Lucan Demesne Parking, Leixlip Road, Lucan, Co. Dublin

Screening for Appropriate Assessment (Draft)

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Project number: 2021s0208

South Dublin County Council

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Revision History

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S3-P01 / 31-03-2021	Draft Report	South Dublin County Council
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Contract

This report describes work commissioned by Jed McDermott, on behalf of South Dublin County Council, by an email dated 08/02/2021. William Mulville of JBA Consulting carried out this work.

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Purpose

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Abbreviations

AA	Appropriate Assessment
DoEHLG	Department of Environment, Heritage and Local Government
EC	European Communities
EPA	Environmental Protection Agency
EU	European Union
GIS	Geographical Information Systems
IROPI	Imperative Reasons of Over-riding Public Interest
NBDC	National Biodiversity Data Centre
NPWS	National Parks and Wildlife Service
PM	Particulate matter
QI	Qualifying Interest
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SDCC	South Dublin County Council
SPA	Special Protection Area
WFD	Water Framework Directive
WWTP	Waste Water Treatment Plant
ZoI	Zone of Influence

1 Introduction

1.1 Background

JBA Consulting Ireland Ltd. has been commissioned by South Dublin County Council to undertake a Screening for Appropriate Assessment in relation to a proposed parking development at Lucan Demesne, Leixlip Road, Lucan, Co. Dublin.

1.2 Legislative Context

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

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

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

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

Article 6(4) states:

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

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

The requirements of Articles 6(3) and 6(4) of the Habitats Directive have been transposed into Irish legislation by means of the Habitats Regulations, 1997 (S.I. No. 94 of 1997) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 / 2011).

1.3 Appropriate Assessment Process

Guidance on the Appropriate Assessment (AA) process was produced by the European Commission in 2002, which was subsequently developed into guidance specifically for Ireland by the Department of Environment, Heritage and Local Government (DEHLG) (2009). These guidance documents identify a staged approach to conducting an AA, as shown in Figure 1-1 overleaf.

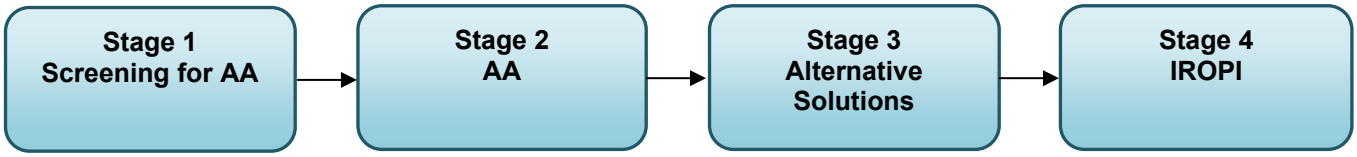


Figure 1-1:The Appropriate Assessment Process (from: Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities, DEHLG, 2009)

1.3.1 Stage 1 - Screening for AA

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

- whether the proposed plan or project is directly connected with or necessary for the management of the European designated site for nature conservation
- if it is likely to have a significant adverse effect on the European designated site, either individually or in combination with other plans or projects

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

1.3.2 Stage 2 - AA

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

The competent authority can only agree to the plan or project after having ascertained that it will not adversely affect the integrity of the site(s) concerned. If this cannot be determined, and where mitigation cannot be achieved, then alternative solutions will need to be considered (i.e. the process proceeds to Stage 3).

1.3.3 Stage 3 - Alternative Solutions

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

1.3.4 Stage 4 - IROPI

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

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

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

1.4 Methodology

The Screening for Appropriate Assessment has been carried out with reference to the following documents:

- DoEHLG (2009 rev 2010) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government (DoEHLG 2009).

- European Communities (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. European Commission (European Commission 2000).
- EC (2002) Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission (European Commission et al. 2002).
- EC (2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. European Commission (European Commission 2007).
- CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater, and Marine. (Chartered Institute of Ecology and Environmental Management, 2018)
- Fossitt, J. (2000). A Guide to Habitats in Ireland. The Heritage Council, Kilkenny (Fossitt 2000).

Data has been collected from a range of sources, including:

- NPWS website (www.npws.ie);
- River Basin Management Plans (RBMP) (www.wfdireland.ie);
- NBDC Biodiversity Maps (http://maps.biodiversityireland.ie/#/Map);
- Catchments (www.catchments.ie)

1.4.1 Limitations and Constraints

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

- Information on the works and conditions on site are based on current knowledge at the time of writing. Changes to the site since surveys were undertaken cannot be accounted for.
- This assessment is based on the methodology for proposed works as described in this report. Where changes to methodology occur, an ecologist will need to be consulted to determine if the changes need reassessment.
- Adverse weather can cause delays to the schedule and alter the timing of works. This has been accounted for using a worst-case scenario where necessary.
- Floral species identification was limited given the timing (February) of the ecological walkover survey.

2 Project Description

2.1 The 'Project'

The proposed development is not directly connected with or necessary to the management of any Natura 2000 site and may have potential adverse impacts upon the Natura 2000 sites identified in Section 4. Therefore, the proposed project is subject to the requirements of the AA process.

2.2 Site location

The proposed parking development will be located in two sections along the Lucan Demesne, Leixlip Road (R835), west and east of the Lucan Bypass (N4) (Figure 2-1). The River Liffey is located approximately 75m and 110m north of the western (A) and eastern (B) site sections, respectively. Additionally, the Lucan Stream is located 15m south of the western site section, before entering a short-culverted section and then flowing into the River Liffey.

