Screening Statement for Appropriate Assessment

Lucan Public Realm

Liffey Promenade & Demesne Park Entrance

Doherty Environmental

14th December 2021

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1.0 INTRODUCTION

South Dublin County Council have commission Doherty Environmental Consultants (DEC) Ltd. to complete a Stage 1 Screening for Appropriate Assessment for proposed public realm enhancement works to the Liffey Promenade and the Demesne Park Entrance at Lucan, Co. Dublin. The location of the Liffey Promenade and the Demesne Park Entrance are shown on Figure 1.1 below while an aerial image of both locations are shown on Figure 1.2 and 1.3.

This Screening Report for Appropriate Assessment forms Stage 1 of the Habitats Directive Assessment process and is being undertaken in order to comply with the requirements of the Habitats Directive Article 6(3). The function of this Screening Report is to determine if it can or cannot be excluded, on the basis of objective information, that the project, individually or in combination with other plans or projects, will have a significant effect on a European Site. This Screening Report has been prepared to provide information to the competent authority to assist them in their determination as to whether a Stage 2 Appropriate Assessment is required for the project

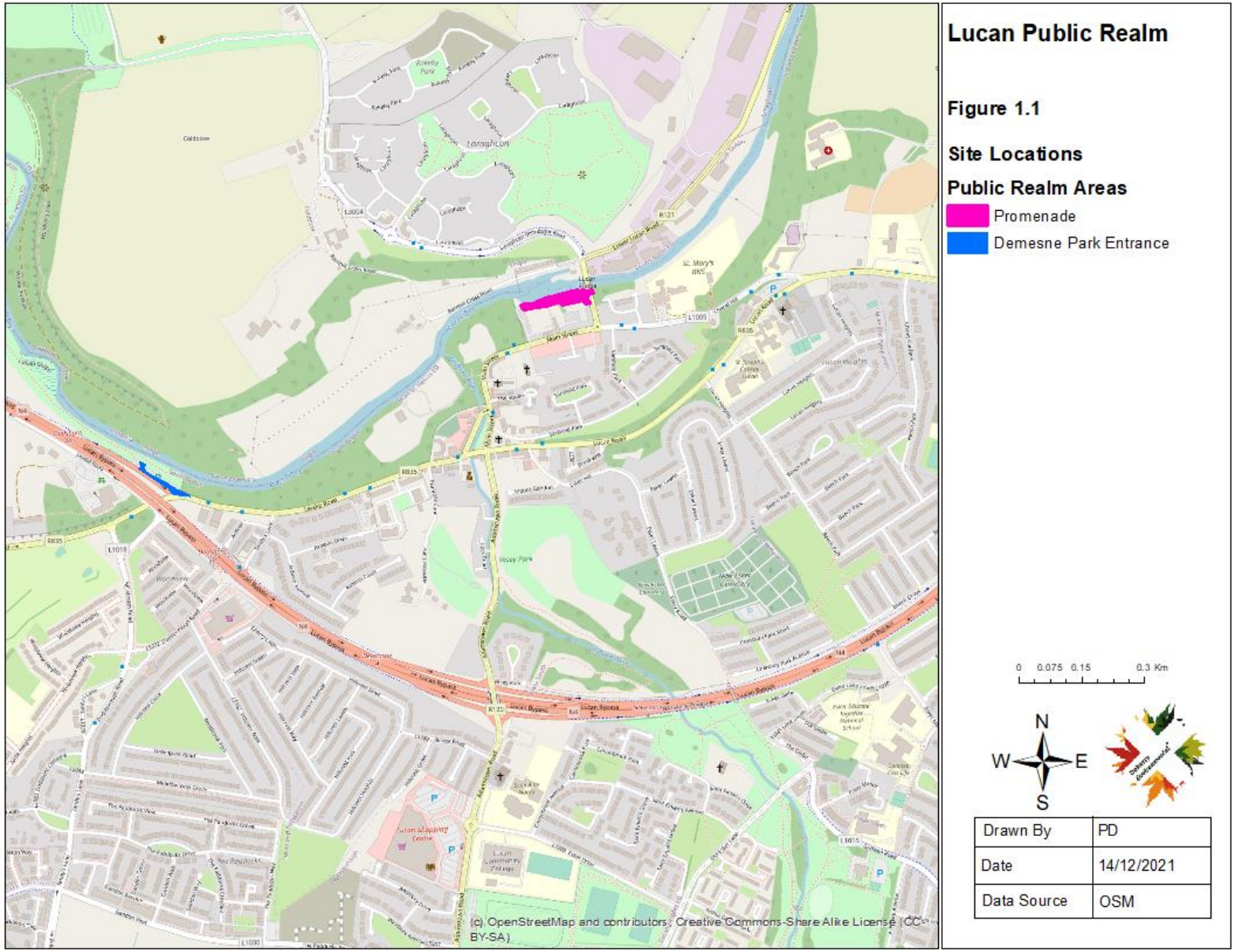
1.1 LEGISLATIVE CONTEXT

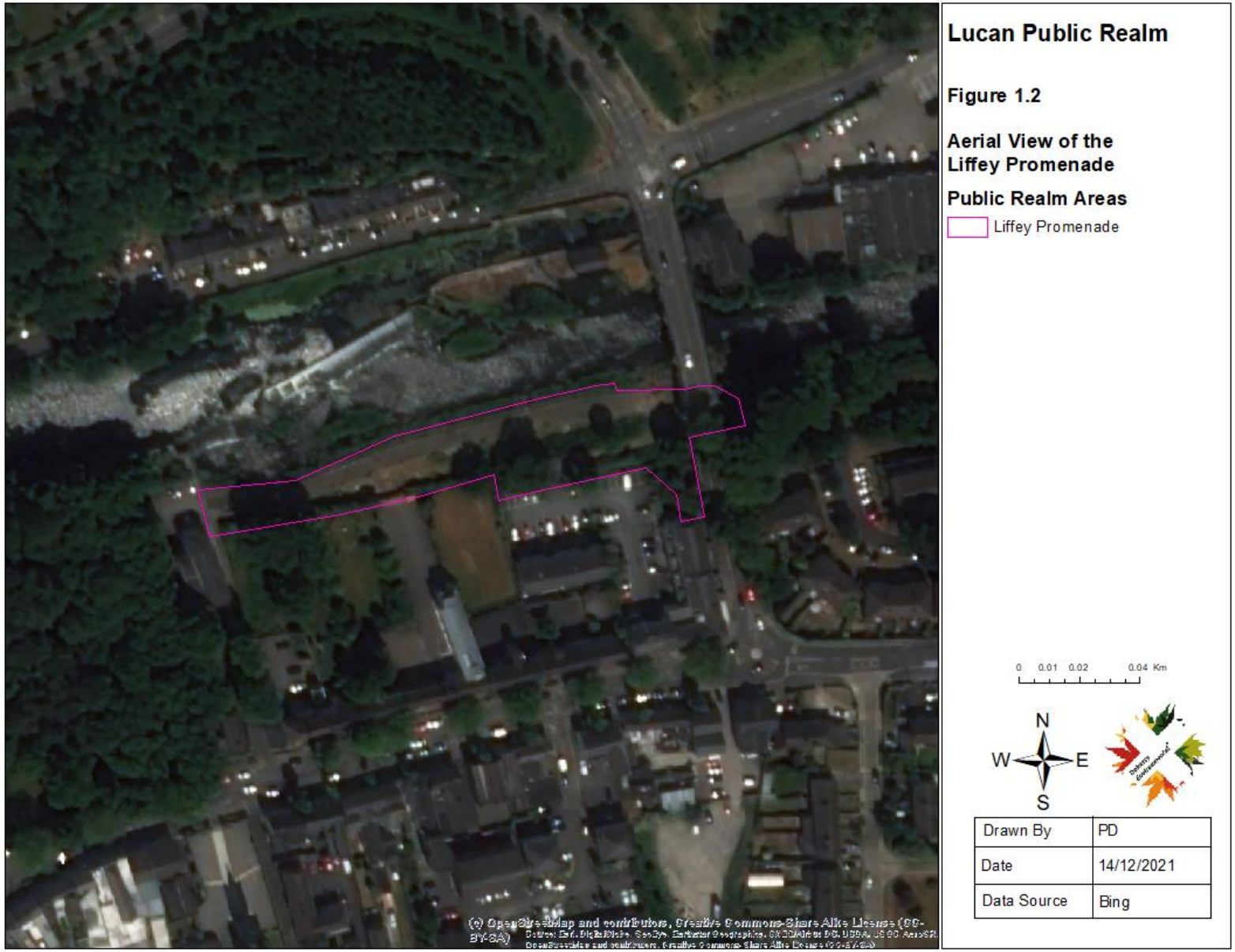
This Screening Report for Appropriate Assessment is being prepared in order to enable the competent authority to comply with Article 6(3) of Council Directive 92/43/EEC (The Habitats Directive). It is prepared to examine whether or not the project alone or in combination with other plans and projects is likely to have a significant effect on any European Site in view of best scientific knowledge and in view of the conservation objectives of the European Sites and specifically on the habitats and species for which the sites have been designated.

