Bay SAC is considered extremely unlikely considering such factors as the significant intervening distance between the Proposed Scheme area and North Dublin Bay SAC, the respective assimilative capacities of the River Liffey, Liffey Estuary Upper TWB, and Liffey Estuary Lower TWB, and the mitigation measures to be implemented as part of the Proposed Scheme to avoid or minimise the runoff of pollutants to surface water or groundwater bodies. However, the potential for impact cannot be completely discounted. |
| Annual vegetation of drift lines [1210]                                   |                                                    | Diffuse pollution to surface waters due to other sources not listed [H01.09] |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>Salicornia</i> and other annuals colonising mud and sand [1310]        |                                                    | Other point pollution to surface water [H01.03]                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> ) [1330] |                                                    |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) [1410]          |                                                    |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Embryonic shifting dunes [2110]                                           |                                                    |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Humid dune slacks [2190]                                                  |                                                    |                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Petalwort <i>Petalophyllum ralfsii</i> [1395]                             |                                                    |                                                                              | <i>Distribution of Populations; Population Size; Area of Suitable Habitat; Hydrological Conditions; Vegetation Structure</i> – None predicted. The only known population of Petalwort within North Dublin Bay SAC occurs in proximity to St. Anne's Golf Club, >25 km from the Proposed Scheme area. As such and considering the receiving environment of the Proposed Scheme area, which does not contain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Relevant QI | Effect Pathway(s) | Relevant Site-Level Threat | Predicted Adverse Effect(s) Trigger(s) to Relevant QIs                                                                                                                                                                                                                                                                                                               |
|-------------|-------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |                   |                            | suitable habitat for Petalwort, no direct impacts to this population will occur. Further, testament to the terrestrial nature of this QI species, no adverse effects to the listed attributes resulting from potential downstream pollution resulting from surface water- or groundwater runoff to the River Liffey from the Proposed Scheme is considered possible. |

### 6.3.1.2. South Dublin Bay SAC (000210)

**Table 6-15: Prediction of effects on site integrity (QIs) in South Dublin Bay SAC during the construction, operation, and maintenance of the Proposed Scheme**

| Relevant QI                                                       | Effect Pathway(s)                                  | Relevant Site-Level Threat                       | Predicted Adverse Effect(s) Trigger(s) to Relevant QIs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mudflats and sandflats not covered by seawater at low tide [1140] | Surface-water pollution;<br>Groundwater pollution. | Discharges [E03]<br>Marine water pollution [H03] | <i>Habitat area; Community Extent; Community Structure</i> – No works associated with the Proposed Scheme will occur in any QI habitat of South Dublin Bay SAC. The potential for pollutants entering the River Liffey via either surface water or groundwater flow at the Proposed Scheme area and causing significant adverse effects to the listed attributes of the QI habitat of South Dublin Bay SAC is considered extremely unlikely considering such factors as the significant intervening distance between the Proposed Scheme area and North Dublin Bay SAC, the respective assimilative capacities of the River Liffey, Liffey Estuary Upper TWB, and Liffey Estuary Lower TWB, and the mitigation measures to be implemented as part of the Proposed Scheme to avoid or minimise the runoff of pollutants to surface water or groundwater bodies. However, the potential for impact cannot be completely discounted. |

### 6.3.1.3. Rockabill to Dalkey Island SAC (003000)

**Table 6-16: Prediction of effects on site integrity (QIs) in Rockabill to Dalkey Island SAC during the construction, operation, and maintenance of the Proposed Scheme**

| Relevant QI                                            | Effect Pathway(s)                                  | Relevant Site-Level Threat                          | Predicted Adverse Effect(s) Trigger(s) to Relevant QIs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Harbour porpoise<br><i>Phocoena phocoena</i><br>[1351] | Surface-water pollution;<br>Groundwater pollution. | Discharges [E03]<br>Utility and service lines [D02] | <i>Distribution</i> – Harbour Porpoise are common throughout Dublin Bay and across the entire east coast of Ireland (Berrow <i>et al.</i> , 2008; Berrow and O'Brien, 2013; O'Brien and Berrow, 2016). They are known to forage throughout transitional and coastal waterbodies with greater concentrations north of Lambay Island compared to Dublin Bay (Berrow <i>et al.</i> , 2014). There remain significant data gaps in their distance travelled and long-term trends (NPWS, 2019c). Therefore, they are assumed to travel within potential pollution zones. The potential for pollutants entering the River Liffey via either surface-water or groundwater flow at the Proposed Scheme area and causing significant adverse effects to Harbour Porpoise is considered extremely unlikely considering such factors as the significant intervening distance between the Proposed Scheme area and Rockabill to Dalkey Island SAC or habitat utilised by Harbour Porpoise, the respective assimilative capacities of the River Liffey, Liffey Estuary Upper TWB, Liffey Estuary Lower TWB, and Dublin Bay CWB, and the mobility of individuals/pods of Harbour Porpoise across shallow waters and the continental shelf, which allows for additional foraging routes, reducing exposure to pollutants, etc. Harbour Porpoise hold favourable status and population trends with favourable future prospects and a stable overall trend in conservation status (NPWS 2019a). However, the potential for impact cannot be completely discounted. |
| Reefs [1170]                                           |                                                    |                                                     | <i>Habitat area; habitat distribution; community structure</i> – No works associated with the Proposed Scheme will occur in any QI habitat of Rockabill to Dalkey Island SAC. The potential for pollutants entering the River Liffey via either surface water or groundwater flow at the Proposed Scheme area and causing significant adverse effects to the listed attributes of the QI habitat of Rockabill to Dalkey Island SAC is considered extremely unlikely considering such factors as the significant intervening distance between the Proposed Scheme area and Rockabill to Dalkey Island SAC, the respective assimilative capacities of the River Liffey, Liffey Estuary Upper TWB, and Liffey Estuary Lower TWB, and the mitigation measures to be implemented as part of the Proposed Scheme to avoid or minimise the runoff of pollutants to surface water or groundwater bodies. However, the potential for impact cannot be completely discounted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

### 6.3.2. Predicted Effects to SPAs

The prediction of potential effects from the Proposed Scheme (alone) to the integrity of SPAs is presented in this section. Cumulative effects from the Proposed Scheme in combination with other plans and projects are presented in **Section 6.3.3**. All SCI species present in SPAs are discussed together, as predicted impacts are anticipated to have the same magnitude and extent.