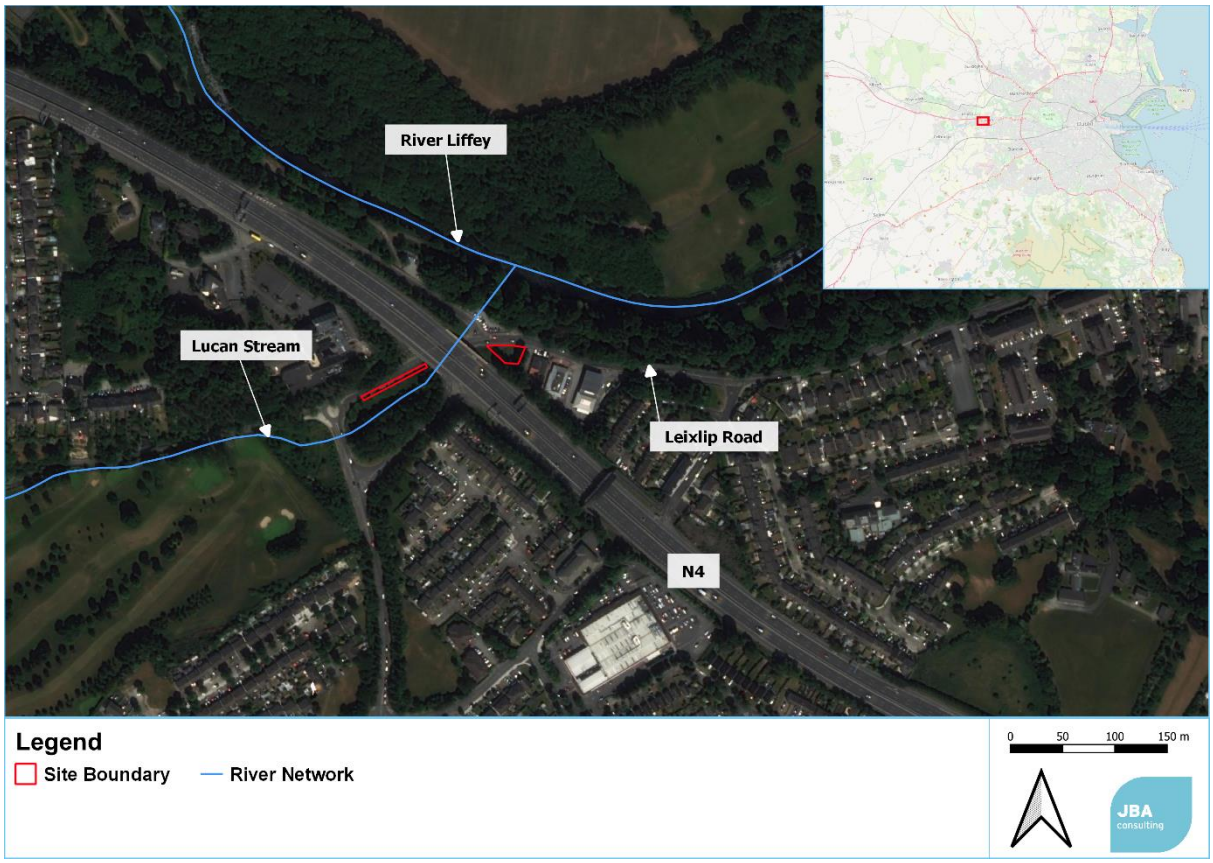


Figure 2-1: Site location (ESRI: Satellite Imagery 2021; OSM 2021)

2.3 Proposed project

This project involves the development of additional parking facilities to replace existing facilities at the Lucan Demesne entrance. Existing parking facilities at Lucan Demesne are to be removed to allow for the provision of a more welcoming entrance to Lucan Demesne to preserve and provide for open space and recreational activities. It is proposed to re-locate parking to 2 no. new sites in the close vicinity to Lucan Demesne. Both sites are to be designed with the use of SUDs to provide both drainage and public amenity as a priority.

Site A is proposed to provide on-street parking on the westbound lane of the R835, to the west of the N4 overbridge. Site A is proposed to include for 7 no. on-street parking spaces. Drawing attached.

Site B is proposed to provide off-street parking by means of a small car-park. Site B is located off the westbound lane of the R835 directly to the east of the N4 overbridge. Site B is proposed to provide 7 no. car parking spaces, including 2 no. Wheelchair Accessible spaces.

Site Layout Plans for both sites can be viewed in Appendices A & B.

2.3.1 Project Area of Influence

The project will primarily affect the site only, but a wider area of influence is used for impacts relating to noise disturbance (1km), air pollution (5km), surface water (15km), with an additional transitional waters connection buffer to coastal areas; and any supporting habitat for SAC/SPA species (15km).

3 Existing Environment

3.1 Baseline conditions

The ecological walkover survey was conducted on 18th of February 2021 by JBA Ecologist William Mulville. The eastern site (A) is currently a maintained amenity grassland with surrounding treeline, while the western site (B) comprises of a footpath, roadway and a grassy verge separating the two artificial surfaces.

3.2 Habitats

The habitats recorded during the ecological walkover are listed in Table 3-1 and displayed below in Figure 3-1. The habitat map is also available to view in Appendix C.

Table 3-1: List of habitats recorded on site

Habitat	Fossitt Code
Stone walls and other stonework	BL1
Buildings and other artificial surfaces	BL3
Amenity (improved) grassland	GA2
Dry meadows and grassy verges	GS2
Eroding / upland rivers	FW1
(Mixed) broadleaved woodland	WD1
Treelines	WL2
Scrub	WS1
Ornamental / non-native shrub	WS3

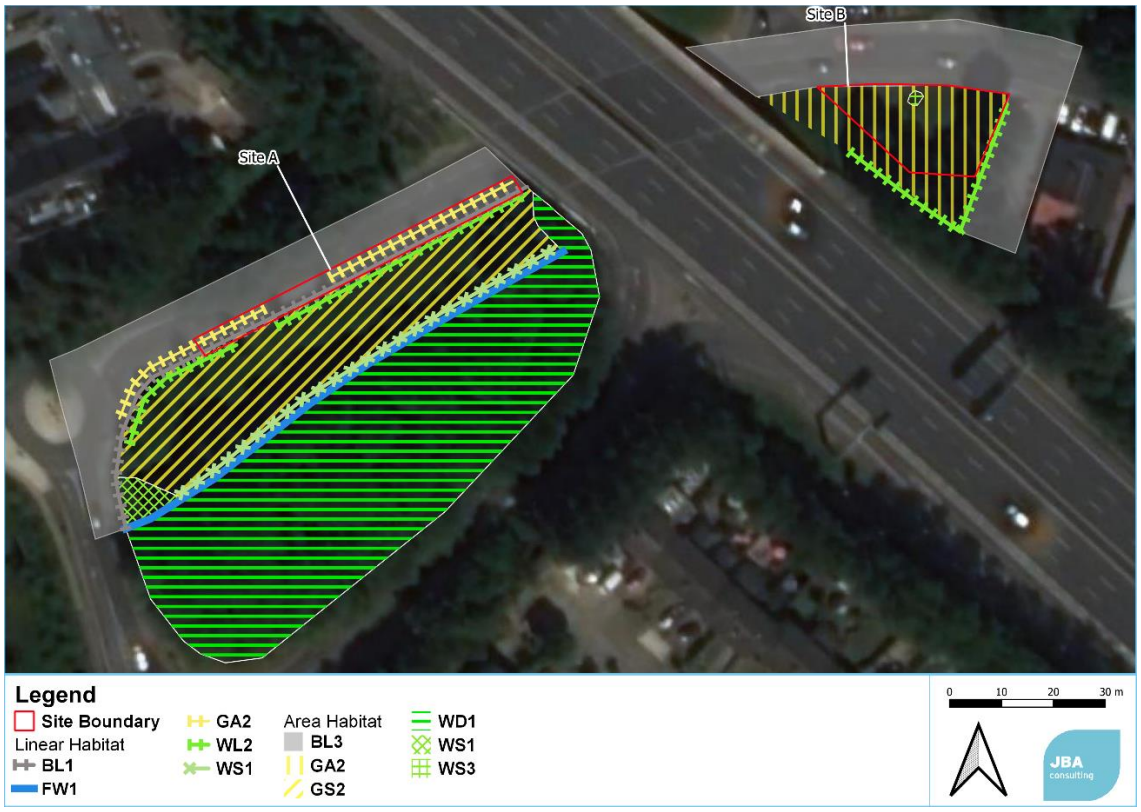


Figure 3-1: Habitat Map (ESRI: Satellite Imagery 2021)

3.2.1 Stone walls and other stonework (BL1)

Site A:

A concrete block wall runs the length of the western site along its southern boundary. The wall is gated towards its western end, allowing access into the adjacent grassland (Figure 3-2 below).