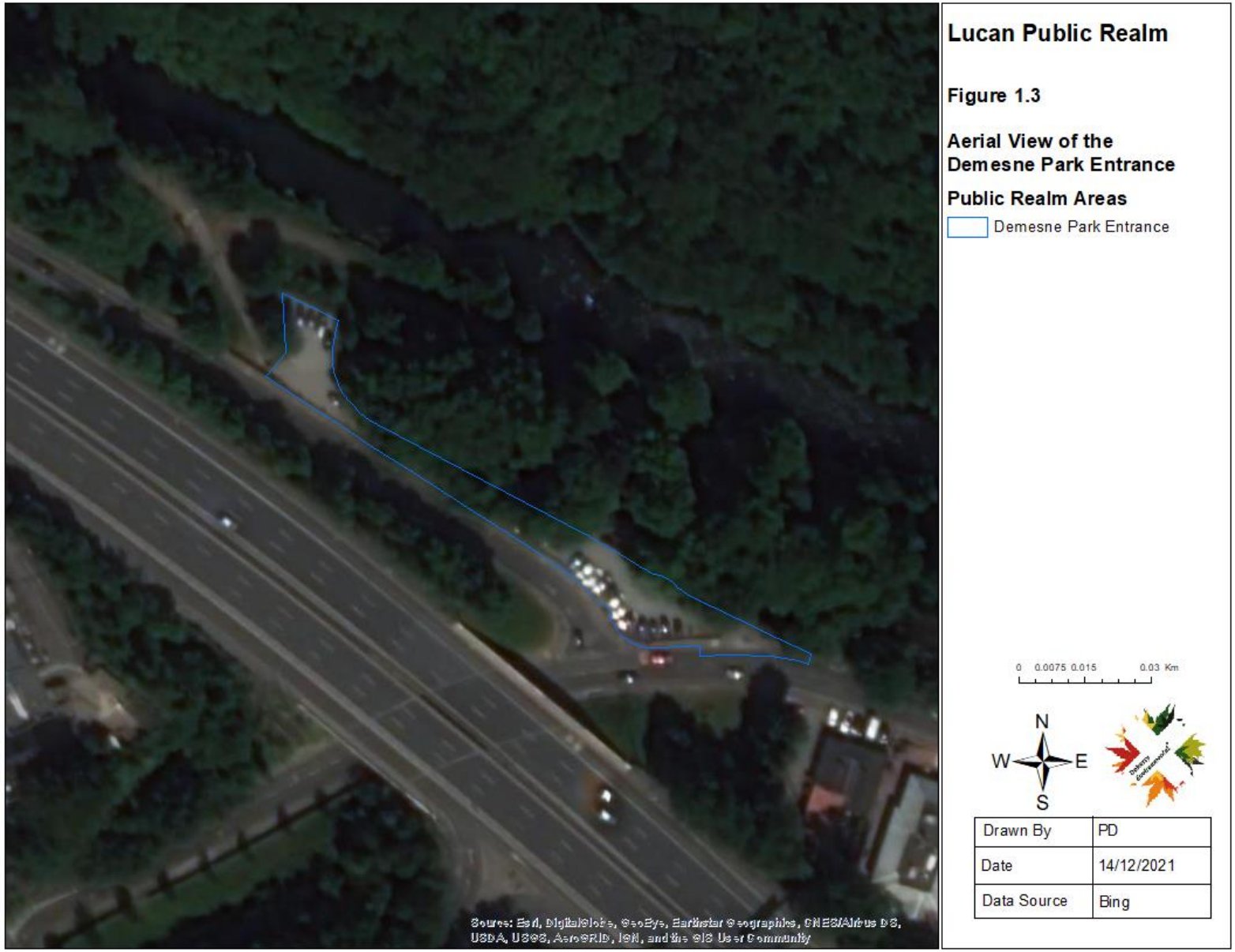
1.1.1 Requirement for an Assessment under Article 6 of the Habitats Directive

According to Regulation 42(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 – 2015, the competent Authority has a duty to:

- Determine whether the proposed Project is directly connected to or necessary for the management of one of more European Sites; and, if not,


Lucan Public Realm
Figure 1.1
Site Locations
Public Realm Areas
Promenade
Demesne Park Entrance
0 0.075 0.15 0.3 Km
N
W
E
S
Drawn By PD
Date 14/12/2021
Data Source OSM
(c) OpenStreetMap and contributors, Creative Commons-Share Alike License (CC BY-SA)


(c) OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA)
Lucan Public Realm
Figure 1.2
Aerial View of the Liffey Promenade
Public Realm Areas
Liffey Promenade
0 0.01 0.02 0.04 Km
N
W
E
S
Drawn By PD
Date 14/12/2021
Data Source Bing



Lucan Public Realm

Figure 1.3

Aerial View of the Demesne Park Entrance

Public Realm Areas

Demesne Park Entrance

0 0.0075 0.015 0.03 Km

N
W E
S

Drawn By	PD
Date	14/12/2021
Data Source	Bing

- Determine if the Project, either individually or in combination with other plans or projects, would be likely to have a significant effect on the Eurpoean Site(s) in view of best scientific knowledge and the Conservation Objectives of the site(s).

This Report contains information to support a Screening for Appropriate Assessment and is intended to provide information that assists the competent authority when assessing and addressing all issues regarding the construction and operation of the Project and to allow the competent authority to comply with the Habitats Directive. Article 6(3) of the Habitats Directive defines the requirements for assessment of projects and plans for which likely significant effects on European Sites may arise. The European Communities (Birds and Natural Habitats) Regulations, 2011 – 2015 (the Habitats Regulations) transpose into Irish law Directive 2009/147/EC (the Birds Directive) and Council Directive 92/43/EEC (the Habitats Directive) together which list habitats and species that are of international importance for conservation and require protection. The Habitats Regulations requires competent authorities, to carry out a Screening for Appropriate Assessment of plans and projects that, alone or in combination with other plans or projects, would be likely to have significant effects on European Sites in view of best scientific knowledge and the Site's conservation objectives. This requirement is transposed into Irish Law by Part 5 of the Habitats Regulations and Part XAB of the Planning and Development Act, 2000 (as amended).

1.2 SCREENING METHODOLOGY

This Screening Report has been prepared in order to comply with the legislative requirements outlined in Section 1.1 above and aims to establish whether or not the proposed project, alone or in combination with other plans or projects, would be likely to have significant effects on European Sites in view of best scientific knowledge and the Site's conservation objectives. In this context "likely" means a risk or possibility of effects occurring that **cannot** be ruled out based on objective information and "significant" means an effect that would undermine the conservation objectives of the European sites, either alone or in-combination with other plans and projects (Office of the Planning Regulator (OPR), 2021) .

The nature of the likely interactions between the Plan and the Conservation Objectives of European Sites will depend upon the:

- the ecological characteristics of the species or habitat, including their structure, function, conservation status and sensitivity to change; *and/or*

- the character, magnitude, duration, consequences and probability of the impacts arising from land use activities associated with the plan, in combination with other plans and projects.

This Screening Report for Appropriate Assessment has been undertaken with reference to respective National and European guidance documents: Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities (DEHLG 2010) and *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC; Office of the Planning Regulator – OPR Practice Note PN01: Appropriate Assessment Screening for Development Management,* and recent European and National case law. The following guidance documents were also of relevance during the preparation of this Screening Report:

- A guide for competent authorities. Environment and Heritage Service, Sept 2002. Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (2010). DEHLG.

- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats Directive 92/42/EEC. European Commission (2021).

- Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats Directive 92/43/EEC. European commission (2018).

The EC (2001) guidelines outline the stages involved in undertaking a Screening Report for Appropriate Assessment for projects. The methodology adopted during the preparation of this Screening Report is informed by these guidelines and was undertaken in the following stages:

1. Describe the project and determine whether it is necessary for the conservation management of European Sites;

2. Identify European Sites that could be influenced by the project;

3. Where European Sites are identified as occurring within the zone of influence of the project identify potential effects arising from the project and screen the potential for such effects to negatively affect European Sites identified under Point 2 above; and

4. Identify other plans or projects that, in combination with the project, have the potential to affect European Sites.

2.0 PROJECT DESCRIPTION

2.1 LIFFEY PROMENADE

2.1.1 Extent of the works:

The site area extends from Lucan Bridge to the east to the steps and landing at the end of Watery Lane on the western end, and from the Liffey edge to the site boundary on the southern side, including the access route to the river edge from the rear of the Mall properties. It includes a related but separate area at the junction of Watery Lane and the Mall/Main Street.

No changes are proposed to the existing promenade pathway and river edge steps.

Most of the changes being proposed relate to additional landscaping and planting apart from the addition of a new external stairway from the Bridge to the river level. The works for this stairway and for the Watery Lane junction have already been approved under a previous Part 8 and therefore do not form part of this assessment.

2.1.2 Nature of Works

1. The construction of a set of landscaped steps, retaining walls and railings from the current access point at bridge level to the end of the bridge wall at river level. The stairway is configured as a series of short flights with landings along its lower half followed by a longer flight and dog-leg return for the upper half. Retaining walls and seating are clad in black limestone and the steps and landings are concrete with a resinbond finish (as per Part 8 drawing 01 by SDCC/2015).

2. New concrete paving to the footpath ends and carriageway at the entrance to Watery Lane, and a new tree on its western side (as per Part 8 drawing 01 by SDCC/2015).

3. Some modifications to the steps at the western end of the Promenade will be made to form a series of seats facing the weir. These seats will be finished in black marble, just like the seats along the steps at the Bridge end.

4. The relandscaping of the area between the existing promenade path and the southern boundary. All existing trees are being retained and approx. 25 no. new trees and shrubs are being planted along this edge. These are native deciduous varieties such as Elm, Birch and Alder, in keeping with existing and traditional species found in this Liffey Valley habitat.