**Table 6-17: Prediction of effects on site integrity (SCIs) in Dublin Bay SPAs during the construction, operation, and maintenance of the Proposed Scheme**

| Relevant SCI                                                  | Respective SPA                                                      | Effect Pathway(s)       | Relevant Site-Level Threat | Predicted Adverse Effect(s) Trigger(s) to Relevant QIs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------|---------------------------------------------------------------------|-------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Red-throated Diver <i>Gavia stellata</i> [A001]               | North-west Irish Sea SPA                                            | Surface-water pollution | Discharges [E03]           | <p><b>Food Source Availability</b> – The habitat clearance, including tree and scrub removal, topsoil stripping and subsequent import, and the compaction of embankment fill required to facilitate the construction phase of the Proposed Scheme introduces the potential for suspended silt or contaminants entering the surface-water and groundwater systems in immediate proximity to the Proposed Scheme area (i.e., the River Liffey and/or Dublin GWB) and represents a source of potential adverse impact to the integrity of any hydrologically connected SPAs and their SCIs. Dublin Bay holds international importance for wintering waterbirds and supports internationally important numbers of individual waterbird species (Tierney <i>et al.</i>, 2017). At low tide, the Tolka Estuary, Liffey Channel, and Dublin Port region was found to support over 10,000 waterbirds (Tierney <i>et al.</i>, 2017). Trends in populations of breeding and non-breeding birds in Dublin Bay are extensively monitored as part of the I-WeBS surveys (Lewis <i>et al.</i>, 2019). Of those monitored, 12 species highlighted increasing trends and a further 12 highlighted decreasing trends. Seabirds are not deemed to be at risk of altered food sources due to foraging at sea. Considering the significant intervening distance between the Proposed Scheme area and the listed European Sites, the largely marine and/or coastal ecologies of the majority of their associated SCI species, and the mitigation measures to be implemented as part of the Proposed Scheme to avoid or minimise the runoff of pollutants to surface waters, no significant adverse effects to the listed attributes of SCI bird species or SCI-supporting wetland habitat (where present) in South Dublin Bay and River Tolka Estuary SPA, North Bull</p> |
| Great Northern Diver <i>Gavia immer</i> [A003]                | North-west Irish Sea SPA                                            |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Fulmar <i>Fulmarus glacialis</i> [A009]                       | North-west Irish Sea SPA                                            |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Manx Shearwater <i>Puffinus puffinus</i> [A013]               | North-west Irish Sea SPA                                            |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Cormorant <i>Phalacrocorax carbo</i> [A017]                   | North-west Irish Sea SPA                                            |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Shag <i>Phalacrocorax aristotelis</i> [A018]                  | North-west Irish Sea SPA                                            |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046] | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Shelduck <i>Tadorna tadorna</i> [A048]                        | North Bull Island SPA                                               |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Teal <i>Anas crecca</i> [A052]                                | North Bull Island SPA                                               |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Pintail <i>Anas acuta</i> [A054]                              | North Bull Island SPA                                               |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Shoveler <i>Anas clypeata</i> [A056]                          | North Bull Island SPA                                               |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Common Scoter <i>Melanitta nigra</i> [A065]                   | North-west Irish Sea SPA                                            |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Oystercatcher <i>Haematopus ostralegus</i> [A130]             | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Ringed Plover <i>Charadrius hiaticula</i> [A137]              | South Dublin Bay and River Tolka Estuary SPA                        |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Golden Plover <i>Pluvialis apricaria</i> [A140]               | North Bull Island SPA                                               |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Grey Plover <i>Pluvialis squatarola</i> [A141]                | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Knot <i>Calidris canutus</i> [A143]                           | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Sanderling <i>Calidris alba</i> [A144]                        | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Dunlin <i>Calidris alpina alpina</i> [A149]                   | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Black-tailed Godwit <i>Limosa limosa</i> [A156]               | North Bull Island SPA                                               |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Bar-tailed Godwit <i>Limosa lapponica</i> [A157]              | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Curlew <i>Numenius arquata</i> [A160]                         | North Bull Island SPA                                               |                         |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Relevant SCI                                               | Respective SPA                                                                                | Effect Pathway(s) | Relevant Site-Level Threat | Predicted Adverse Effect(s) Trigger(s) to Relevant QIs                                                      |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------|----------------------------|-------------------------------------------------------------------------------------------------------------|
| Redshank <i>Tringa totanus</i> [A162]                      | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA                           |                   |                            | Island SPA, North-west Irish Sea SPA, Dalkey Islands SPA, and Howth Head Coast SPA are considered possible. |
| Turnstone <i>Arenaria interpres</i> [A169]                 | North Bull Island SPA                                                                         |                   |                            |                                                                                                             |
| Little Gull ( <i>Larus minutus</i> ) [A177]                | North-west Irish Sea SPA                                                                      |                   |                            |                                                                                                             |
| Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179] | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA, North-west Irish Sea SPA |                   |                            |                                                                                                             |
| Common Gull <i>Larus canus</i> [A182]                      | North-west Irish Sea SPA                                                                      |                   |                            |                                                                                                             |
| Lesser Black-backed Gull <i>Larus fuscus</i> [A183]        | North-west Irish Sea SPA                                                                      |                   |                            |                                                                                                             |
| Herring Gull <i>Larus argentatus</i> [A184]                | North-west Irish Sea SPA                                                                      |                   |                            |                                                                                                             |
| Great Black-backed Gull <i>Larus marinus</i> [A187]        | North-west Irish Sea SPA                                                                      |                   |                            |                                                                                                             |
| Kittiwake ( <i>Rissa tridactyla</i> ) [A188]               | North-west Irish Sea SPA, Howth Head Coast SPA                                                |                   |                            |                                                                                                             |
| Roseate Tern ( <i>Sterna dougallii</i> ) [A192]            | South Dublin Bay and River Tolka Estuary SPA, North-west Irish Sea SPA, Dalkey Islands SPA    |                   |                            |                                                                                                             |
| Common Tern <i>Sterna hirundo</i> [A193]                   | South Dublin Bay and River Tolka Estuary SPA, North-west Irish Sea SPA, Dalkey Islands SPA    |                   |                            |                                                                                                             |
| Arctic Tern <i>Sterna paradisaea</i> [A194]                | South Dublin Bay and River Tolka Estuary SPA, North-west Irish Sea SPA, Dalkey Islands SPA    |                   |                            |                                                                                                             |
| Little Tern <i>Sterna albifrons</i> [A195]                 | North-west Irish Sea SPA                                                                      |                   |                            |                                                                                                             |
| Guillemot <i>Uria aalge</i> [A199]                         | North-west Irish Sea SPA                                                                      |                   |                            |                                                                                                             |
| Razorbill ( <i>Alca torda</i> ) [A200]                     | North-west Irish Sea SPA                                                                      |                   |                            |                                                                                                             |
| Puffin ( <i>Fratercula arctica</i> ) [A204]                | North-west Irish Sea SPA                                                                      |                   |                            |                                                                                                             |
| Wetland and Waterbirds [A999]                              | South Dublin Bay and River Tolka Estuary SPA, North Bull Island SPA                           |                   |                            |                                                                                                             |

### 6.3.3. In Combination Effects

Legislation, guidance, and case law (See **Section 1.1** and **Section 3.1**) requires that in-combination effects with other plans or projects are considered. On this basis, a range of other plans and projects were considered in terms of their potential to have in-combination effects with the Proposed Scheme. The assessment of in-combination effects has regard for developments potentially affecting the downstream European Sites, with which a potential pathway has been identified. The following sections outline the results of this assessment. To undertake this review, data sources including the Kildare County Council (KCC)

planning search website, An Coimisiún Pleanála planning search function, the Department of Housing, Local Government and Heritage's (DHLGH) Environmental Impact Assessment (EIA) Portal, the EPA website, and local, regional, and national plans were examined.