Figure 3-2: The western site section, with accompanying wall, footpath, amenity grass strip and roadway

3.2.2 Buildings and other artificial surfaces (BL3)

Site A:

The artificial surfaces which form this habitat in the western site section includes pedestrian footpaths; a bus stop; and tarmacadam, i.e. Leixlip Road (Figure 3-2).

Site B:

The artificial surfaces which make up this habitat in the eastern site section includes pedestrian footpaths and tarmacadam, i.e. Leixlip Road and restaurant takeaway parking area.

3.2.3 Amenity (improved) grassland (GA2)

Site B:

Amenity grassland dominates the eastern site section (Figure 3-3 overleaf). The floral species in this habitat was comprised of Perennial Rye-grass *Lolium perenne*; False Oat-grass *Arrhenatherum elatius*; Thistle *Cirsium* spp.; Cow Parsley *Anthriscus sylvestris*; Dock *Rumex* spp.; Ribwort Plantain *Plantago lanceolata*; Daisy *Bellis perennis*; Meadow Buttercup *Ranunculus acris*; Common Dandelion *Taraxacum officinale*; Creeping Cinquefoil *Potentilla reptans*; Bush Vetch *Vicia sepium*; Creeping Buttercup *Ranunculus repens*; Germander Speedwell *Veronica chamaedrys*; and Cleavers *Galium aparine*. Species diversity was generally higher at the less frequently maintained edges by the adjacent treelines.

Figure 3-3: Eastern site section dominated by amenity grassland and bordered by treelines

3.2.4 Dry meadows and grassy verges (GS2)

Site A:

A dry meadow grassland is located directly south of the western site section (Figure 3-4). Floral species recorded in this habitat included False Oat-grass; Meadow Foxtail *Alopecurus pratensis*; Cock's Foot *Dactylis glomerata*; Yorkshire Fog *Holcus lanatus*; Common Bent *Agrostis capillaris*; Perennial Rye-grass; Dock spp.; Thistle spp.; Meadow Buttercup; Ribwort Plantain; Creeping Cinquefoil; Creeping Buttercup; Common Dandelion; Bush Vetch; Germander Speedwell; Daisy; Red Clover *Trifolium pratense*; Common Sorrel *Rumex acetosa*; Perennial Sowthistle *Sonchus arvensis*; Ragwort *Jacobaea vulgaris*; Cut-leaved Crane's-bill *Geranium dissectum*;Cow Parsley; Hogweed *Heracleum sphondylium*; and Nettle *Urtica dioica*. The three latter species dominated the wetter areas bordering the scrub along the Lucan Stream. White-tailed Bumblebee *Bombus lucorum* was observed utilising this habitat.

Figure 3-4: The dry meadow grassland immediately south of the western site section

3.2.5 Eroding / upland rivers (FW1)

Site A:

The Lucan Stream is located approximately 15m south of the western site section. The stream was approximately 1.75m - 2m in width and 20- 30cm in depth. This eroding river habitat did not support any instream vegetation along this stretch of the Lucan Stream. The banks of the stream were colonised by Cow Parsley, Creeping Buttercup; Yellow Iris *Iris pseudacorus*; Ivy *Hedera hibernica*; Ground-ivy *Glechoma hederacea*; Common Reed *Phragmites australis*; Hart's Tongue-fern *Asplenium scolopendrium*; and Willow *Salix* spp. saplings.

Figure 3-5: Lucan Stream with woodland (right bank) and wet scrub (left bank) species lining its banks

3.2.6 (Mixed) broadleaved woodland (WD1)

Site A:

A mixed broadleaved woodland is located along the right bank of the Lucan Stream, and it crosses over the stream where the culvert begins, bringing it within 10m of the eastern boundary of the western site section (Figure 3-4). Species recorded in this habitat included Ash *Fraxinus excelsior*; Silver Birch *Betula pendula*; Elder *Sambucus nigra*; Sycamore *Acer pseudoplatanus;* Horse-chestnut *Aesculus hippocastanum*; Willow; Hogweed *Heracleum sphondylium*; Ivy; Ground-ivy; Cow Parsley; and Hart's Tongue-fern. Wood Pigeon *Columba palumbus* was recorded utilising this habitat.

3.2.7 Treelines (WL2)

Site A:

A treeline habitat comprised of Silver Birch, with a Beech *Fagus sylvatica* hedging understorey runs along the southern border of the western site section (Figure 3-4). Wood Pigeon was recorded utilising this habitat.

Site B:

Treeline habitat runs along the southern, eastern and western boundaries of the eastern site section (Figure 3-3). Floral species recorded in this habitat include Silver Birch; Cypress *Cupressus* spp.; Elder; and Sycamore; with Ivy and Hogweed present in the understorey. The invasive non-native Cherry Laurel *Prunus laurocerasus* was recorded within this habitat.

3.2.8 Scrub (WS1)

Site A:

Scrub was present along the left bank of this stretch of the Lucan Stream, with more established growth towards the western bridge culvert. Floral species recorded in this habitat included Bramble *Rubus fructicosus agg*.; Willowherb *Epilobium* spp.; Hogweed; Dogwood *Cornus* spp.; Nettle and Willow saplings.

3.2.9 Ornamental / non-native shrub (WS3)

Site B:

A small flowerbed patch of shrubbery and planted flowers (e.g. Daffodils *Narcissus* spp.) are located in the centre of the eastern site section (Figure 3-3).

3.3 Protected Flora and Fauna

3.3.1 Flora

No protected floral species were recorded by the JBA Ecologist during the ecological walkover survey of the proposed site sections. Furthermore, the NBDC shows no record of any protected flora species being present on-site (NBDC, 2021).

3.3.2 Fauna

Birds (Wood Pigeon)

One bird of conservation concern, namely Wood Pigeon, was recorded within the site's treeline habitat and the adjacent woodland located outside of the Site A boundary. Wood Pigeon is protected under Annexes II(I) and III(I) of the EU Birds Directive and Ireland's Wildlife Act 1976 (and its subsequent amendments). However, as these species are not QIs of any of the identified Natura 2000 sites, they will not be examined in any further detail within this AA Screening report.

3.4 Invasive Non-native Species

One invasive non-native species, namely Cherry Laurel, was recorded by the JBA Ecologist during the ecological walkover survey of eastern Site B. Cherry Laurel is a high impact invasive species but is not currently listed on the third schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/2011. The NBDC shows no record of any additional invasive non-native species being present on-site (NBDC, 2021).

3.5 Waterbodies within the Vicinity of the Proposed Site

The site lies within the Water Framework Directive (WFD) Liffey and Dublin Bay catchment and the sub-catchment Liffey_SC_090 (EPA, 2021a). The Lucan Stream (Liffey_170) is located 15m south of Site A, where it flows into the River Liffey (Liffey_170) approximately 75m north of Site B. The Liffey_170 section currently has a 'Good' WFD (2013-2018) status, while its Risk status is currently under review (EPA, 2021a).