5. A number of natural stone benches are proposed along the edge of the Promenade, sitting on a reinforced grass finish having a backdrop of wildflower meadow.

6. An adjustment of the arrival point of the access route beside the Promenade is proposed in order to allow the construction of the landscaped steps at their connection with the promenade path. Any connection between the bottom of these steps and the Promenade will be made using the same materials and finish as the Promenade path.

7. One of the existing lighting poles is being moved a few metres to the east where it clashes with this redirected access path. It is proposed to add a series of service point pop-ups along the southern edge of the Promenade path to enable to space to function as an open-air market, or for organized community events, performances etc.

2.1.3 Design Rationale

These proposals are an attempt to do as little as possible but just as much as is necessary to this popular amenity spot. The improved planting and landscaping will provide some inflection of the very artificial lines of the Promenade path while defining informal ‘break-out’ areas for small group gatherings or intimate conversation. These spaces still face out towards the Promenade and are quite visible from it as well as from the Bridge so that overlooking discourages anti-social behaviour.

The provision of service points for seasonal markets or performances etc. aims to provide more flexibility of uses. There is sufficient width on the Promenade (approx. 6m) to accommodate the space for stalls.

2.2 DEMESNE PARK ENTRANCE

2.2.1 Extent of the works

The site stretches from its connection with the footpath (from Lucan) at its eastern end to the demesne park access gates at the western end. It is bordered by the N4 slip road and its junction with the Lucan Road on its southern side and by the Demesne park boundary wall and woodland on its northern edge. It is worth adding that this boundary wall, in rubble stone, forms a continuous line from Lucan town centre to the demesne entrance although it is replaced with block and then block with stone facing from the point where it meets the Tobermaclugg stream (which is culverted under the site). A waste water pumping station is located along this boundary immediately to the west of this stream.

2.2.2 Description of the works

1. Relevelling of the landing/entrance area outside the pedestrian access gates to the Park to provide a continuous, consistent level across the works area (the level rises steadily from east to west). This landing area is to be paved in concrete paviours or similar.

2. Construction and installation of a box-section painted steel portal to mark this pedestrian entrance from the eastern approaches.

3. Construction of a circular paved area (diam. 17.5m approx.) at the widest point of the site (opposite N4 Underpass). A length of existing wall in plastered block which the circle intersects on the northern side is to be removed and replaced with a circular concrete wall and seat. A foundation is to be provided towards the centre of the circular area for a piece of public art (to be commissioned separately to this Part 8).

4. A length of existing wall in block with stone facing (approx. 12.5m) immediately to the east of the pedestrian entrance is to be removed.

5. Fabrication and installation of a painted steel railing the same height as the existing demesne wall, from the circular paved area as far as the pedestrian entrance.

6. The provision of masonry bench-seating to both paved areas.

7. The provision of landscaping to the N4 boundary consisting of shrubs and hedges, a pair of deciduous trees and an area of wildflower meadow.

8. The removal of existing tarmac surfacing and the resurfacing of the non-paved areas in a Ballylusk gravel or similar.

9. The installation of 3 no. retractable bollards at the eastern end of the site, the installation of a series of bicycle stands at this location too.

2.2.3 Design rationale

The design intention here is to create a sense of place in contrast to the relative anonymity of the current receiving environment, as well as a wayfinding point that marks both the Demesne Park entrance and the western 'gateway' to Lucan village. The ad-hoc car park currently occupying the site is being moved across the Lucan Road (as a separate Part 8 application) so that pedestrian, cycle and canoe/kayak users will have unrestricted access to the Park entrance. A set-down area for club vans and trailers is provided at the eastern end of the site. Maintenance and emergency vehicle access is provided by means of a line of removable bollards and by the clear dimensions of the steel portal (4.5 x 4.5m).

The demesne wall which is such as important link to Lucan village centre becomes a visual barrier to as one approaches the entrance. It also serves to hide occasional anti-social behaviour around the Tobarmaclugg bridge and water treatment plant within the Park area below. By removing portions of the wall here the intention is to make park users feel safe as they approach it by providing overlooking of the woodland from the entrance approaches. This is achieved by removing the wall where the circular plaza cuts into it and by replacing it from the entrance portal onwards by means of a metal lath fence which provides good visibility into the woodland. This metal fence is used to screen the existing surfaces of wall to the treatment plant area where it is not proposed to open up the views. In this way the same element as a fence or as a screen will provide a sense of unity and continuity to this boundary.

This circular plaza will be framed by a pair of trees facing the N4 Underpass (R835) and is intended to accommodate a piece of public art. It will act as a staging point for groups of cyclists, walkers and river users. Car parking is available across the road and accessed via a controlled crossing. A dense band of vegetation consisting of Hydrangea, Cherry Laurel and Wild Plum screens the site area from the slip road.

3.0 BASELINE DESCRIPTION

3.1 LIFFEY PROMENADE

A review of historical mapping (6 inch colour map 1829 to 1842; 6 inch Cassini, 1830's) and the 25 inch map, 1888 to 1913) for the Promenade area shows the presence of the existing weir and the "Weir Bridge" along with the salmon pass. The Liffey Canal is modified downstream of the weir and opens out into a wider channel that likely provided instream pool and slow glide habitat.

The rear gardens of the houses on Main Street are shown extending north towards the river bank and a comparison between the historical maps and the current landcover between Main Street and the river indicates little change in the intervening time. The only change, which is not depicted on the historical maps is the provision of the promenade.

In terms of placenames Lucan is derived from the Irish "Leamhcan" meaning "Place of the Elms". Francis Elrington Ball's "History of the County Dublin (1906) suggests the name Lucan is derived from the "Place of the Marshmallows". Marshmallow (*Althaea officinalis*), which is listed as near threatened vascular plant species in Ireland (Jackson, 2016) is a species of coastal areas in the south and west of Ireland. A review of the National Biodiversity Data Centre historical records (from 1746 to 2019) for this species shows its distribution being restricted to the south and west coast with no records from the east coast and Dublin. However marshmallow is referenced by Rutte (1772) in his botanical calendar of native and cultivated species occurring in Dublin.

Wych elm (*Ulmus glabra; Leamhan sleibhe*) is a native species, typical of mountainous areas and mosit soils. There are records for its presence along the steep wooded slopes of the Liffey Valley and given its presence and close name association it is most likely that Lucan is associated with elms rather than marshmallow.

3.1.1 Geology Overview

The bedrock underlying the site is a mix of limestone and shale. A bedrock fault line runs parallel to the left-hand bankside of the river to upstream of the promenade. It is orientated broadly southwest to northeast and crosses the River Liffey close to the line of the weir crossing.

The subsoils are dominated by alluvium derived from the River Liffey while the existing land cover is dominated by artificial made ground. The promenade is situated in an area of high groundwater vulnerability.

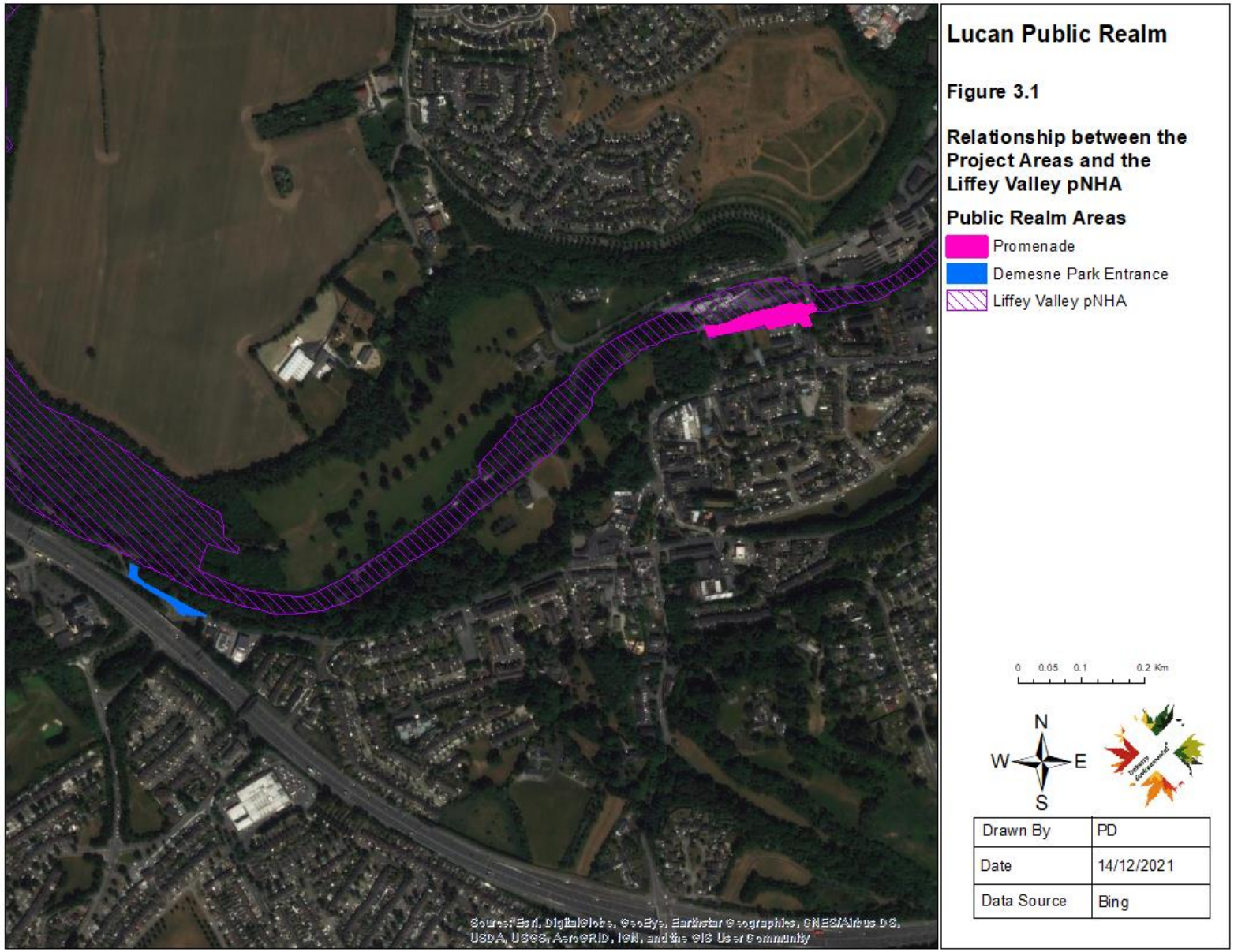
3.1.2 Hydrology

The promenade occupies a section of the right-hand bankside of the River Liffey as it flows through Lucan.