### 6.3.3.1. Plans

#### National Development Plan

The National Development Plan (NDP) 2021-2030 (Department of Public Expenditure and Reform (DPER), 2021), which was subject to both SEA and AA, designates a number of National Strategic Outcomes and Priorities, including Sustainable Mobility and Sustainable Management of Water and other Environmental Resources. Under the NDP, the government brought forward a €165 billion investment package up to 2030, towards urban regeneration and development, development of road and rail networks, telecommunications infrastructure, and other projects.

These Strategic Priorities carry the potential for in-combination impacts with the Proposed Scheme on a variety of potential receptors, through pathways of habitat fragmentation/destruction, increased disturbance, and surface water pollution/changes of groundwater quality. However, individual projects arising from these priorities will be subject to their own environmental assessments, where required. The NDP 2021-2030 also sets biodiversity as a priority (i.e. Enhanced Amenity and Heritage – National Strategic outcome 7).

Due to the strategic nature of plans and given the limited scale, location, and construction duration of the Proposed Scheme, the in-combination impacts from the NDP and the Proposed Scheme are not predicted to result in any LSEs to any European Site(s).

#### National Biodiversity Action Plan (2023-2030)

The National Biodiversity Action Plan (NBAP) 2023-2030 (DHLGH, 2024) sets the national biodiversity agenda for the period 2023-2030 and aims to deliver the transformative changes required to the ways in which we value and protect nature. The 4<sup>th</sup> NBAP strives for a “*whole of government, whole of society*” approach to the governance and conservation of biodiversity. The aim is to ensure that every citizen, community, business, local authority, semi-state and state agency has an awareness of biodiversity and its importance, and of the implications of its loss, while also understanding how they can act to address the biodiversity emergency as part of a renewed national effort to “*act for nature*”. Therefore, the in-combination impacts from the NBAP and the Proposed Scheme are not predicted to result in any LSEs to any European Site(s).

#### Regional Spatial and Economic Strategy for the Eastern and Midland Region 2019-2031

The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 (Eastern and Midland Regional Assembly (EMRA), 2019) supports the implementation of national government policies and the National Planning Framework and establishes a framework for local development and spatial planning in the 12 local authorities of the region. Chapter 5 sets out the Dublin Metropolitan Area Strategic Plan (MASP). The MASP sets out a plan for the future growth of the metropolitan area, which includes Celbridge and the surrounding area. Included in the MASP is the plan to extend the DART to Celbridge-Hazelhatch Station. The Railway Order Application for the Project was submitted in March 2023 and approved in November 2024 by An Coimisiún Pleanála. The MASP also includes numerous policy objectives for the protection and enhancement of biodiversity. The plans and projects arising from the RSES will be subject to their own environmental assessments, and because of the numerous objectives for the protection of biodiversity, the in-combination impacts from the RSES and the Proposed Scheme are not predicted to result in any LSEs to any European Site(s).

#### Kildare County Development Plan 2023-2029

The Kildare County Development Plan 2023-2029 (KCC, 2023) sets out the strategy for the planning and sustainable development of County Kildare. The objectives within the plan include development which has the potential to have ecological impacts. However, the plan also includes numerous objectives for biodiversity protection and enhancement. Relevant objectives within the plan include:

- TM O66 – relates to the implementation of road and bridge projects and regional road improvements. Among the listed projects are a cycle and pedestrian bridge in Celbridge and improvements to the R405;
- IN O7 – “Protect recognised salmonid water courses in conjunction with Inland Fisheries Ireland such as the Liffey catchment, which are recognised to be exceptional in supporting salmonid fish species”; and
- HO O3 – “Co-operate with the Eastern and Midland Regional Assembly in planning for new homes and meeting housing needs for the Dublin Metropolitan Area (which includes Maynooth, Leixlip, Celbridge, and Kilcock) through the implementation of the Dublin Metropolitan Area Strategic Plan.”

Developments arising from the plan will be subject to their own environmental assessments, and because of the numerous objectives for the protection of biodiversity, the in-combination impacts from the Kildare County Development Plan 2023-2029 and the Proposed Scheme are not predicted to result in any LSEs to any European Site(s).

### Celbridge Local Area Plan 2017-2023

The Celbridge Local Area Plan 2017-2023 (KCC, 2017), which has not been superseded, sets out a Key Development Area based around the middle section of the Proposed Scheme; ‘KDA 5 Simmonstown: New Residential Area’. This is an area of 35 ha and it is estimated that the area could include 1,050 housing units. Development of this area is not planned to take place until the construction of the Proposed Scheme is complete, and development of the area will be subject to its own environmental assessments. Therefore, the in-combination impacts from the Celbridge Local Area Plan and the Proposed Scheme are not predicted to result in any LSEs to any European Site(s).

#### 6.3.3.2. Projects

A search was conducted of planning applications (projects) within the vicinity of the Proposed Scheme using the My Plan map viewer<sup>6</sup>, An Coimisiún Pleanála planning search function<sup>7</sup>, KCC planning search<sup>8</sup> and the DHLGH EIA portal<sup>9</sup>.

The online planning system for KCC was consulted for permitted planning applications within 5 km of the Proposed Scheme. The search was limited to the five-year period preceding the date of issue of this report and excluded retention applications (i.e. typically local-scale residential or commercial developments where an impact has already occurred), incomplete, withdrawn, and refused applications.

Most of the applications in the immediate vicinity (i.e. within 200 m) of the Proposed Scheme relate to small scale residential development within Celbridge (i.e. domestic extensions, change of use, etc.). In the wider local area (i.e. within 5 km), there are numerous applications for large developments, predominantly Large Scale Residential Developments and Strategic Housing Developments.

In **Appendix A**, key projects are listed and their potential impacts are discussed. Because of the nature, scale and/or location of these projects, they have potential to give rise to impacts in-combination with the Proposed Scheme. However, they were also subject to environmental assessments and their planning permission was conditioned on the implementation of mitigation measures. Therefore, where described measures are effectively incorporated, the in-combination impacts from these projects and the Proposed Scheme are not predicted to result in any LSEs to any European Site(s).

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<sup>6</sup> Available online at <https://myplan.ie/national-planning-application-map-viewer/> Accessed August 2024.

<sup>7</sup> Available online at <https://www.pleanala.ie/en-ie/case-search> Accessed August 2024.

<sup>8</sup> Available online at: <https://www.eplanning.ie/KildareCC/searchtypes> Accessed August 2024.

<sup>9</sup> Available online at: <http://housinggov.ie/maps.arcgis.com/apps/webappviewer/index.html?id=d7d5a3d48f104ecbb206e7e5f84b71f1>. Accessed August 2024.

#### **6.3.3.3. In-combination conclusion**

Having regard for the above, in-combination impacts from other projects and plans and the Proposed Scheme are not predicted to result in any LSEs to any European Site(s).