4 Natura 2000 Sites

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

- Any Natura 2000 sites within or adjacent to the plan or project area.
- Any Natura 2000 sites within the likely zone of impact of the plan or project. This is dependent on the nature and scale of the plan, with 15km generally recommended for plans, but potentially much less for projects.
- Any Natura 2000 sites that are more than 15km from the plan or project area, but may potentially be impacted upon, for example, through a hydrological connection.

As the scale of proposed works are considered of 'Project' status, only Natura 2000 sites within a 15km (plus relevant freshwater and transitional/estuarine hydrological extensions) range of the proposed development were examined. The Natura 2000 sites within the range are listed in Table 4-1 below and their location are shown in Figure 4-1 in overleaf.

Table 4-1: Natura 2000 sites located within the 5km (plus hydrological connectivity extension) Zone of Influence (ZoI) of the proposed development.

Natura 2000 site	Site Code	Approximate direct distance from site
Rye Water Valley / Carton SAC	001398	2.0 km
North Dublin Bay SAC	000206	18.5 km
South Dublin Bay SAC	000210	16.6 km
North Bull Island SPA	004006	18.5 km
South Dublin Bay and River Tolka Estuary SPA	004024	15.4 km

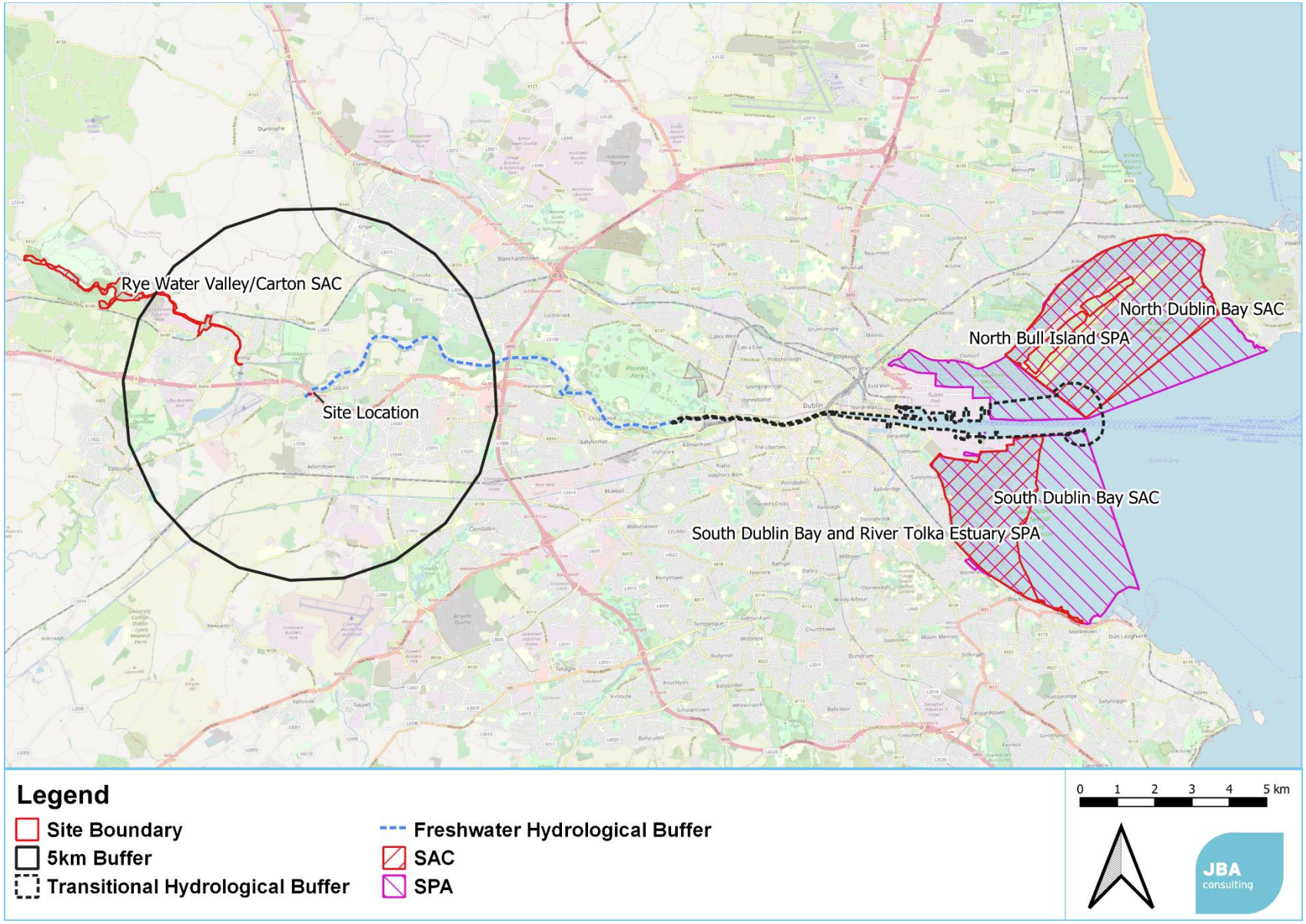


Figure 4-1: Natura 2000 sites and site location (OSM, 2021)

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

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
Rye Water Valley / Carton SAC	The Rye Water Valley / Carton SAC is a river valley site, which includes at its western end a large area of estate woodland and an artificial lake. The eastern section of the site includes a section of railway, canal and aqueduct; it continues as far as Leixlip town. The importance of the site lies in the presence of a number of rare plant and animal species and a rare habitat, i.e. thermal, mineral, petrifying spring. The spring gives rise to a calcareous marsh, the habitat for *Vertigo angustior* and *Vertigo moulinsiana*. This marsh is species-rich and holds a number of plant and insect species which are rare or locally uncommon in Ireland. Four Red Data Book plant species have been recorded from the site, two of which, *Hypericum hirsutum* and *Viola hirta* are legally protected. The woods at the eastern end of the site are also of some ornithological interest (NPWS, 2019).	- Petrifying Springs* [1130] - Narrow-mouthed Whorl Snail (*Vertigo angustior*) [1014] - Desmoulin's Whorl Snail (*Vertigo moulinsiana*) [1016] (NPWS, 2020)	Continuous urbanisation: Moderate impact (outside) Roads, motorways: Low impact (outside)# (Full list of threats / pressures - NPWS, 2019)
North Dublin Bay SAC	The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port during the 18th and 19th centuries. The seaward side of the island has a fine sandy beach. A substantial area of shallow marine water is included in the site. The interior of the island is excluded from the site as it has been converted to golf courses. Nature conservation is a main land use within the site. The North Bull Island dune system is one of the most important systems on the east coast and is one of the few in Ireland that is actively accreting. It possesses extensive and mostly good quality examples of embryonic, shifting marram and fixed dunes, as well as excellent examples of humid dune slacks. Both Atlantic and Mediterranean salt marshes are well represented, and a particularly good marsh zonation is shown. The salt marshes grade into mudflats and sandflats, some of which are dominated by annual Salicornia species. Petalwort (*Petalophyllum ralfsii*) occurs at its only known station away from the western seaboard (NPWS, 2018a).	- Mudflats and sandflats not covered by seawater at low tide [1140] - Annual vegetation of drift lines [1210] - *Salicornia* and other annuals colonising mud and sand [1310] - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] - Mediterranean salt meadows (*Juncetalia maritimi*) [1410] - Embryonic shifting dunes [2110] - Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] - Humid dune slacks [2190] - Petalwort (*Petalophyllum ralfsii*) [1395] (NPWS, 2013a)	Urbanised areas, human habitation: High impact (outside) Walking, horse-riding and non-motorised vehicles: High impact (inside)# Antagonism with domestic animals: High impact (inside)# (Full list of threats / pressures - NPWS, 2018a)
South Dublin Bay SAC	This intertidal site extends from the South Wall at Dublin Port to the West Pier at Dun Laoghaire, a distance of c. 5	- Mudflats and sandflats not covered by seawater at low tide [1140]	Urbanised areas, human habitation: High impact (outside)