3.1.3 Designated Conservation Areas

There are no European Sites (SACs or SPAs) or Natural Heritage Areas (NHAs) occurring in the vicinity of the Promenade. However the Promenade is located within the Liffey Valley proposed NHA (pNHA) (see Figure 3.1 below). The Liffey Valley pNHA has been summarised as follows:

The Liffey Valley site is situated along the River Liffey between Leixlip Bridge on the Kildare-Dublin border and downstream of the weir at Glenaulin, Palmerstown, Co. Dublin. The river meanders through low hills for much of its course through the site and forms the focus for the site itself. The Mill Race between Palmerstown and the weir at the Wren's Nest Public House is also included in the site. The river is a Salmon river and there are a series of weirs along the river between Palmerstown and Leixlip. The water level in the Mill Race has dropped and the channel has been filled with vegetation in a number of areas as a result. The main terrestrial habitat included within the site is mixed deciduous woodland on fertile, limey alluvium and boulder clay, in which Beech (*Fagus sylvatica*) is dominant in some areas. Elsewhere Ash (*Fraxinus excelsior*) and willow species (*Salix* spp.) are common and there are also some stands of larch (*Larix* spp.) and Scots Pine (*Pinus sylvestris*). Toothwort (*Lathraea squamaria*) has been recorded on a number of tree species. The ground flora commonly includes Ivy (*Hedera helix*), Primrose (*Primula vulgaris*), voilet species (*Viola* spp.), Lords-and-ladies (*Arum maculatum*) and Hart'stongue (*Phyllitis scolopendrium*). These woodlands occur on both sides
.


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Lucan Public Realm
Figure 3.1
Relationship between the Project Areas and the Liffey Valley pNHA
Public Realm Areas
Promenade
Demesne Park Entrance
Liffey Valley pNHA
0 0.05 0.1 0.2 Km
N
W
E
S
Drawn By PD
Date 14/12/2021
Data Source Bing

3.1.4 Land cover & Broad Habitats

The land cover within the Promenade area includes artificial surfaces in the form of paved areas and landscaped verges and flower beds. The bankside supports a thin line of hydrophilous tall herb vegetation in the form of Phalaris arundinacea, Phragmites australis and stands of the non-native invasive plant species Impatiens glandulifera (Himalayan Balsam). A second non-native plant species Erythranthe guttata (Monkey Flower) was also noted along the bankside of the river.

3.2 DEMESNE PARK ENTRANCE

3.2.1 Review of Historical Maps

A review of historical mapping for the Demesne area shows the presence of woodland habitat along the right-hand bankside of the River Liffey between what is now the M4 and the river. This woodland habitat is depicted in Rocque's historical map from 1760 and is present to this day. The woodland formed part of the original Lucan Demesne.

3.2.2 Geology Overview

The bedrock underlying the site is a mix of limestone and shale. A bedrock fault line runs parallel to the left-hand bankside of the river to upstream of the promenade. It is orientated broadly southwest to northeast and crosses the River Liffey close to the line of the weir crossing. The subsoils are dominated by alluvium derived from the River Liffey while the existing land cover is dominated by artificial made ground. The promenade is situated in an area of high groundwater vulnerability.

3.2.3 Hydrology

The Demesne area occupies a section of the right-hand bankside of the River Liffey as it flows through Lucan. The Tobermaclugg Stream flows into the Liffey at the eastern end of this area (see Figure 3.2 below). The lower section of the stream is highly modified being culverted under the western end of Lucan and flowing through an artificial channelised channel prior to it confluence with the Liffey.

3.2.4 Designated Conservation Areas

There are no European Sites (SACs or SPAs) or Natural Heritage Areas (NHAs) occurring in the vicinity of the Promenade. The Demesne area adjacent to the river is located within the Liffey Valley proposed NHA (pNHA) (see Figure 3.1 above).

3.2.5 Land cover & Broad Habitats

The land cover within the Demesne area is comprised by broad-leaved woodland habitat, that is dominated principally by non-native but naturalised species such as Fagus sylvatica and Acer

pseudoplatanus. The woodland is likely to be representative of a mixed broad-leaved woodland habitat (WD1). The woodland to north of the Demesne area on the slopes of the left-hand bankside of the River Liffey were surveyed as part of the National Survey of Native Woodlands in 2010. The woodland here were categorised as a mix of oak-ash-hazel woodland (WN2) and mixed broad-leaved woodland (WD1). The woodland vegetation community occurring at this woodland was categorised as Fraxinus excelsior - Hedera helix woodland group, Acer pseudoplatanus - Crataegus monogyna vegetation type.

3.2.6 Records for Fauna & Flora

The records of rare, threatened and protected fauna held by the NBDC were collated in May 2021. The area shown on Figure 3.3 below was searched for such records and all such species occurring within this area are listed in Table 3.3 below.

An otter spraint was observed at the opening of the Tobermaclugg Stream a short distance upstream of its confluence with the Liffey during a field visit to the site in April 2021.

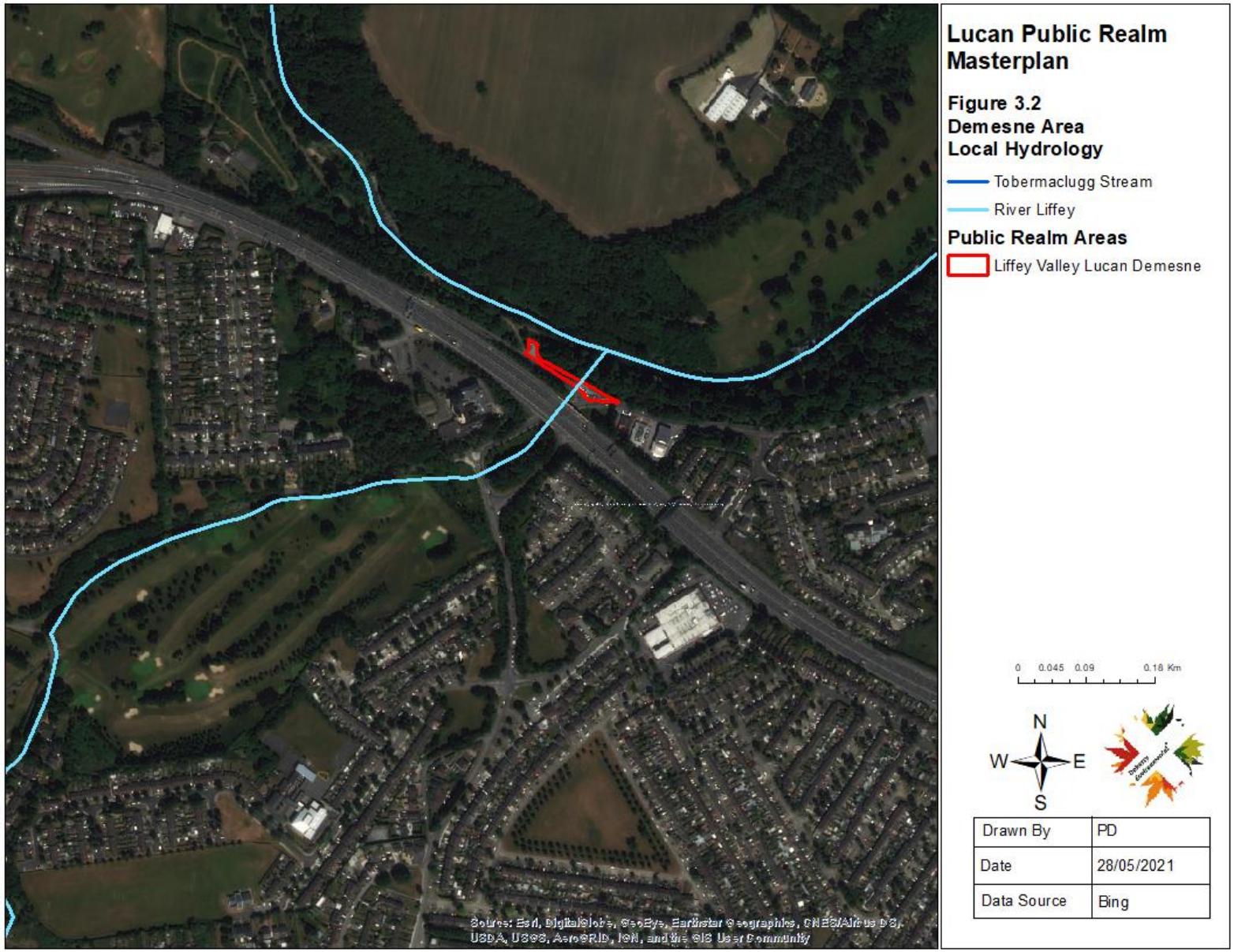

Lucan Public Realm Masterplan
Figure 3.2
Demesne Area
Local Hydrology
Tobermaclugg Stream
River Liffey
Public Realm Areas
Liffey Valley Lucan Demesne
0 0.045 0.09 0.18 Km
N
W
E
S
Drawn By PD
Date 28/05/2021
Data Source Bing