## 7. MITIGATION MEASURES

For the purposes of this assessment the term ‘mitigation measures’ are considered to be “*those measures which aim to minimise, or even cancel, the negative impacts on a site that are likely to arise as a result of the implementation of a plan or project. These measures are an integral part of the specifications of a plan or project*” (EC, 2007).

### 7.1. Measures Incorporated into the design

The following measures have been incorporated and integrated into the Proposed Scheme design as described in **Section 2** and illustrated on drawings **MDT902- RPS-01-XX-DR-Z-GA0001 – GA0015** (General Arrangement) and **MDT0902-RPS-01-XX-DR-C-DR0000 to DR0007** (Surface Water Drainage). The key measures are:

- The bridge abutments will be back from River Liffey banks by at least 5 m;
- The bridge abutments will be a minimum of 1 m distance from the foul sewer pipes on either side of the River Liffey crossing. Foul sewers will be protected in place during construction activities;
- The working platforms for the construction of the bridge will be located outside the extent of the fluvial flooding from the River Liffey;
- Aside from at the Liffey crossing, the earthworks do not include significant cuttings, and therefore dewatering of excavations will generally not be required. However, suitable sediment and erosion controls will be implemented for the runoff from the earthworks to ensure that the sediment load in water discharging to the receiving watercourses is kept below permissible levels; and
- Various SuDS features will be integrated, including attenuation basins, attenuation swales, bio-retention trenches, infiltration trenches and hydrocarbon interceptors will treat and attenuate the surface water run-off before it discharges to the receiving watercourse at greenfield run-off rates. This will reduce operational phase pollutant run-off into watercourses, pollutant infiltration into groundwater and potential hydraulic changes.

### 7.2. Framework Measures

#### 7.2.1. Ecological Roles

A Project Ecologist shall be appointed by Kildare County Council before the commencement of works. This suitable qualified and experienced ecologist (hereafter referred to as ‘the Project Ecologist’) shall be utilised in the implementation of the mitigation measures and survey requirements outlined here.

The ecologist shall be a full member of a relevant institution, such as the Chartered Institute of Ecology and Environmental Management (CIEEM) or similar, have relevant experience in the management of mitigation measures and ecological constraints on construction sites/restoration projects, and hold or have previously held a protected species derogation licence in the Republic of Ireland. It shall be their responsibility to supervise and provide recommendations on the execution of any works which have the potential to give rise to negative or positive effects on biodiversity. The Project Ecologist shall be suitable qualified and experienced and have a minimum of five years’ experience completing similar tasks on linear infrastructure projects.

The Contractor shall appoint an Environmental Manager / Clerk of Works (hereafter referred to as the ‘ECoW’) before the commencement of works. This person shall be responsible for carrying out environmental monitoring of the works and ensuring that the mitigation measures, proposed in this EclA and identified by the Project Ecologist, are adhered to. The ECoW shall be suitable qualified and experienced and have a minimum of five years’ experience completing similar tasks on linear infrastructure projects.

### 7.3. Construction Phase

#### 7.3.1. Surface Water and Groundwater Protection Measures

The following measures are required to lessen or avoid the potential impacts of surface water or groundwater pollution:

### **Pollution prevention control measures**

The following mitigation is for the general protection of watercourses:

- Stockpiling of construction materials shall be strictly prohibited within 15 m of any ditch or water-laden channel;
- Hazardous materials including diesel, fuel oils, solvents, paints and/or lubricants stored on temporary or permanent lands made available shall be stored on hardstand and within suitably designed bunded areas with a bund volume of 110% of the capacity of the largest tank/container;
- Re-fuelling of plant shall only take place on hardstand and not within 1 m of any watercourse or surface water feature. Spill containment (i.e. drip trays) shall be used, and spill kits shall be kept available and used if necessary;
- Oils, fuel, chemicals, hydraulic fluids, etc. will not be stored outside construction compounds. They will be stored in designated bunded areas at construction compounds in accordance with established guidelines. Refuelling of construction equipment and the addition of hydraulic oil or lubricants to vehicles/equipment will take place in these designated bunded areas only;
- Waste oils and hydraulic fluids shall be collected in leak-proof containers and removed from the site for disposal or recycling at licensed facilities;
- Waste materials shall be stored in designated areas that are isolated from surface water drains and watercourses. Waste materials will be carefully managed including covering stockpiles during rainfall. Skips shall be closed or covered to prevent materials being blown or washed away;
- All machinery will be routinely checked to ensure no leakage of oils or lubricants occurs during the construction phase. Any spillages will be immediately contained, and the contaminated soil removed from the site and disposed of properly;
- Wash down water from exposed aggregate surfaces, cast-in-place concrete and from concrete trucks will be trapped on-site to allow sediment to settle out before clarified water is released to a drain system;
- No waste will be buried, burnt, or dumped on-site or in land adjacent to the site;
- Only emergency breakdown maintenance shall be carried out on site. Emergency procedures and spill kits will be readily available at strategic and/or sensitive site locations and all relevant personnel will be familiar with emergency procedures; and
- Any contaminated soil shall be removed from the site and disposed of in a licensed facility.

For the protection of watercourses from pollution via surface water run-off, the following measures shall be employed:

- Before works commence, a detailed method statement shall be prepared by the Contractor for works within or adjacent to the River Liffey, Loughlinstown Stream, the unnamed Simmonstown Stud stream and the drainage ditch along the R405. The method statement shall include a map showing the locations of surface water features, works exclusion zones, site compounds, stockpiles, settlement tanks/ponds, temporary percolation areas and silt fencing. The method statement and maps will be submitted to the Project Ecologist and ECoW for approval and any further requirements deemed necessary shall be agreed with the Project Ecologist and ECoW, no less than 6 weeks in advance of works commencing.
- Together with the ECoW, environmental triggers for safe undertaking of the high-risk work items will be agreed between the Contractor and Project Ecologist as well as any other experts or technical specialists needed for high risk aspects of the project and understood and transferred to a spreadsheet by the ECoW. An experienced freshwater ECoW may assist with determining these values, but the responsibility rests with the developer / employer. Triggers for the commencement and abandonment of works will be set. The triggers shall be very clearly defined for each work item. The work items will include but will not be limited to the following:
  - Site set-up and materials/equipment delivery;
  - Earthworks and excavation;

- Instream and bankside works at all watercourses; and
- Concrete pouring.

Commencement and abandonment triggers for the above items will be agreed for the following parameters:

- Rainfall;
  - Water levels;
  - Onsite weather conditions;
  - Soil wetness; and
  - Integrity of mitigation measures
- Where works are required within 15 m of a watercourse, an ecologist shall assess and verify that appropriate demarcation and signage is in place before works commence. Demarcation shall be physically marked out using post and rail/post and rope/bunting, or equivalent, and be signposted to identify the ecological sensitivity;
  - Silt fencing shall be installed for all work within 15 m of the River Liffey, Loughlinstown Stream, the unnamed Simmonstown Stud stream, and the drainage ditch along the R405. Silt fencing shall consist of a maintainable geotextile membrane (equivalent to Terrastop™ Premium; 250 microns; 45 l/m2/sec). Installation, maintenance, and removal shall follow the manufacturers' specifications. The geotextile membrane will be inspected at least once a week and following any period of heavy rainfall (i.e. Met Éireann orange rain warning);
  - The Contractor will monitor weather forecasts for heavy rain and where required, certain works, in particular excavations/earthworks, will cease in order to minimise exposed soil entering surface water run-off; and
  - Soil excavation will not be completed during periods of prolonged or heavy rain (i.e. Met Éireann orange rain warning).