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
	km. Several permanent channels exist, the largest being Cockle Lake. A small sandy beach occurs at Merrion Gates, while some bedrock shore occurs near Dun Laoghaire. A number of small streams and drains flow into the site. The designated site possesses a fine and fairly extensive example of intertidal flats. Sediment type is predominantly sand, with muddy sands in the more sheltered areas. A typical macro-invertebrate faunal assemblage exists within the SAC. The SAC has the largest stand of Dwarf Eelgrass (*Zostera nolti*) on the east coast (NPWS, 2018b).	- Annual vegetation of drift lines [1210] - *Salicornia* and other annuals colonising mud and sand [1310] - Embryonic shifting dunes [2110] (NPWS, 2013b)	Paths, tracks, cycling tracks: Moderate impact (inside)# Walking, horse-riding and non-motorised vehicles: High impact (inside)# Discharges: Moderate impact (both) (Full list of threats / pressures - NPWS, 2018b)
North Bull Island SPA	The North Bull Island sand spit is a relatively recent depositional feature, formed as a result of improvements to Dublin Port. The site is among the top ten sites for wintering waterfowl in the country. It supports internationally important populations of Brent Goose and Bar-tailed Godwit and is the top site in the country for both of these species. A further 14 species have populations of national importance, with particular notable numbers of Shelduck, Pintail, Grey Plover, and Red Knot. The SPA is a regular site for passage waders such as Ruff, Curlew Sandpiper and Spotted Redshank. The site supports Short-eared Owl in winter (NPWS, 2018c).	- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] - Shelduck (*Tadorna tadorna*) [A048] - Teal (*Anas crecca*) [A052] - Pintail (*Anas acuta*) [A054] - Shoveler (*Anas clypeata*) [A056] - Oystercatcher (*Haematopus ostralegus*) [A130] - Golden Plover (*Pluvialis apricaria*) [A140] - Grey Plover (*Pluvialis squatarola*) [A141] - Red Knot (*Calidris canutus*) [A143] - Sanderling (*Calidris alba*) [A144] - Dunlin (*Calidris alpina*) [A149] - Black-tailed Godwit (*Limosa limosa*) [A156] - Bar-tailed Godwit (*Limosa lapponica*) [A157] - Curlew (*Numenius arquata*) [A160] - Redshank (*Tringa totanus*) [A162] - Turnstone (*Arenaria interpres*) [A169] - Black-headed Gull (*Chroicocephalus ridibundus*) [A179] - Wetland and Waterbirds [A999] (NPWS, 2015a)	Urbanised areas, human habitation: High impact (outside) Walking, horse-riding and non-motorised vehicles: High impact (inside)# (Full list of threats / pressures - NPWS, 2018c)
South Dublin Bay and River Tolka	This designated site comprises a substantial part of Dublin Bay. It includes virtually all of the intertidal area in the south bay, as well as much of the Tolka Estuary to the	- Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] - Oystercatcher (*Haematopus ostralegus*) [A130]	Urbanised areas, human habitation: High impact (outside)

Site Name	Brief	Qualifying Interests	Project Relevant Threats / Pressures: Impact (Source)
Estuary SPA	north of the River Liffey. A portion of the shallow bay waters is also included. The sediments are predominantly well-aerated sands. The sands support the largest stand of Dwarf Eelgrass on the east coast of Ireland. Sediments in the Tolka Estuary vary from soft thixotropic muds with a high organic content in the inner estuary to exposed, well aerated sands off the Bull Wall. The site possesses extensive intertidal flats which support wintering waterfowl which are part of the overall Dublin Bay population. It regularly has an internationally important population of Brent Geese, which feeds on Dwarf Eelgrass in the autumn. It has nationally important numbers of a further 6 species including: Oystercatcher, Ringed Plover, Red Knot, Sanderling, Dunlin and Bar-tailed Godwit. It is an important site for wintering gulls, especially Black-headed Gull and Common Gull (*Larus canus*). South Dublin Bay is the premier site in Ireland for Mediterranean Gull (*Larus melanocephalus*), with up to 20 birds present at times. Is a regular autumn roosting ground for significant numbers of terns, including Roseate Terns, Common Tern and Artic Tern (NPWS, 2018d).	- Ringed Plover (*Charadrius hiaticula*) [A137] - Grey Plover (*Pluvialis squatarola*) [A141] - Red Knot (*Calidris canutus*) [A143] - Sanderling (*Calidris alba*) [A144] - Dunlin (*Calidris alpina*) [A149] - Bar-tailed Godwit (*Limosa lapponica*) [A157] - Redshank (*Tringa totanus*) [A162] - Black-headed Gull (*Chroicocephalus ridibundus*) [A179] - Roseate Tern (*Sterna dougallii*) [A192] - Common Tern (*Sterna hirundo*) [A193] - Arctic Tern (*Sterna paradisaea*) [A194] - Wetland and Waterbirds [A999] (NPWS, 2015b)	Walking, horse-riding and non-motorised vehicles: High impact (inside)# (Full list of threats / pressures - NPWS, 2018d)

* = priority Annex I habitat

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

5 Other Relevant Plans and Projects

5.1 Cumulative Effects

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

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

- South Dublin County Council Development Plan 2016 - 2022
- Greater Dublin Drainage Strategy 2005
- River Basin Management Plan for Ireland 2018-2021
- Planning Applications

5.2 Plans

5.2.1 South Dublin County Council Development Plan 2016 - 2022

The South Dublin County Council (SDCC) Development Plan sets out an overall strategy for the proper planning and sustainable development of the County. The objectives include a target of increased population and continuing the consolidation of established urban areas, to support and facilitate economic activity and to promote the ease of movement by sustainable modes (walking, cycling and public transport). The Plan also aims to protect and enhance surface water quality, to support, improve and protect Natura 2000 sites, and to develop an integrated Green Infrastructure network to enhance biodiversity, provide accessible parks, open spaces and recreational facilities (SDCC, 2016a). The plan also states that work will be in conjunction with Irish Water to protect existing water and drainage infrastructure, to promote investments aiming to support environmental protection and facilitate the sustainable growth of the county (SDCC, 2016a).