Figure 3.1: Area of Search for Fauna and Flora Records

Table 3.1: List of Rare, threatened and or protected species occurring within the area of search

Species Type	Species	Record Date
bird	Little Egret (Egretta garzetta)	12/10/2017
flowering plant	Green Figwort (Scrophularia umbrosa)	10/07/2020
terrestrial mammal	Daubenton's Bat (Myotis daubentonii)	16/05/2008
terrestrial mammal	Lesser Noctule (Nyctalus leisleri)	02/08/2007
terrestrial mammal	Soprano Pipistrelle (Pipistrellus pygmaeus)	16/05/2008

Green figwort does not occur within the footprint of the Demesne Park Entrance project area. Orobranche hederae (ivy broomrape) was identified as occurring along the bankside of the River Liffey within the footprint of the Demesne Park Entrance. It is noted that none of the works associated with the Demesne Park Entrance as described in Section 2 above will result in disturbance to the stands of ivy-broomrape occurring along the bankside.

Records of non-native invasive species were also collated and are presented in Table 3.2 below.

Table 3.2: Records for Non-native invasive species

Species Type	Species	Record Date
flowering plant	Indian Balsam (Impatiens glandulifera)	20/07/2019
flowering plant	Sycamore (Acer pseudoplatanus)	12/05/2018
terrestrial mammal	Eastern Grey Squirrel (Sciurus carolinensis)	05/09/2018

Of these species Impatiens glandulifera and Acer pseudoplatanus were identified as occurring within the footprint of the Demesne Park Entrance, while as noted above Impatiens glandulifera was identified as occurring along the fringing river vegetation adjacent to the Liffey Promenade. The stands of Impatiens glandulifera are restricted to the area of herb vegetation fringing the river bankside. The works as described in Section 2 above will not result in any activities along the bankside of the river and there will be no potential for the project to result in disturbance to these stands of Impatiens glandulifera or their spread downstream along the river.

4.0 IS THE PROJECT NECESSARY FOR THE CONSERVATION MANAGEMENT OF EUROPEAN SITES

The project has been described in Section 2 of this Screening Report and it is clear from the description provided that the project is not directly connected with or necessary for the future conservation management of any European Sites.

5.0 EUROPEAN SITES OCCURRING WITHIN THE ZONE OF INFLUENCE OF THE PROJECT

Current guidance informing the approach to screening for Appropriate Assessment defines the zone of influence of a proposed development as the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. It is recommended that this is

established on a case-by-case basis using the Source-Pathway-Receptor (SPR) framework.

As a first step in identifying the European Sites that could be connected to the project via SPR pathways all European Sites occurring in the wider surrounding area were identified. Figure 5.1 shows the European Sites occurring in the wider area surrounding the project site. As can be seen in Figures 5.1 no European Sites occur in close vicinity to the project site, with the nearest site being the Rye Water Valley SAC located approximately 2.5km upstream of the project site. The River Liffey, adjacent to which the Liffey Promenade and the Demesne Park Entrance are located, links these project locations to Dublin Bay, where four European Sites are located. These are the North Dublin Bay SAC, South Dublin Bay SAC, North Bull Island SPA and South Dublin Bay & Tolka Estuary SPA. These European Sites at Dublin Bay are located approximately 22Km downstream from the nearest point of the project, the Liffey Promenade.

All other European Sites are located at a remote distance from the project site and are not connected to it via any SPR pathways. As such the remainder of this screening exercise focuses on the four European Sites at Dublin Bay (hereafter jointly referred to as the Dublin Bay European Sites) and the Rye Water Valley SAC.

Using the SPR framework the project, as described in Section 2 of this Screening Report, represents the source of potential impacts to European Sites. During the works associated within new projects, such as those associated with the public realm works the potential exists for the following emissions to occur:

Emissions to surface water

Emissions to groundwater

Noise and vibration emissions

Emissions to air

Light emissions; and

Visual emissions

Projects that are located outside of European Sites can also result in impacts to mobile qualifying species of European Sites in the event that such species rely on habitats occurring within the project site. For the purposes of this screening report this impact is referred to as a "mobile species impact".

Given that all surface water generated at the project site will eventually drain to the River Liffey there is a potential hydrological pathway connecting the project site to Dublin Bay where European Sites are located while the Rye Water Valley SAC is located upstream along the River Liffey and its tributary the Rye Water River.

The project site is located within a separate groundwater body to these European Sites and as such no groundwater pathways are considered to connect the project site to any of the four European Sites and Dublin Bay or the Rye Water Valley SAC upstream.

The project is located at a significant distance from the nearest European Sites and so will not have the potential to result in noise, air, light, or visual emissions that could function as a pathway connecting the project site to these European Sites.

With respect to the five European Sites occurring along the River Liffey pathway, only the North Bull Island SPA and the South Dublin Bay & Tolka Estuary SPA support mobile species in the form of bird species. The project site is located approximately 15km from the nearest point of these two SPAs. Guidance on assessing the connectivity of projects to SPAs and their special conservation interests has been published by Nature Scotland (see SNH, 2016). This guidance is used to facilitate the identification or otherwise of SPAs within the zone of influence of projects by establishing the foraging range of a variety of special conservation interest bird species from SPAs during the winter and breeding season. For the majority of the species listed as special conservation interest bird species of the North Bull Island SPA and the South Dublin Bay & Tolka Estuary SPA the project is considered to lie outside their foraging range. However brent geese which is listed as a special conservation interest for both SPAs are known to range up to 20km from their core SPA grounds. As such there is potential for the mobile species pathway to function as a pathway connecting the project sites to these SPAs.

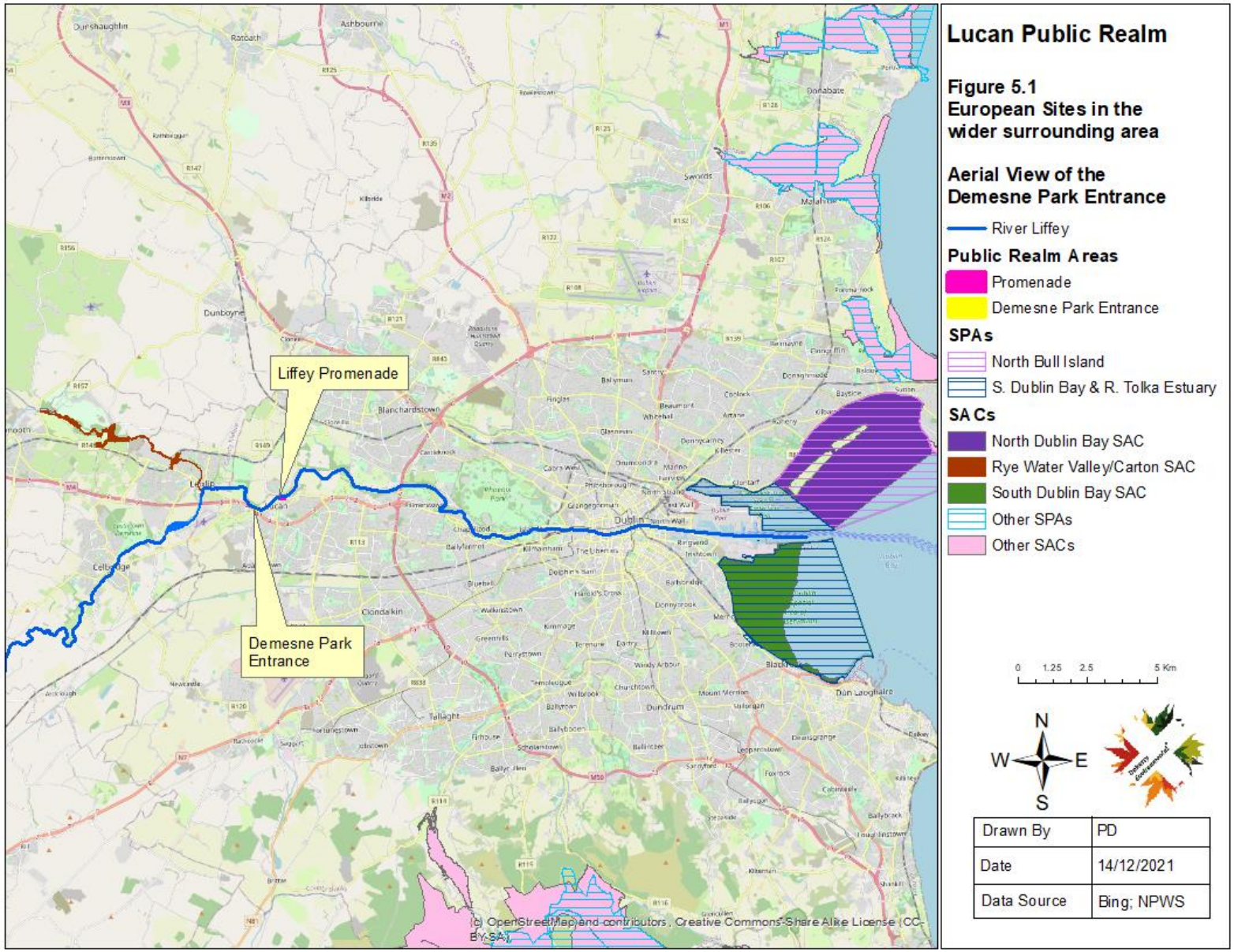
The receptors represent European Sites and their associated qualifying features of interest.