### **Control and response to environmental incidents and accidents**

In the case of environmental incidents or accidents occurring during the construction phase of the Proposed Scheme, the following measures will be applied:

- An appropriate emergency response plan will be in place for any spillage of fuels, lubricants or hydraulic oils to ensure they are immediately contained;
- The Contractor will be required to have available on-site spill kits and hydrocarbon absorbent materials to deal with any accidental spillages;
- An Environmental Incident and Emergency Response Plan will be established by the Contractor to deal with incidents or accidents during construction that may give rise to pollution in watercourses proximal to the works. This will include means of containment in the event of accidental spillage of hydrocarbons or other pollutants (e.g. oil booms and soakage pads);
- Throughout all stages of the construction phase the Contractor will ensure that all site personnel are made aware of the importance of the freshwater environments and the requirement to avoid pollution of all types;
- All hazardous materials on site will be stored within secondary containment designed to retain at least 110% of the total storage contents;
- Temporary bunds for oil/diesel storage tanks will be used off-site during the construction phase of the Proposed Scheme as appropriate;
- Safe handling of all potentially hazardous materials will be emphasised to all construction personnel employed during this phase of the Proposed Scheme; and
- Any spillage of fuels, lubricants or hydraulic oils will be immediately contained, and the contaminated soil removed from the site and properly disposed of at a suitable licensed facility.

### **Measures to Protect Biodiversity Features during Instream Works**

The following mitigation shall be applied during any instance where instream works are being conducted:

- To minimise adverse impacts on watercourses, instream works shall be carried out during the period July to September;
- Prior to any instream works, the appointed contractor(s) will ensure that all construction equipment is mechanically sound to avoid leaks of oil, fuel, hydraulic fluids, and grease;
- Any instream works area will be isolated and de-watered using a gravity/flume system (or similarly effective method). A whole section of the channel is isolated using barriers that span the full width of the watercourse. This keeps a stretch of the watercourse dry, and the water is transferred downstream of the works area through gravity fed flumes/pipes. The flume(s) is normally placed on the bed of the watercourse through the works area and outfalls at the downstream barrier, if present, or far enough downstream to prevent the water backing up into the work area;
- There shall be a licenced, experienced and qualified ecologist on-hand at the time the contained area is dewatered. Eels, lamprey ammocoetes and crayfish that emerge during the water draw down shall be collected in clean buckets of water and returned to the channel, a short distance upstream of works. Crayfish shall not be transferred to another watercourse.
- The duration of the isolation works shall be kept as short as possible;
- The intake shall be screened to prevent fish being drawn into the flume;
- Before the isolated area is de-watered, appropriate measures shall be taken to relocate any stranded wildlife, with transplanting or watering sensitive aquatic vegetation in isolated areas to be considered;
- To minimise debris and sediment accumulation at the upstream end, inspect the flume pipe (including the inlet and outlet) regularly for damage or blockage. Clear blockages and repair any damage immediately;
- The flume pipe shall be protected from crushing or any impact damage. This may include:
  - Aligning it away from plant movement and areas where works will be carried out; and
  - Using temporary barriers or protective covers;
- Before the removal of the upstream barrier, any silt or trash that has accumulated against the barrier shall be removed and disposed of properly. The downstream barrier shall be removed first; and
- Isolated works areas shall never be de-watered directly into adjacent or nearby watercourses or ditches.

### **Measures at the River Liffey crossing**

- The ECoW shall be present for any bankside works.
- The locations of the foul sewer pipes are to be clearly demarcated. The foul sewers are to be protected in place. The detailed method statement for works at the Liffey bridge crossing shall set out appropriate measures to ensure effective protective measures (e.g. tool box talks, signage, barriers and buffer areas) are in place at all times during construction. An appropriate emergency response plan will be in place in case of a leak to ensure it is immediately contained;
- Water pumped from excavations shall be passed through pre-fabricated settlement tanks. The pond/tank shall be appropriately sized and located on a flat vegetated area, downstream of the works area and well away from the watercourse. This pond/tank will be designed and maintained in accordance with CIRIA C532, '*Control of water pollution from construction sites – Guidance for consultants and Contractors*'. The surface water at the top of the tank/pond will flow by gravity to adjacent greenfield lands for infiltration to ground. A silt sock or bag will be positioned at this exit point as an additional control measure. A specialist Contractor will be required to remove the settled materials at the base of this pond. Trenched silt fencing shall be installed around the area designated for infiltration to capture any silt from overland flow.
- Discharge water from the pond will be inspected on a daily basis and if it is found to be silted, the flow will be stopped immediately and appropriate remedial works (e.g. use of a mobile siltbuster) will be carried out.
- Should water pumped from excavations become contaminated (e.g. from a hydrocarbon spill or leak), pumped water shall be tankered off site and treated at an appropriately licensed facility.

- If large amounts of water leak into the contained area, works shall stop until a more secure system is installed.
- Machinery shall operate from the bankside and not instream.

### 7.3.2. Monitoring

Construction works will be monitored to ensure that environmental best practice and the measures included in this document are fully and effectively adhered to.

The ECoW will be responsible for ensuring the mitigations prescribed in this document are adhered to. The Contractor's ECoW will liaise directly with the Project Ecologist appointed by Kildare County Council to oversee the ecological aspects of the work. A checklist will be filled in on a weekly basis to show how the measures above have been complied with. Any environmental incidents or non-compliance issues will immediately be reported to the project team.

The project manager will be continuously monitoring the works and will be fully briefed and aware of the environmental constraints and protection measures to be employed.

Surface water monitoring procedures will be undertaken to ensure environmental protection and management requirements are being implemented.

## 7.4. Operational Phase

### 7.4.1. Monitoring

During the operational phase, Kildare County Council will be responsible for the commission of a suitably experienced ecologist to monitor the effectiveness of water drainage features.

No further mitigation measures are proposed, as measures incorporated into the design are sufficient to avoid/minimise operational phase impacts on European Sites.

## 7.5. Residual Impacts

Guidance provided by the Irish Government (DEHLG, 2010) states that:

*"If the competent authority considers that residual adverse effects remain, then the plan or project may not proceed without continuing to stage 3 of the AA process: Alternative Solutions"*

Considering the mitigation measures identified and set out in this NIS, no residual adverse effects within the Zol of the Proposed Development have been identified (**Table 7.1**).