A Screening for Appropriate Assessment was carried out on the plan. This concluded that there are no likely significant direct, indirect or secondary impacts of the project on any Natura 2000 sites (SDCC, 2016b), therefore the **South Dublin County Council (SDCC) Development Plan is not anticipated to contribute to cumulative or in-combination effects.**

5.2.2 Greater Dublin Drainage Strategy 2005

The Greater Dublin Drainage Strategy sets out the strategic planning for the development of waste water treatment in the Greater Dublin area in relation to the Ringsend WWTP Upgrade, Greater Dublin Drainage Project and associated wastewater network drainage projects (Irish Water, 2018). The Ringsend WWTP Upgrade includes plans to expand the WWTP to its ultimate capacity, together with associated network upgrades required. The Greater Dublin Drainage Project is planned to relieve both the Ringsend WWTP and network loading by construction of a new WWTP at Clonshaugh, an orbital sewer and provision of an outfall pipe discharging 1km north east of Ireland's Eye.

The Ringsend WWTP upgrade is in progress and carried out in stages, with an increased capacity of 400,000 PE by Q1 2021 and the ultimate capacity of 2.4 million PE to be in operation by 2024 (Irish Water, 2018).

The Greater Dublin Drainage Project is strategically important to the Dublin Region in that it will provide capacity for residential and commercial growth (Irish Water, 2018).

The Greater Dublin Drainage Strategy is not anticipated to contribute to cumulative or in-combination effects.

5.2.3 River Basin Management Plan for Ireland 2018-2021 (RBMP, 2018)

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

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

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

The ERBD Management Plans (2009-2015) and the River Basin Management Plan for Ireland (2018-2021) aim to improve the management and water quality of the Eastern RBD, and hence the River Boyne and Estuary. As part of the 2nd Cycle RBMP 2018-2021 regionalised administrative structures will be put in place to support implementation (e.g. river basin district characterisation, the development of programmes of measures, enforcement, public consultation and awareness activities). Additional arrangements will facilitate the input of communities at local catchment level.

The River Basin Management Plan for Ireland (2018-2021) is not anticipated to contribute to cumulative or on-combination effects.

5.3 Other Projects

Since February 2018, the projects listed below (Table 5-1), which are not retention applications, home extensions and/or internal alterations, have been granted planning permission in the locality of the proposed site

Table 5-1: Projects granted planning permission since February 2018 in vicinity of proposed site.

Planning Reference	Address	Application Status	Decision date	Summary of development
SD18A/0310	Ardeevin Avenue, Lucan, Co. Dublin	Grant Permission	15/05/2019	Construction of a 25 unit residential housing development on a site extending to 0.96 hectares to the north of the N4 Lucan by-pass and to the east (end of) Ardeevin Avenue, consisting of the following: 1 detached, two and a half storey 5 bedroom house (Type 1, 295sq.m); 1 detached, two and half storey 5 bedroom house (Type 1a, 270sq.m); 1 detached, two and a half storey 4 bedroom house (Type 1b, 270sq.m); 1 detached, two and a half storey 5 bedroom house (Type 1c, 280sq.m); 1 detached, two and a half storey 5 bedroom house (Type 1d, 270sq.m); 8 detached, two and a half storey houses (Type 2, 150sq.m each); a two storey, semi-detached block consisting of: 1 two bedroom house (Type 3, 70sq.m); 1 two bedroom house (Type 3a, 74sq.m), 10 semi-detached two and a half storey houses (Type 4, 150sq.m each); all associated site development works including landscaping works, public lighting, ground works, (reduction of existing site level), boundary treatment, roads, footpaths, foul drainage, surface water drainage including attenuation, water main and site entrance piers (with no gates).
SDZ20A/0005	Tobermaclugg Development Area, within Adamstown SDZ, Lucan, Co. Dublin.	Grant Permission	17/04/2020	Provision of a new public park, called 'Tobermaclugg Park' of approximately 3.4 Ha comprising of site development and landscape works. The proposed park will incorporate pedestrian pathways, maintenance access and routes, seating zones, areas for play and planting and all ancillary boundary treatments and entrances (to Tubber Lane Road, to Hallwell Residential Development, to the Airlie Heights public open space, to the Shackleton Residential Development and to Shackleton Drive), planting, necessary regrading works and realignment of portion of existing Tobermaclugg Stream; a total of six visitor car parking spaces are also proposed, located to the eastern boundary of the site along Shackleton Park.
SDZ18A/0002	Tobermaclugg Development Area, within Adamstown SDZ, Lucan, Co. Dublin.	Grant Permission	15/03/2018	Permission for development of 268 dwellings comprising of the following: 184 two and three storey houses consisting of 102 three-bedroom houses (ranging from 111sq.m to 157sq.m), 67 four-bedroom houses (ranging from 135sq.m to 154sq.m) and 15 five bedroom houses (ranging from 169sq.m to 176sq.m) with associated private gardens, car parking and bin storage areas, in a mix of detached, semi-detached and terraced units; Block 1 (931sq.m gross floor area): four storey L-shaped terraced block consisting of 8 duplex units comprising 4 two bedroom duplex units (ranging from 93sq.m to 100sq.m) and 4 three bedroom duplex units (ranging from 107sq.m to 111sq.m); Block 2 (1032sq.m gross floor area): three storey terraced block consisting of 12 duplex/apartment units comprising 6 own door two bedroom apartments at ground floor (ranging from 88sq.m to 91sq.m) and 6 three bedroom duplexes over (ranging from 118sq.m to 120sq.m); Block 3 (1192sq.m gross floor area): three storey terraced block consisting of 14 duplex/apartment units comprising 7 own door two bedroom apartments at ground floor (ranging from 81sq.m to 89sq.m) and 7 three bedroom duplexes over (ranging from 113sq.m to 118sq.m); Block 4, 5 and 6 (488sq.m each): four storey block consisting of 4 duplex units comprising 2 two bedroom duplex units (101sq.m) and 2 three bedroom duplex units (117sq.m) and Block 7 (4110sq.m gross floor area): four storey block consisting of 38 apartment units comprising 8 one bedroom units (54sq.m) and 30 two-bedroom units (ranging from 82sq.m to 90sq.m). Block 7 includes a crèche (652sq.m) and associated play areas. Access will be provided from 3 access points from the approved east-west distributor road that bounds the site to the north ('Shackleton Drive'). The current application includes an additional section of Shackleton Drive (c.200 metres) that is within the applicants' ownership and will make provision for vehicular traffic, online bus services, car parking, pedestrian footpaths and cycle paths to tie in with the approved Shackleton Drive permitted under SDZ16A/0003. (Note: This section of road was previously permitted under Reg Ref: SDZ17A/0006 to facilitate access to lands in Development Area 5 Tubber Lane). The development also includes part (c.450metres) of the north-south road (referred to as 'Central Boulevard' in the Planning Scheme) that will replace Tandy's Lane along the eastern boundary of the site. This road will make provision for vehicular traffic, bus lanes/stops, pedestrian footpaths, cycle paths and 2 access points into the current application site. Permission is also sought for 552 parking spaces, bin storage areas, communal and private