European Sites and their associated qualifying features are likely to occur in the zone of influence of the project only where hydrological pathways establish a link between the project and the European Site.

Table 5.1 provides a evaluation as to whether the Rye Water Valley SAC and the Dublin Bay European Sites occur within the project's zone of influence. This evaluation has been undertaken in line with the following questions:

Is there a Hydrological Pathway and does it have the potential to function as an Impact Pathway?

Is there a mobile species pathway and does it have the potential to function as an impact pathway?


Liffey Promenade
Demesne Park Entrance
(c) OpenStreetMap and contributors, Creative Commons-Share Alike License (CC-BY-SA)
Lucan Public Realm
Figure 5.1
European Sites in the wider surrounding area
Aerial View of the Demesne Park Entrance
River Liffey
Public Realm Areas
Promenade
Demesne Park Entrance
SPAs
North Bull Island
S. Dublin Bay & R. Tolka Estuary
SACs
North Dublin Bay SAC
Rye Water Valley/Carton SAC
South Dublin Bay SAC
Other SPAs
Other SACs
0 1.25 2.5 5 Km
N
W
E
S
Drawn By PD
Date 14/12/2021
Data Source Bing; NPWS

European Sites	**Distance from Project Site**	**Is there a Hydrological Pathway and does it have the potential to function as an Impact Pathway**	**Do the Project have the potential to interact with Mobile Species**	**Do European Sites occur within the Projects Zone of Influence?**
Rye Water Valley SAC	2.5km upstream to the west	No. This SAC is located within a separate surface water sub-catchment to the project .	No. No mobile species are listed as qualifying features of interest for this SAC.	No. This SAC is located at a remote distance upstream from the project site and there are no pathways connecting the project to this SAC and its qualifying features of interest.
South Dublin Bay SAC	22km downstream to the east	This SAC is located at Dublin Bay to the south of the South Wall. This SAC is designated for the presence of coastal Annex 1 habitats. Surface water from the project site will eventually discharge to the River Liffey catchment and as shown on Figure 5.1, the River Liffey forms a hydrological pathway between the project site Dublin Bay where this SAC is located. However the River Liffey does not function as a hydrological pathway between the project site and this SAC. Modelling of the Liffey Estuary and Dublin Bay has shown that the waters from the Liffey draining into Dublin Bay are deflected east and north towards Dollymount and Howth. The presence of the South Great Wall in Dublin Bay provides a barrier to the movement	No. No Annex 2 species are listed as qualifying features of interest for this SAC.	No. This SAC is located at a remote distance upstream from the project site and there are no pathways connecting the project to this SAC and its qualifying features of interest.

		of waters towards the south (Dowly & Bedri, 2007; Bedri et al., 2012; Camp, Dresser & McKee, 2012). As such there is no surface water pathway between the project site and this SAC. .		
North Dublin Bay SAC	22km downstream to the east	Yes, surface waters will drain from the project site to the River Liffey which in turn drains to Dublin Bay and are dispersed over this SAC. As such there is a hydrological connection between the project site and this SAC.	No. This SAC supports a population of the liverwort *Petalophyllum ralfsii*. This is a sedentary species, reliant on terrestrial dune slack habitats occurring on Bull Island and there is no potential for the project to interact with this species.	Yes. The potential for the hydrological pathway, linking the project site to this SAC, to function as an impact pathway requires further examination to establish whether or not the project could result in downstream effects to this SAC.
North Bull Island SPA	22km downstream to the east	Yes, surface waters will drain from the project site to the River Liffey which in turn drains to Dublin Bay and are dispersed over this SPA.	This SPA is designated for its role in supporting a number of wetland bird species. The project site is located outside the foraging range for the majority of the species that this SPA is designated. For	Yes. The potential for the hydrological pathway, linking the project site to this SPA, to function as an impact pathway requires further examination to establish

		As such there is a hydrological connection between the project site and this SAC.	those species, such as light-bellied brent geese, that are known to range at distances within which the project occurs there is no suitable at the Liffey Promenade or the Demesne Park Entrance to support these species. As such there is no function mobile species pathway connecting the project site to this SPA.	whether or not the project could result in downstream effects to this SPA.
South Dublin Bay & Tolka Estuary SPA	22km downstream to the east	Yes, surface waters will drain from the project site to the River Liffey which in turn drains to Dublin Bay and are dispersed over this SPA. As such there is a hydrological connection between the project site and this SAC.	This SPA is designated for its role in supporting a number of wetland bird species. The project site is located outside the foraging range for the majority of the species that this SPA is designated. For those species, such as light-bellied brent geese, that are known to range at distances within which the project occurs there is no suitable at the Liffey Promenade or the Demesne Park Entrance to support these species. As such there is no function mobile species pathway connecting the project site to this SPA.	Yes. The potential for the hydrological pathway, linking the project site to this SPA, to function as an impact pathway requires further examination to establish whether or not the project could result in downstream effects to this SPA.

Table 5.1 above outlines the relationship between the project site and the European Sites occurring within the zone of influence. Of the five European Sites occurring within this zone, three have been identified as requiring further examination to ascertain whether there is potential for impact pathways connecting the project site to these European Sites.

The remainder of this Screening aims to identify whether the project will have the potential to result in likely significant effects to these three European Sites, namely:

1. South Dublin Bay River Tolka Estuary SPA;

2. North Dublin Bay SAC; and

3. North Bull Island SPA.

5.1 EUROPEAN SITES OCCURRING WITHIN THE ZONE OF INFLUENCE

The following sub-sections provide an overview of the three European Sites occurring within the zone of influence of the project.

5.1.1 South Dublin Bay River Tolka Estuary SPA

The South Dublin Bay and River Tolka Estuary SPA comprises a substantial part of Dublin Bay. It includes the intertidal area between the River Liffey and Dun Laoghaire, and the estuary of the River Tolka to the north of the River Liffey, as well as Booterstown Marsh. A portion of the shallow marine waters of the bay is also included.

The site is a Special Protection Area (SPA) designated under the EU Birds Directive, of special conservation interest for the following species over-wintering species: Light-bellied Brent Goose, Oystercatcher, Ringed Plover, Grey Plover, Knot, Sanderling, Dunlin, Bar-tailed Godwit, Curlew, Redshank, and Black-headed Gull.

This SPA is also designated for its role in supporting breeding colonies of the following species: Roseate Tern, Common Tern and Artic Tern. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The qualifying features for which this site has been designated as a SPA are listed in Table 5.3 below. The threats and pressures to this SAC have been documented in the Standard Natura 2000 Data Form for the site (NPWS, 2017b). The documented threats and pressures to this SPA are as follows:

- Walking, horseriding and non-motorised vehicles
- Reclamation of land from sea, estuary or marsh
- Discharges
- Roads, motorways
- Industrial or commercial areas

Table 5.3 lists each of the qualifying features of interest for this SAC and their conservation status.

Table 5.3: **South Dublin Bay River Tolka Estuary SPA qualifying features of interest, and conservation status**

Special conservation interests	**Conservation Status**
Light-bellied Brent Goose (*Branta bernicla hrota*)	Amber listed species- Species of medium conservation concern
Oystercatcher (*Haematopus ostralegus*)	Amber listed species- Species of medium conservation concern
Ringed Plover (*Charadrius hiaticula*)	Amber listed species- Species of medium conservation concern
Grey Plover (*Pluvialis squatarola*)	Amber listed species- Species of medium conservation concern

Special conservation interests	**Conservation Status**
Knot (*Calidris canutus*)	Red listed species – Species of high conservation concern†
Sanderling (*Calidris alba*)	Green listed species – Species not threatened
Dunlin (*Calidris alpina*)	Amber listed species- Species of medium conservation concern
Bar-tailed Godwit (*Limosa lapponica*)	Amber listed species- Species of medium conservation concern
Redshank (*Tringa totanus*)	Red listed species – Species of high conservation concern
Black-headed Gull (*Croicocephalus ridibundus*)	Red listed species – Species of high conservation concern
Roseate Tern (*Sterna dougallii*)	Green listed species – Species not threatened
Common Tern (*Sterna hirundo*)	Amber listed species- Species of medium conservation concern
Arctic Tern (*Sterna paradisaea*)	Amber listed species- Species of medium conservation concern
Wetlands & Waterbirds	

5.1.2 North Dublin Bay SAC

This site covers the inner part of north Dublin Bay, the seaward boundary extending from the Bull Wall lighthouse across to the Martello Tower at Howth Head. The North Bull Island is the focal point of this site. Qualifying features for which this site has been designated as a SAC are listed in Table 5.3 below. The distribution of the habitats associated with this SAC are outlined in the Conservation Objectives for this SAC (see NPWS, 2013).