**Table 7-1: Identification of residual adverse effects within the Zol of the Proposed Development**

| Relevant QI/SCI                                                         | Potential Adverse Impacts Identified | Potential Cumulative Impacts Identified | Mitigation Proposed | Residual Adverse Effects Identified |
|-------------------------------------------------------------------------|--------------------------------------|-----------------------------------------|---------------------|-------------------------------------|
| Mudflats and sandflats not covered by seawater at low tide [1140]       | Surface-water pollution;             | No                                      | Yes                 | None                                |
| Annual vegetation of drift lines [1210]                                 | Groundwater pollution.               | No                                      | Yes                 | None                                |
| <i>Salicornia</i> and other annuals colonising mud and sand [1310]      |                                      | No                                      | Yes                 | None                                |
| Atlantic salt meadows ( <i>Glaucopuccinellietalia maritima</i> ) [1330] |                                      | No                                      | Yes                 | None                                |
| Mediterranean salt meadows ( <i>Juncetalia maritimi</i> ) [1410]        |                                      | No                                      | Yes                 | None                                |
| Embryonic shifting dunes [2110]                                         |                                      | No                                      | Yes                 | None                                |
| Humid dune slacks [2190]                                                |                                      | No                                      | Yes                 | None                                |
| Petalwort <i>Petalophyllum ralfsii</i> [1395]                           |                                      | No                                      | Yes                 | None                                |

| Relevant QI/SCI                                               | Potential Adverse Impacts Identified | Potential Cumulative Impacts Identified | Mitigation Proposed | Residual Adverse Effects Identified |
|---------------------------------------------------------------|--------------------------------------|-----------------------------------------|---------------------|-------------------------------------|
| Harbour porpoise <i>Phocoena phocoena</i> [1351]              | Surface-water pollution              | No                                      | Yes                 | None                                |
| Reefs [1170]                                                  |                                      | No                                      | Yes                 | None                                |
| Red-throated Diver <i>Gavia stellata</i> [A001]               |                                      | No                                      | Yes                 | None                                |
| Great Northern Diver <i>Gavia immer</i> [A003]                |                                      | No                                      | Yes                 | None                                |
| Fulmar <i>Fulmarus glacialis</i> [A009]                       |                                      | No                                      | Yes                 | None                                |
| Manx Shearwater <i>Puffinus puffinus</i> [A013]               |                                      | No                                      | Yes                 | None                                |
| Cormorant <i>Phalacrocorax carbo</i> [A017]                   |                                      | No                                      | Yes                 | None                                |
| Shag <i>Phalacrocorax aristotelis</i> [A018]                  |                                      | No                                      | Yes                 | None                                |
| Light-bellied Brent Goose <i>Branta bernicla hrota</i> [A046] |                                      | No                                      | Yes                 | None                                |
| Shelduck <i>Tadorna tadorna</i> [A048]                        |                                      | No                                      | Yes                 | None                                |
| Teal <i>Anas crecca</i> [A052]                                |                                      | No                                      | Yes                 | None                                |
| Pintail <i>Anas acuta</i> [A054]                              |                                      | No                                      | Yes                 | None                                |
| Shoveler <i>Anas clypeata</i> [A056]                          |                                      | No                                      | Yes                 | None                                |
| Common Scoter <i>Melanitta nigra</i> [A065]                   |                                      | No                                      | Yes                 | None                                |
| Oystercatcher <i>Haematopus ostralegus</i> [A130]             |                                      | No                                      | Yes                 | None                                |
| Ringed Plover <i>Charadrius hiaticula</i> [A137]              |                                      | No                                      | Yes                 | None                                |
| Golden Plover <i>Pluvialis apricaria</i> [A140]               |                                      | No                                      | Yes                 | None                                |
| Grey Plover <i>Pluvialis squatarola</i> [A141]                |                                      | No                                      | Yes                 | None                                |
| Knot <i>Calidris canutus</i> [A143]                           |                                      | No                                      | Yes                 | None                                |
| Sanderling <i>Calidris alba</i> [A144]                        |                                      | No                                      | Yes                 | None                                |
| Dunlin <i>Calidris alpina alpina</i> [A149]                   |                                      | No                                      | Yes                 | None                                |
| Black-tailed Godwit <i>Limosa limosa</i> [A156]               |                                      | No                                      | Yes                 | None                                |
| Bar-tailed Godwit <i>Limosa lapponica</i> [A157]              |                                      | No                                      | Yes                 | None                                |
| Curlew <i>Numenius arquata</i> [A160]                         |                                      | No                                      | Yes                 | None                                |
| Redshank <i>Tringa totanus</i> [A162]                         |                                      | No                                      | Yes                 | None                                |
| Turnstone <i>Arenaria interpres</i> [A169]                    |                                      | No                                      | Yes                 | None                                |
| Little Gull ( <i>Larus minutus</i> ) [A177]                   |                                      | No                                      | Yes                 | None                                |
| Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]    |                                      | No                                      | Yes                 | None                                |
| Common Gull <i>Larus canus</i> [A182]                         |                                      | No                                      | Yes                 | None                                |
| Lesser Black-backed Gull <i>Larus fuscus</i> [A183]           |                                      | No                                      | Yes                 | None                                |
| Herring Gull <i>Larus argentatus</i> [A184]                   |                                      | No                                      | Yes                 | None                                |
| Great Black-backed Gull <i>Larus marinus</i> [A187]           |                                      | No                                      | Yes                 | None                                |
| Kittiwake ( <i>Rissa tridactyla</i> ) [A188]                  |                                      | No                                      | Yes                 | None                                |
| Roseate Tern ( <i>Sterna dougallii</i> ) [A192]               |                                      | No                                      | Yes                 | None                                |
| Common Tern <i>Sterna hirundo</i> [A193]                      |                                      | No                                      | Yes                 | None                                |
| Arctic Tern <i>Sterna paradisaea</i> [A194]                   |                                      | No                                      | Yes                 | None                                |
| Little Tern <i>Sterna albifrons</i> [A195]                    |                                      | No                                      | Yes                 | None                                |
| Guillemot <i>Uria aalge</i> [A199]                            |                                      | No                                      | Yes                 | None                                |
| Razorbill ( <i>Alca torda</i> ) [A200]                        |                                      | No                                      | Yes                 | None                                |
| Puffin ( <i>Fratercula arctica</i> ) [A204]                   |                                      | No                                      | Yes                 | None                                |
| Wetland and Waterbirds [A999]                                 |                                      | No                                      | Yes                 | None                                |

## 8. CONCLUSION OF THE APPROPRIATE ASSESSMENT

This NIS has been prepared following the Department of the Environment, Heritage and Local Government guidance 'Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities' (DEHLG, 2010). As stated in that guidance document, the requirement of the AA is not to prove what the impacts and effects will be, but rather to establish beyond reasonable scientific doubt that adverse effects on site integrity will not result.

RPS has prepared this NIS to document the analysis and evaluation seeking to establish whether or not, in view of best scientific knowledge and applying the precautionary principle, and in light of the conservation objectives of relevant European Sites, the Proposed Scheme, either individually or in combination with other plans or projects, will adversely affect the integrity of European Sites.

The construction and operation of the Proposed Scheme has been detailed (**Section 2**), and the receiving environment has been described (**Section 4**). A number of European Sites have been identified within the ZoI of the Proposed Scheme via the following effect pathways (**Section 6**):

- Surface water pollution; and
- Groundwater pollution.