Planning Reference	Address	Application Status	Decision date	Summary of development
				open spaces (including balconies, terraces, gardens, courtyards and roof terraces), hard and soft landscaping, boundary treatment and all associated site and development works. One dwelling and associated outbuilding (totalling 94sq.m) located to the south eastern corner of the site, at the bend of Tandy's Lane are to be demolished to accommodate the development. Temporary permission for 3 years is sought for two 4.5m high triangular pylon marketing signs to be erected in the north eastern and south eastern corner of the site addressing 'Shackleton Drive'/Central Boulevard and Central Boulevard respectively. At this site (c.8.85 hectares) at Adamstown, Lucan Co. Dublin. The application relates to part of the lands within Adamstown SDZ Planning Scheme (2014) known as Tobermaclugg Village (Development Area 4) bounded to the north by approved east-west distributor road (approved under Reg Ref: SDZ16A/0003 - under construction) to the south by the proposed Airlie Park Public Open Space, to the east by a new road referred to as Central Boulevard and to the west by undeveloped lands designated in the Planning Scheme as Tobermaclugg Local Centre.
SDZ18A/0014	Adamstown, Lucan, Co. Dublin	Grant Permission	12/02/2019	Provision of new public park, called Airlie Park of approximately 10.95Ha, comprising of a full size all-weather playing pitch (c.135 x 90m), together with 6 18m high columns, each with 4 flood light fittings and 3m high double wire ball-stop sports fencing surrounding the proposed all-weather playing pitch, together with 16m high ball-catch fencing behind the two goal areas; a full size cricket ground (c.140 x 158m); 2 cricket practice areas, including 3.6m high netting enclosing the cricket practice areas; 2 basketball courts, together with 6 10m high columns with between 2 and 4 flood light fittings on each column and 3m high double wire ball-stop sports fencing surrounding the proposed basketball courts; a half basketball court; 2 tennis courts, together with 6 10m high columns with between 2 and 4 flood light fittings on each column and 3m high double wire ball-stop sports fencing surrounding the proposed tennis courts; 1 storey building with changing facilities, equipment storage and a coffee dock (c.322sq.m.); 2 natural play / neighbourhood play areas (NEAPs); 2 natural play / local play areas (LEAPs); an exercising area; teenager's social area; car park with 56 car parking spaces served by two new vehicular entry / egress points off Adamstown Boulevard (permitted under ref. SDZ18A/0009; 70 bicycle parking spaces; redistribution and re-profiling of c.179,000 cubic metres of soil spoil from drainage, services and foundations from within the Adamstown Strategic Development Zone; demolition of existing single storey house called Airlie Lodge (c.110sq.m.) and a detached single storey house at the former Airlie Farm (c.125sq.m.) and collection of ancillary farm buildings at the former Airlie Farm (3,210sq.m.); all ancillary site development and landscaping works, including public lighting, seating, pathways, planting, surface water drainage and boundaries and location for park maintenance facility including a 2m high feature park entrance detail to the eastern site boundary inside planned car park; part of the subject site is within the curtilage of Airlie House (Protected Structure) at Airlie Lodge and former Airlie Farm, both at Tandy's Lane, Lucan and including other lands east and west of Tandy's Lane, in the townlands of Finnstown, Aderrig and Doddsborough at Adamstown which are bounded generally to the north by Tobermaclugg Village development area and the Shackleton Phase 2 residential development (ref. SDZ18A/0002), to the east by the alignment of the permitted Adamstown Boulevard (ref. SDZ18A/0009), to the south by the undeveloped lands in the Aderrig Development Area; no works are proposed to the Protected Structure.
SDZ17A/0006 -> SDZ18A/0005 (amendments)	Tubber Lane, Adamstown, Lucan, Co. Dublin.	Grant Permission	17/07/2018	176 residential units including 329 car parking spaces and all site development works including the development of new internal roads and footpaths, site access, pedestrian and cyclists facilities, public open space with a total area of 0.31 hectares, landscaping, foul and surface water drainage and boundary walls and fences. Private and semi-private open space to serve the proposed units will be provided in the form of balconies, patios and gardens. The development will also comprise of a new section of Adamstown Drive Road (approximately 180 metres in length) which will provide access to serve the residential development. The new proposed road section will extend from a section of Adamstown Drive permitted under Reg Ref No: SDZ16A/0003 which connects to Dodsboro

Planning Reference	Address	Application Status	Decision date	Summary of development
				Road/Tandy's Lane in the east. The new section of Adamstown Drive will make provision for vehicular traffic, bus services, on street parking and separated cycle track and footpaths. The site will be accessed via an access point in the south of the application site off Adamstown Drive. The development consists of 122 houses (semi-detached, terraced and town) and 54 apartments (Block E and F), to be provide as follows: (i) 20 4-bed, semi-detached houses, 133sq.m GFA (Type A); (ii) 23 4-bed, 3 storey town houses, 154sq.m GFA (Type B); (iii) 39 3-bed terraced houses, 116sq.m GFA (Type C); (iv) 40 3-bed terraced houses, 114sq.m GFA (Type D); (v) Apartment Block E containing 18 apartments including 4 1-bed apartments, 10 2-bed apartments and 4 3-bed apartments (123-140); (vi) Apartment Block F containing 36 apartments including 9 1-bed apartments, 26 2-bed apartments and 1 3-bed apartments (141-176) all on a site located to the southeast of Tubber Lane Road and in the northeast of the Adamstown SDZ lands. This application relates to development within the Adamstown Strategic Development Zone (SDZ) and is subject to the Adamstown Planning Scheme 2014. This development has a total site area of 4.72 hectares and is located entirely within the boundary of Adamstown Strategic Development Zone.

5.4 Summary

The County Development Plan, RBMP and projects near the proposed project are considered in combination with the currently proposed project in the Screening Assessment section below.

6 Screening Assessment

6.1 Introduction

This screening exercise will focus on assessing the likely adverse effects of the project on the Natura 2000 sites identified in Section 4 above.

This section identifies the potential impacts which may arise as result of the proposed project. It then goes on to identify how these impacts could potentially impact on Natura 2000 sites listed in Table 4-1. The significance of potential impacts is also assessed, with any potential in-combination effects also identified.

6.2 Assessment Criteria

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

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

The proposed project is not anticipated to impact on the qualifying interests of any of the identified SACs or SPAs due to the absence of pathways between any potential source of impact and receiving environment in the case of the Natura 2000 sites. The rationale for excluding impacts via the main pathways is given in more detail in the following sections.

6.2.2 Surface Water Pathways

The Dublin Bay based Natura 2000 sites are hydrologically connected to the proposed site (Figure 6-1). It is important to note the small scale of the parking development, and as such any polluting substances on-site would also be present in small scale (i.e. smaller numbers and size of machines and construction materials such as concrete and hydrocarbons); and thus, any polluting event on-site would be constrained to a minor event. Furthermore, in the scenario that any pollutants discharge into the local watercourse (Lucan Stream), the polluting substance would undergo a high level of dilution by larger freshwater systems (River Liffey) along an approximate 12.5km hydrological section before entering the estuarine section of the River Liffey, where it would be further diluted for another approximate 9.5km hydrological stretch before entering the coastal waters containing the Dublin Bay Natura 2000 sites.