The threats and pressures to this SAC have been documented in the Standard Natura 2000 Data Form for the site (NPWS, 2017). The documented threats and pressures to this SAC are as follows:

- Urbanised areas, human habitation
- Walking, horseriding and non-motorised vehicles
- Golf course
- Industrial or commercial areas
- Discharges

Table 5.4 lists each of the qualifying features of interest for this SAC and their conservation status.

Table 5.4: North Dublin Bay SAC qualifying features of interest and conservation status

Qualifying Annex Feature	**Conservation Status (Site-Level)**	**Conservation Status (National-Level)**
Mudflats and sandflats not covered by seawater at low tide	Favourable	Inadequate
Annual vegetation of drift lines	Not established	Inadequate

Qualifying Annex Feature	Conservation Status (Site-Level)	Conservation Status (National-Level)
Salicornia and other annuals colonizing mud and sand	Unfavourable	Favourable
Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Favourable	Inadequate
Petalwort (Petalophyllum ralfsii)	Not established	Inadequate
Mediterranean salt meadows (Juncetalia maritimi)	Favourable	Inadequate
Embryonic shifting dunes Shifting dunes along the shoreline with Ammophila arenaria (white dunes)	Unfavourable-inadequate	Inadequate
Fixed coastal dunes with herbaceous vegetation (grey dunes)	Unfavourable-Bad	Bad
Humid dune slacks	Unfavourable-inadeqaute	Inadequate

5.1.3 North Bull Island SPA

This site covers all of the inner part of north Dublin Bay, with the seaward boundary extending from the Bull Wall lighthouse across to Drumleck Point at Howth Head. The site is a Special Protection Area (SPA) under the EU Birds Directive, of special conservation interest for the

following species: Light-bellied Brent Goose, Shelduck, Teal, Pintail, Shoveler, Oystercatcher, Ringed Plover, Golden Plover, Grey Plover, Knot, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone and Black-headed Gull. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The EU Birds Directive provides for attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The qualifying features for which this site has been designated as a SPA are listed in Table 5.5 below. The threats and pressures to this SPA have been documented in the Standard Natura 2000 Data Form for the site (NPWS, 2017a). The documented threats and pressures to this SPA are as follows:

- Disposal of household / recreational facility waste
- Golf Course
- Industrial or commercial areas
- Walking, horseriding and non-motorised vehicles
- Bridge, viaduct
- Roads, motorways
- Discharges

Table 5.5 lists each of the qualifying features of interest for this SAC and their conservation status.

Special Conservation Interests	**Conservation Status**
Light-bellied Brent Goose (*Branta bernicla hrota*)	Amber listed species- Species of medium conservation concern
Shelduck (*Tadorna tadorna*)	Amber listed species- Species of medium conservation concern
Teal (*Anas crecca*)	Amber listed species- Species of medium conservation concern
Pintail (*Anas acuta*)	Red listed species – Species of high conservation concern†
Shoveler (*Anas clypeata*)	Red listed species – Species of high conservation concern†
Oystercatcher (*Haematopus ostralegus*)	Amber listed species- Species of medium conservation concern
Golden Plover (*Pluvialis apricaria*)	Red listed species – Species of high conservation concern
Grey Plover (*Pluvialis squatarola*)	Amber listed species- Species of medium conservation concern
Knot (*Calidris canutus*)	Red listed species – Species of high conservation concern†
Sanderling (*Calidris alba)*	Green listed species – Species not threatened

Dunlin (*Calidris alpina*)	Amber listed species- Species of medium conservation concern
Black-tailed Godwit (*Limosa limosa*)	Amber listed species- Species of medium conservation concern
Bar-tailed Godwit (*Limosa lapponica*)	Amber listed species- Species of medium conservation concern
Curlew (*Numenius arquata*)	Red listed species – Species of high conservation concern
Redshank (*Tringa totanus*)	Red listed species – Species of high conservation concern
Turnstone (*Arenaria interpres*)	Green listed species – Species not threatened
Black-headed Gull (*Larus ridibundus*)	Red listed species – Species of high conservation concern
Wetlands & Waterbirds	

5.2 QUALIFYING FEATURES OF INTEREST/SPECIAL CONSERVATION INTERESTS CONNECTED TO THE PROJECT VIA HYDROLOGICAL PATHWAY

Table 5.6 below lists the qualifying features of interest/special conservation interests of the four European Sites that are hydrologically connected to the project site and identifies the interest features of these four European Sites that are influenced by transitional/coastal waters.

Table 5.6: Identification of Qualifying Features of Interest/Special Conservation Interests Influenced Transitional/Coastal Waters

European Site	Qualifying Interest	Is the qualifying feature of interest/special conservation interest Influenced by Transitional/Coastal Waters
North Dublin Bay SAC	Mudflats and sandflats not covered by seawater at low tide	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Annual vegetation of drift lines	No. This habitat is not influenced by surface waters and lotic processes.
	Salicornia and other annuals colonizing mud and sand	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Spartina swards (Spartinion maritimae)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Petalwort (Petalophyllum ralfsii)	No. This species is reliant on humid dune slacks occurring within the terrestrial environment. This dune slacks will not be influenced by hydrological emissions.

	Mediterranean salt meadows (Juncetalia maritimi)	No. Examples of this habitat are restricted to the northwestern end of Bull Island and are considered to lie outside the influence of the hydrological pathway established by the River Liffey.
	Embryonic shifting dunes Shifting dunes along the shoreline with Ammophila arenaria (white dunes)	No. This is a terrestrial habitat that will not be influence by hydrological emissions.
	Fixed coastal dunes with herbaceous vegetation (grey dunes)	No. This is a terrestrial habitat that will not be influence by hydrological emissions.
	Humid dune slacks	No. This is a terrestrial habitat that will not be influence by hydrological emissions.
North Dublin Bay SPA	Light-bellied Brent Goose (*Branta bernicla hrota*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Shelduck (*Tadorna tadorna*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Teal (*Anas crecca*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.

	Pintail (*Anas acuta*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Shoveler (*Anas clypeata*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Oystercatcher (*Haematopus ostralegus*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Golden Plover (*Pluvialis apricaria*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Grey Plover (*Pluvialis squatarola*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Knot (*Calidris canutus*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Sanderling (*Calidris alba)*	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.

	Dunlin (*Calidris alpina*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Black-tailed Godwit (*Limosa limosa*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Bar-tailed Godwit (*Limosa lapponica*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Curlew (*Numenius arquata*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Redshank (*Tringa totanus*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Turnstone (*Arenaria interpres*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Black-headed Gull (*Larus ridibundus*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.

	Wetlands & Waterbirds	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
South Dublin Bay River Tolka Estuary SPA	Light-bellied Brent Goose (*Branta bernicla hrota*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Oystercatcher (*Haematopus ostralegus*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Ringed Plover (*Charadrius hiaticula*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Grey Plover (*Pluvialis squatarola*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Knot (*Calidris canutus*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Sanderling (*Calidris alba*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.

	Dunlin (*Calidris alpina*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Bar-tailed Godwit (*Limosa lapponica*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Redshank (*Tringa totanus*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Black-headed Gull (*Croicocephalus ridibundus*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Roseate Tern (*Sterna dougallii*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Common Tern (*Sterna hirundo*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.
	Arctic Tern (*Sterna paradisaea*)	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.

	Wetlands & Waterbirds	Yes. Hydrological pathways in the form of surface water discharges to the River Liffey will have the potential to link the project to this qualifying habitat.

Following on from Table 5.6 above, Table 5.7 provides a summary of the qualifying features of interest that can be influenced by transitional/coastal waters and their associated water quality. The qualifying features of interest are grouped into broader groups that will be referred to in the assessment sections below.

Table 5.7: Summary of qualifying features of interest/special conservation interests occurring within the Zone Of Influence of the Project

Qualifying feature Group	Qualifying feature of interest	Associated European Site
Coastal/Littoral Habitats	Mudflats and sandflats not covered by seawater at low tide	North Bull Island SAC
	Salicornia and other annuals colonising mud and sand	North Bull Island SAC
	Spartina swards (Spartinion maritimae)	North Bull Island SAC
	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	North Bull Island SAC
Coastal/Littoral Bird Species	Special conservation interests wetland bird species	South Dublin Bay River Tolka Estuary SPA & North Dublin Bay SPA

6.0 EXAMINATION OF LIKELY SIGNIFICANT EFFECTS TO FEATURES OF INTEREST WITHIN THE ZONE OF INFLUENCE

The consideration of likely significant effects to European Sites as a result of the project relates to an examination of the project's potential to result in contamination to local surface waters, with consequent negative indirect effects downstream at Dublin Bay to transitional/coastal waters influencing the features of interest listed in Table 5.7 above.

The local surface water that could receive contaminated surface water in the event of a release of pollutants to the aquatic environment is the River Liffey. Whether the project will have the potential to result in negative effects to the European Sites at Dublin Bay downstream is dependent on the capacity of the hydrological pathway between the project site and Dublin Bay to function as an effective impact pathway. An assessment of the hydrological pathway and its potential to function as an impact pathway is provided in the following sub-section.