To avoid, reduce or remedy the negative impacts on European Sites that are likely to arise as a result of the Proposed Scheme, mitigation measures have been proposed as part of the development (**Section 7**).

These mitigation measures are proposed as part of the development for surface water management, emergency responses and environmental training, and site management during construction and operation of the Proposed Scheme.

With the full implementation of mitigation measures proposed as part of the development and as imposed by way of Conditions and/or Restriction by the competent authority, it is concluded that there will be no significant residual effects on the integrity of any European Sites.

In conclusion, it is the opinion of RPS that in view of best scientific knowledge and applying the precautionary principle, and in light of the conservation objectives of the relevant European Sites, the Proposed Scheme, either individually or in combination with other plans or projects, will not have an adverse effect on the integrity of any European Site(s).

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## **Appendix A In- combination assessment**

## Summary of relevant projects assessed in the in-combination assessment

| Application number | Development location and description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Grant date | Distance from Proposed Scheme (m) | Notes                                                                                                                                                                                                                                                                |
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| 221349             | <p>Address: Hazelhatch Road, Celbridge</p> <p>(i) the construction of a new playing pitch with 8 lighting masts and 2 ball catch nets and<br/>(ii) a new 2.400m high perimeter fence at the boundary with the river to the East of the site</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10/07/2023 | 324 (intersects watercourse)      | Conditions of the planning permission include measures to protect hedgerows and watercourses and to control noise and vibration, dust, and construction and demolition waste.                                                                                        |
| 22221052           | <p>Address: Glencarrig House, Simmonstown, Celbridge</p> <p>Large-Scale Residential Development: 5 year planning permission for a Large Scale Residential (LRD) Development scheme on lands at Glencarrig House, Simmonstown, Celbridge, Co. Kildare W23 Y9PY, on a site of approximately 2.1 ha. The proposed development will consist of: (a) The demolition (total area approx. 800 sqm) of the existing buildings, including a habitable dwelling on site, and the existing front boundary treatment; and (b) The construction of a new residential and creche scheme of 137 No. units in a mixture of houses and apartments units ranging from 2 to 5 storeys in height as follows: Block A (3-5 storey apartment block) comprising 39 No apartments (19 No. 1 bed and 20 No. 2 bed units); Block B (4-5 storey apartment block) comprising 51 No. apartments (24 No. 1 bed and 27 No. 2 bed units); Block C (3-4 storey apartment block) comprising 25 No. apartments (11 No. 1 bed and 14 No. 2 bed units); Houses (2-3 storeys) comprising 22 No. house units (5 No. 4-bed semi-detached, 4 No. 3-bed semi-detached, 4 No. 3-bed terraced and 9 No. 3-bed end of terrace). A separate building will accommodate a Childcare Facility/Creche of approx. 248 sqm with outdoor play area of 460 sqm. Bike Store building (86 sqm) and Plant Room/ESB Sub-station building (66.9 sqm). Each residential unit will be afforded with private open space in the form of a balcony or terrace in the case of the apartment units and a rear garden in the case of the housing units. Public open space is proposed in the form of play areas, outdoor seating and planting and pedestrian and cyclist links (approx. 4,380 sqm). A total of 129 No. car parking spaces are provided at surface level, including 7 No. accessible spaces: 80 No. bicycle spaces (for Visitors and Residents, in bike stands) together with 124 No. Secure bicycle spaces within 5 No. Bike stores. The development shall be served via a new vehicular access point from the L5062. Upgrade works are proposed to the vehicular access point from the R405 onto the L5062 to facilitate the proposed development and to provide for improved access and egress for the overall development. New pedestrian and cyclist access points will be provided on to the R405 from the site. The associated site and infrastructural works include provision for water services; foul and surface water</p> | 13/03/2023 | 400<br>(270 m from watercourse)   | An accompanying EcIA concluded that no significant impacts are likely. Conditions of the planning permission include measures to control construction and demolition waste, and mandating the use of a Construction Management Plan with pollution control measures. |

| Application number | Development location and description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Grant date                  | Distance from Proposed Scheme (m) | Notes                                                                                                                                                                                                                                                                |
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|                    | drainage and connections; attenuation proposals; permeable paving; all landscaping works; boundary treatment; internal roads and footpaths; waste storage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                                   |                                                                                                                                                                                                                                                                      |
| 2460497            | <p>Address: Shackleton Road, Ballymakealy Upper (Townland), Celbridge</p> <p>For a Large Scale Residential Development (LRD) comprising of the construction of 168 no. residential units, 1 no. creche, 1 no. ESB substation and all associated site development works including footpaths, cycle paths, parking, fencing, drainage, bicycle and bin stores, public lighting and landscaping/amenity areas. Access to the proposed development will be provided via a new access from the existing Shackleton Road together with improvements to a pedestrian footpath and cycleway along Shakleton Road, an upgraded pedestrian junction at Shackleton Road and the Clane Road (R403) and 2 no. pedestrian bridges over Toolestown Stream to connect into Oldtown Woods Estate. A Natura Impact Statement is submitted to the Planning Authority with this application.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Decision date<br>22/07/2024 | 750<br>(intersects watercourse)   | An EcIA, NIS, and Environmental Impact Assessment Screening Report accompanied the application and no significant impacts on ecological receptors were anticipated. Conditions of the planning permission include the mitigation in the EcIA and NIS are adhered to. |
| 191282             | <p>Address: Phase 3, Oldtown Mill, Celbridge</p> <p>The construction of 75 no. residential dwellings consisting of 51 no. two storey houses; 12 no. 2 bed own door duplex units contained in a three-storey block (Block 1) and 12 no. own door/duplex apartment units (6 no. 2 bed duplex units and 6 no. 1 bed apartment units) contained in a two storey block (Block 2). The proposed house units are comprised of 5 no. 4 bed, end of terrace units (Type A2); 17 no. 3 bed, semi-detached and end of terrace units (Type B1); 21 no. 3 bed, mid-terrace units (Types B2 and B5) and 8 no. 3 bed, end of terrace units (Type B4 and B4.1). The proposed development also includes the creation of a vehicular and pedestrian access from the Oldtown Mill Road with associated works; together with ancillary exterior bin and bike storage for the duplex/apartment blocks; public open space; internal roads; car parking; infrastructure; boundary treatments and all associated site and development works on a site measuring approx. 2.2 ha. Revised by significant further information consisting of; (a) revision of the red line boundary of the site and an increase in the overall site area (increase from approx. 2.2 ha to approx. 2.3 ha) to accommodate the removal of a portion of a hedgerow along the southern boundary of the site; (b) revision of the proposed unit mix due to the replacement of 2 no. three-bedroom houses (reduction from 46 to 44 no. 3 bed units) with 2 no. four-bedroom houses (increase from 5 to 7 no. 4 bed units); (c) together with associated and ancillary revisions to the site layout and levels, boundary treatment, landscaping, internal storage within the proposed house units, bin storage provision, parking provision, drainage and services infrastructure and all associated site and development works</p> | 21/07/2020                  | 1500<br>(500 m from watercourse)  | An AA Screening Report accompanied this application and determined that Stage 2 AA is not required.                                                                                                                                                                  |