6.1 EXAMINATION OF EFFECTS

6.1.1 Surface Water Pathway

The nearest point of the three Dublin Bay European Sites to the project site is approximately 22km downstream along the River Liffey and the Liffey Estuary. The surface water that will be generated at both project site's and the volumes discharging from them to the River Liffey and the Liffey Estuary represent a minor fraction of the overall volume of freshwater draining into the Liffey estuary and Dublin Bay. This will eliminate the potential for the project, even in the event of the release of contaminated surface water as a result of the project to the River Liffey, from having an effect on the conservation status of European Sites downstream at Dublin Bay. Further details supporting this evaluation of an absence of a functional impact pathway established by the hydrological pathway between the project site and the Dublin Bay European Sites are as follows:

- The works required at the Liffey Promenade are very minor in scale and are not considered to have the potential to result in the generation of contaminated surface water runoff with potential to undermine the water quality of the River Liffey. The works as detailed in Section 2 above will comprise landscaping and planting and the provision of a new external stairway from the bridge to the promenade at river level.

There will be no works to the promenade pathway itself or the river edge and as such all works will be buffered from the river edge by a minimum of 5m. as noted in Section 3 above the presence of the non-native invasive plant species Impatiens glandulifera has been identified along the section of the river adjacent to the Liffey Promenade. However given that the project will not involve any works along the river bankside and will be buffered back from the bankside by a minimum of 5m there will be no potential for the works associated with the Liffey Promenade to result in the spread of this non-native invasive plant species downstream.

- The works required at the Demesne Park Entrance are very minor in scale and are not considered to have the potential to result in the generation of contaminated surface water runoff with potential to undermine the water quality of the River Liffey. The works as detailed in Section 2 above will comprise the releveling of the existing surface on the N4 slip road side of the existing demesne wall, the removal of tarmac and the resurfacing of non-paved areas as well as the provision of other minor elements such as a steel portal and the removal of a portion of the existing park boundary wall. The elements of work required for the Demesne Park Entrance are considered to be small in scale and of a temporary nature and will not pose a risk of generating significantly contaminated surface water runoff that could in turn perturb the water quality of the River Liffey.

- The volumes of surface water draining the project site represents a miniscule fraction of the volumes discharging to the Liffey Estuary upstream of the Dublin Bay European Sites. This is supported by an examination of the area occupied by the footprint of the project site (i.e. approximately 1 Ha within the Liffey_SC_090 subcatchment (approximately 14,000 Ha in size) in which the project site is located. The project site represents 0.008% of the land surface occurring within this catchment and the runoff generated at the project site will therefore represent a miniscule extent of the runoff draining from lands within this sub-catchment. In the unlikely event that contaminated waters enter the River Liffey, based on the above any associated pollutants will be entirely diluted within the River Liffey and the Liffey estuary downstream such that there will be no potential for them to result in perturbations to coastal water interacting with the Dublin Bay European Sites.

- Further to the fact that the waters draining represent a miniscule fraction of freshwater inputs to the Liffey estuary, it is noted that there are multiple other sources of freshwater (11 in total, some of which include the River Dodder, Royal Canal, River Cammock etc.) entering the Liffey Estuary. These other sources combine with the River Liffey discharges to further dilute freshwater discharging the Liffey Estuary and Dublin Bay. In light of this any discharges to the River Liffey Estuary from the project site will be thoroughly mixed and imperceptible downstream within the Liffey Estuary and will be further diluted by the tidal coastal waters at Dublin Bay.

- Finally, in support of the above, other studies have shown that pollutants in the estuary are rapidly mixed and become diluted within the estuary and Dublin Bay (O'Higgins and Wilson, 2005; Wilson and Jackson, 2011) again indicating that any potential for the release of contaminants to the River Liffey during the project will not have the potential to result in any perceptible effect to water quality downstream at Dublin Bay.

6.2 IN-COMBINATION EFFECTS

Cumulative in-combination effects can arise as a result of projects where they have the potential to generate emissions to the environment, in this instance surface waters, with potential to result in negative impact to the receiving environment. However given the small scale of the project works proposed at the Liffey Promenade and the Demesne Park Entrance and the negligible risks these works pose to the water quality of the River Liffey locally to the project and/or downstream of the project, it is considered that there will be no potential for the project to combine with other projects in the surrounding area or downstream along the River Liffey to result in negative impacts to European Sites downstream at Dublin Bay.

7.0 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS IN VIEW OF EUROPEAN SITE CONSERVATION OBJECTIVES

The function of this screening exercise is to determine whether the project is likely to have significant effects on European Sites. The screening is required to be completed in view of the Conservation Objectives for the qualifying features of interest of these European Sites that also occur within the zone of influence of the project.

Site Specific Conservation Objectives (SSCOs) have been formulated for all three European Sites occurring within the zone of influence of the project. The structural and functional elements of a European Site to maintain the favourable conservation status of qualifying features of interest is embedded into the list of SSCOs for each of the site's interest features. As such the SSCOs of a European Site represent the parameters against which an assessment of a project's potential to result in likely significant effects should be undertaken.

SSCOs for the special conservation interests of the South Dublin Bay River Tolka Estuary SPA and the North Bull Island SPA; and the relevant qualifying features of interest of the North Dublin Bay cSAC occurring within the zone of influence of the project have been published by the NPWS (NPWS, 2013; 2015a; 2015b). Table 7.1 lists the Conservation Objectives attributes and targets for each of these features and provides an assessment of the project's potential to result in likely significant effects to these objectives .

Table 7.1: Assessment of the Project potential to effect the SSCOs of the qualifying feature occurring within its Zone of Influence

Attribute. No.	**Attribute**	**Target**	**Assessment**
Mudflats (North Dublin Bay cSAC)			
1	Habitat area	The permanent habitat area is stable or increasing, subject to natural processes.	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
2	Community distribution	Conserve the following community types in a natural condition: Intertidal sand with *Scolelepis squamata* and *Pontocrates* spp. community; and Intertidal sand to mixed sediment with polychaetes, molluscs and crustaceans community complex.	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
Salicornia and other annuals colonising mud (North Dublin Bay cSAC)			
3	Habitat area	Area stable or increasing, subject to natural processes, including erosion and succession.	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
4	Habitat distribution	No decline or change in habitat distribution, subject to natural processes.	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
5	Physical structure: sediment supply	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
6	Physical structure: creeks and pans	Maintain creek and pan structure, subject to natural processes, including erosion and succession	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.

7	Physical structure: flooding regime	Maintain natural tidal regime	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
8	Vegetation structure: zonation	Maintain the range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
9	Vegetation structure: vegetation height	Maintain structural variation within sward	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
10	Vegetation structure: vegetation cover	Maintain more than 90% of the saltmarsh area vegetated	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
11	Vegetation composition: typical species and sub-communities	Maintain range of sub-communities with typical species listed in Saltmarsh Monitoring Project (McCorry and Ryle, 2009)	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
12	Vegetation structure: negative indicator species- *Spartina anglica*	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1%	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
Special conservation interest bird species (South Dublin Bay River Tolka Estuary SPA & North Bull Island SPA)			
22	Population trend	Long term population trend stable or increasing	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.
23	Distribution	There should be no significant decrease in the range, timing or intensity of use of areas by special conservation interest bird species of the SPA occurring within the zone of influence other than that occurring from natural patterns of variation	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.

Wetland habitat (South Dublin Bay River Tolka Estuary SPA & North Bull Island SPA)			
24	Wetland habitat area	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 32,261ha, other than that occurring from natural patterns of variation	For reasons outlined in Section 6 above the project will not have the potential to undermine the targets for this conservation objective attribute.

8.0 CONCLUSION

During the examination of the project it was found that 5 no. European Sites occur along the River Liffey adjacent to which the project sites are located. The nearest European Sites to the project site (i.e. the Rye Water Valley SAC) is located approximately 2.5km to the west. Of the 5 no. European Sites occurring within the wider area along the River Liffey, the potential for a pathway was discounted between two, namely the Rye Water Valley SAC and the South Dublin Bay SAC. This is dues to the location of the Rye Water Valley SAC approximately 2.5km upstream of the nearest point of the project site and the absence of interactions between the River Liffey and the South Dublin Bay SAC. the potential for the River Liffey to function as an impact pathway between the project site and the remaining three European Sites was examined further as part of this screening exercise. This examination was completed by considering all aspects of the proposed project that could result in the emission of potentially polluting material to the River Liffey.

This examination found that the project and the associated works at the Liffey Promenade and the Demesne Park Entrance will be very minor in their extent and will pose a negligible risk to the water quality of the River Liffey locally in the vicinity of the project site works or downstream along the river.

The examination also found that, even in the unlikely event that the project were to result in the emission of contaminants to the River Liffey, such contaminants will become entirely diluted and dispersed within the river thereby eliminating the potential for perturbations to coastal waters that interact with the three European Sites located downstream at Dublin Bay.

The absence of a functional surface water hydrological impact pathway between the project site and the Dublin Bay European Sites will ensure that the project will not have the potential to result in likely significant effects to the future conservation status of qualifying features of interest and special conservation interests for which these European Sites are designated and will not undermine the achievement of their site-specific conservation objectives. It addition, given the absence of a functional hydrological pathway connecting the project site to the three European Sites at Dublin Bay and the negligible risk posed by the project to the water quality of the River Liffey it was found that the project will not have the potential to combine with other projects to result in cumulative negative effects to the European Sites at Dublin Bay.

In light of the findings of this report it is the considered view of the authors of this Screening Report for Appropriate Assessment that it can be concluded by South Dublin County Council that the project is not likely, alone or in-combination with other plans or projects, to have a significant effect on any European Sites in view of their Conservation Objectives and on the basis of best scientific evidence and there is no reasonable scientific doubt as to that conclusion.

Accordingly, the competent authority is enabled to determine that it can be excluded, on the basis of objective information, that the project, individually or in combination with other plans or projects, will have a significant effect on any European Site.

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