| Application number | Development location and description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Grant date | Distance from Proposed Scheme (m) | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| 211256             | <p>Address: Griffinrath, Celbridge</p> <p>Application for a 10 year permission for development on lands in the townland of Griffinrath, Celbridge. The development will consist of the construction of a solar PV farm with an operational life of 35 years comprising approximately 75,984 No. photovoltaic panels on ground mounted frames within a site area of 44.21 hectares and associated ancillary development including 10 No. transformer stations, approximately 124 No. string-inverters, 1 No. onsite 38kV substation building, 1 No. 40ft storage container building, 7 No. CCTV security cameras mounted on 4 metre high poles and perimeter security fencing (2 metres high), the construction of an internal hardcore access road between the solar panels and the site access, localised improvements to an existing agricultural access from the adjoining L5065 road to facilitate construction and operational phase access and, the installation of a 38kV underground electricity cable from the onsite 38kV substation to the 110kV Griffinrath substation ca. 0.75km to the southeast. A Natura Impact Statement has been prepared in respect of the proposed development. Revised by Significant Further Information which consists of an Aviation Glint and Glare Assessment Report, an Archaeological Report ; an amended Noise and Vibration Impact Assessment; a Traffic Report; drawings of cable locations and trench reinstatement and road closures and road diversion routes; a Stage 1/2 Road Safety Audit; updated drawings of the existing and proposed entrance and the proposed compound and temporary set down area; and a risk assessment of the hazards associated with a fire in or near the solar arrays.</p> | 08/08/2022 | 1520 (290 m from watercourse)     | An Environmental Report, NIS, and Construction Environmental Management Plan accompanied the application. The Environmental Report determined that the development would not result in any likely or significant environmental impacts. The NIS determined that it would not adversely affect the integrity, and conservation status of any qualifying interest of any European sites. Conditions of the planning permission include measures to protect aquatic receptors, other ecological receptors, and to implement measures within the NIS. |
| 20307100           | <p>Address: West of Maynooth Road &amp; North of Kilwoghan Stream, Crodaun, Celbridge</p> <p>Strategic Housing Development (ABP Decision): 467 Residential Units. 199 No. Houses, 216 No. Apartments, 52 No. Duplexes, Childcare Facility, gym, cafe and retail unit and associated site works.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 08/09/2020 | 2050 (intersects watercourse)     | An Environmental Impact Assessment Report (EIAR) and AA Screening Report accompanied the application. The EIAR determined that there will be no significant adverse impacts on biodiversity and the AA Screening Report determined that there will be no significant effect on the integrity of any European sites or on the conservation objectives of their qualifying interests. Conditions of the planning permission include a condition to implement measures within the EIAR.                                                              |

| Application number | Development location and description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Grant date | Distance from Proposed Scheme (m) | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| 20306504           | <p>Address: Crodaun, Celbridge, Co. Kildare</p> <p>Strategic Housing Development (ABP Decision) The demolition of an existing agricultural structure on site and the provision of a new vehicular access onto the R405 Regional Road (Celbridge-Maynooth) to serve the proposed residential development that consists of 372 no. new residential units, comprising the following:</p> <ul style="list-style-type: none"> <li>• 122 No. Apartments arranged in 2 no. Apartment blocks of 4-storey height comprising 46 X 1 bed units (measuring either 49.4sqm or 52sqm in Gross Floor Area (GFA) and 76 X 2 bed units (ranging in size from 67.3sqm to 82.8sqm GFA each).</li> <li>• 12 no. 1 bed Maisonettes (own door apartments), measuring 61sqm GFA (Unit Type A2) or 53.8sqm (Unit Type A1).</li> <li>• 20 no. Duplex units, comprising 10 X 1 bed units, measuring 54sqm GFA (Unit Type A3) and 10 x 2 bed units, measuring 99.7 sqm GFA (Unit Types B2 and B3)</li> <li>• 218 no. houses, comprising a variety of housing sizes and forms to include: <ul style="list-style-type: none"> <li>– 20 X 2 bed/4 person, two storey terraced houses measuring 87.5sqm GFA (House Type B1)</li> <li>– 88 X 3 bed/5 person, two storey terraced houses measuring 110.9sqm GFA (House Type C1)</li> <li>– 8 X 3 bed/5 person, two storey semi-detached houses measuring 115.2sqm GFA (House Type C2)</li> <li>– 1 X 3 bed/5 person, two storey detached house measuring 115.2sqm GFA (House Type C3)</li> <li>– 7 X 3 bed/6 person, three storey terraced houses measuring 124.6sqm GFA (House Type C4)</li> <li>– 36 X 3 bed/5 person, two storey terraced houses measuring 102sqm GFA (House Type C5)</li> <li>– 36 x 4 bed/7 person, two storey semi-detached houses measuring 133sqm GFA (House Type D1)</li> <li>– 12 X 4 Bed/7 person, two storey, semi detached houses measuring 142.6sqm GFA (House Type D2)</li> <li>– 10 X 4bed/8 person, three storey, terraced houses measuring 145.6sqm GFA (House Type D3)</li> </ul> </li> <li>• A childcare facility is proposed at ground floor level of Apartment Block B (approx. 191sqm GFA)</li> </ul> <p>A total of 633 no. car parking spaces and 340 no. bicycle parking spaces are proposed. The proposed development also includes the provision of 2 no. ESB sub-stations, site and infrastructural works including foul and surface water drainage, attenuation areas,</p> | 03/09/2020 | 2280<br>(220 m from watercourse)  | An EIAR and AA Screening Report were produced for the application. The only notable ecological impacts identified in the EIAR relate to the moderate impact of the removal of hedgerow. The AA Screening Report determined that there will be no significant effects any European sites. Conditions of the planning permission include a condition to implement measures within the EIAR, and a condition that an ECoW is appointed. |

| Application number  | Development location and description                                                                                                                                                                                  | Grant date | Distance from Proposed Scheme (m) | Notes                                                                                                                                                                                                                                                                                                                                                                                |
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|                     | open space, boundary walls and fences, landscaping, lighting, internal roads, cycle paths, footpaths, and cycle and pedestrian connections to the R405 and the R449 Regional Roads.                                   |            |                                   |                                                                                                                                                                                                                                                                                                                                                                                      |
| ABP case:<br>305343 | Address: Newcastle South and Ballynakelly, Newcastle, Co. Dublin.<br>Demolition of 5 no. structures, construction of 406 no. residential units (281 no. houses, 125 no. apartments) creche and associated site works. | 23/12/2019 | 3220 (10 m from watercourse)      | An EIAR and AA Screening Report accompanied the application. The EIAR determined that there will be no significant adverse impacts on ecological receptors and the AA Screening Report concluded that significant effects on any European sites are not likely to arise. Conditions of the planning permission include a condition to implement mitigation measures within the EIAR. |