Operational impacts through the surface water pathway are not anticipated given the suitably detailed drainage design outlined below:

- The drainage design will encompass the specification and design of drainage systems based on site/soil investigation and testing in accordance with BRE Digest 365. The first preference for the drainage system is permeable pavement with a soakaway and overflow to existing network. If this is deemed unfeasible, the drainage design will incorporate an attenuation system, with petrol interception and connection to the existing drainage network.
- Testing and investigation in conjunction with permeable pavement manufacturers recommendations will determine overall formation level. It is envisaged that a type A; no infiltration or a type B, partial infiltration system will be specified for this pavement at detailed design stage due to desk study investigation of soil type.
- Any soakaway design (if deemed suitable) will be designed in accordance with CIRIA 735 SUDS manual.
- Design requirements which will be met for any potential soakaway below:

  - At least 5m from any building, public sewer, road boundary or structure.

  - Not in such a position that the ground below foundations is likely to be adversely affected.

  - 10m from any sewage treatment percolation area and from any watercourse / floodplain.

  - Soakaways to include an overflow connection to a public surface water sewer where possible.

Any attenuation will be designed such that no additional flows requirements will be placed on the existing network. An Arch system, rather than geocellular, will be used to attenuate flows if required.

Given that the Rye Water Valley / Carton SAC is not located within the same surface water sub-catchment as the proposed site, Liffey_SC_090 (Figure 6-1 overleaf), it is not anticipated that this site will experience any adverse impacts. Therefore, the proposed project is not anticipated to have any impact on the qualifying interests of the SACs and SPAs via surface water pathways.

Table 6-1 overleaf provides a summary of the screening rational for the surface water pathway.

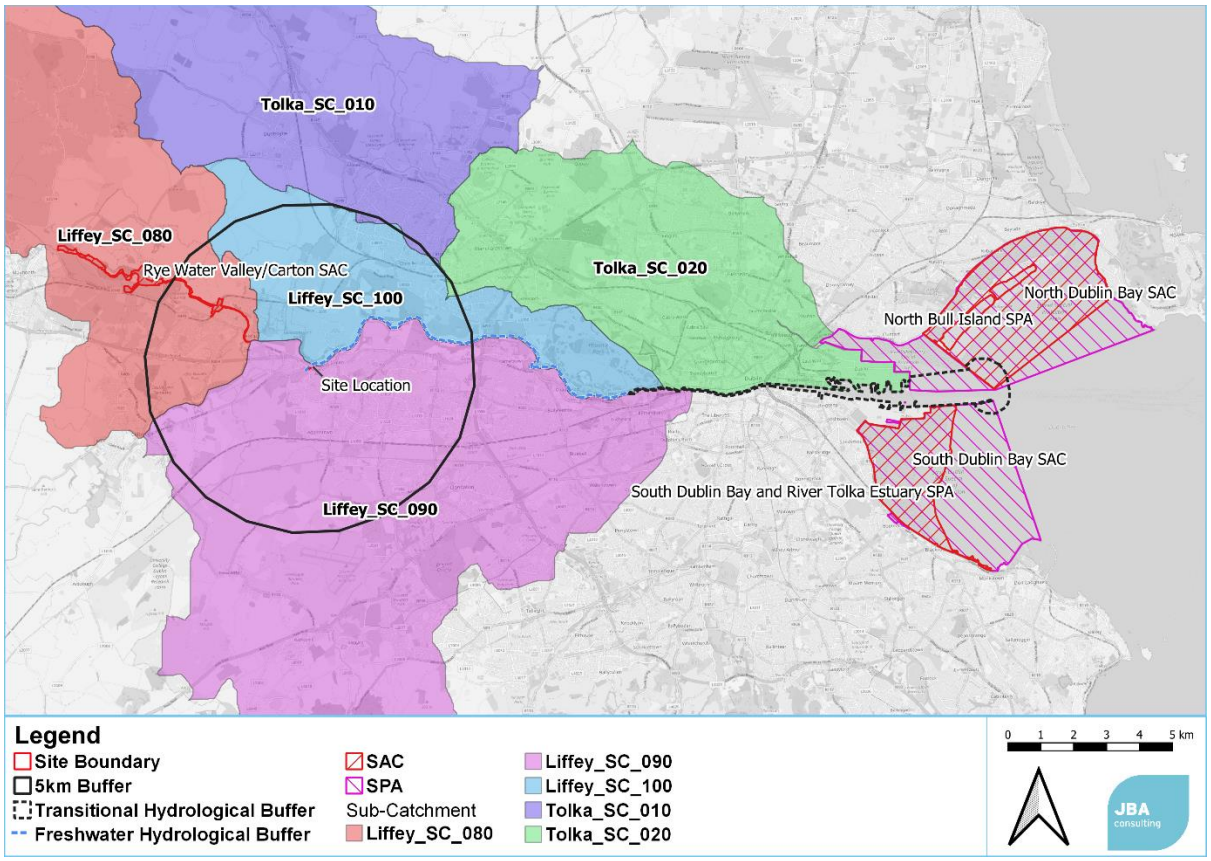


Figure 6-1: Site location and Natura 2000 sites, with surface water sub-catchment (OSM, 2021)

Table 6-1: Surface water pathway screening summary for Natura 2000 sites

Natura 2000 site	Screening outcome for surface water pathways	Rationale
North Dublin Bay SAC South Dublin Bay SAC North Bull Island SPA South Dublin Bay and River Tolka Estuary SPA	No significant effect **(Screened out)**	Distance / high level of dilution by larger freshwater system and transitional / coastal waters
Rye Water Valley / Carton SAC	No significant effect **(Screened out)**	Lack of direct hydrological connectivity

6.2.3 Groundwater

The site is located within the Dublin Urban - IE_EA_G_008 groundwater body, which underlies most of the greater Dublin area. The site shares this groundwater body with all of the Natura 2000 sites within the ZoI.

The bedrock underlying the proposed site is comprised of dark-grey to black, fine-grained, occasionally cherty, micritic limestones that weather paler, usually to pale grey. There are also rare dark coarser grained calcarenitic limestones, sometimes graded, and interbedded dark-grey calcar. This bedrock is overlain with gravelly alluvium soil, with low subsoil permeability characteristics. As result of the above characteristics the site's aquifer vulnerability status is rated as 'High' (Figure 6-2). The aquifer within the underlying bedrock is considered to be locally important, with moderate productivity, though only in local zones. Therefore, the aquifer has a limited and relatively poorly connected network of fractures, fissures and joints, giving a low fissure permeability which tends to decrease further with depth. Generally, the lack of connection between the limited fissures results in relatively poor aquifer storage and flow paths that may only extend a few hundred metres (GSI, 2021). Therefore, impacts via a groundwater pathway are not anticipated given the distance to the Natura 2000 sites.

Regarding the groundwater to surface water impact pathway, the characteristics of the underlying aquifer means it is likely to rapidly discharge to the nearby watercourses, i.e. the Lucan Stream or River Liffey, within the short flow paths present in the local bedrock (GSI, 2021). Therefore, there is the potential for groundwater to surface water impacts for the Dublin Bay Natura 2000 sites. However, any pollution event is unlikely to reach the Natura 2000 sites at toxic levels given sediment and aquifer contamination retention, as well as the high levels of dilution (outlined in the surface water section) that would be experienced by pollutant as it travels to the Dublin Bay Natura 2000 sites (Figure 6-3 overleaf).Table 6-2 overleaf provides a summary of the screening rational for the groundwater pathway.

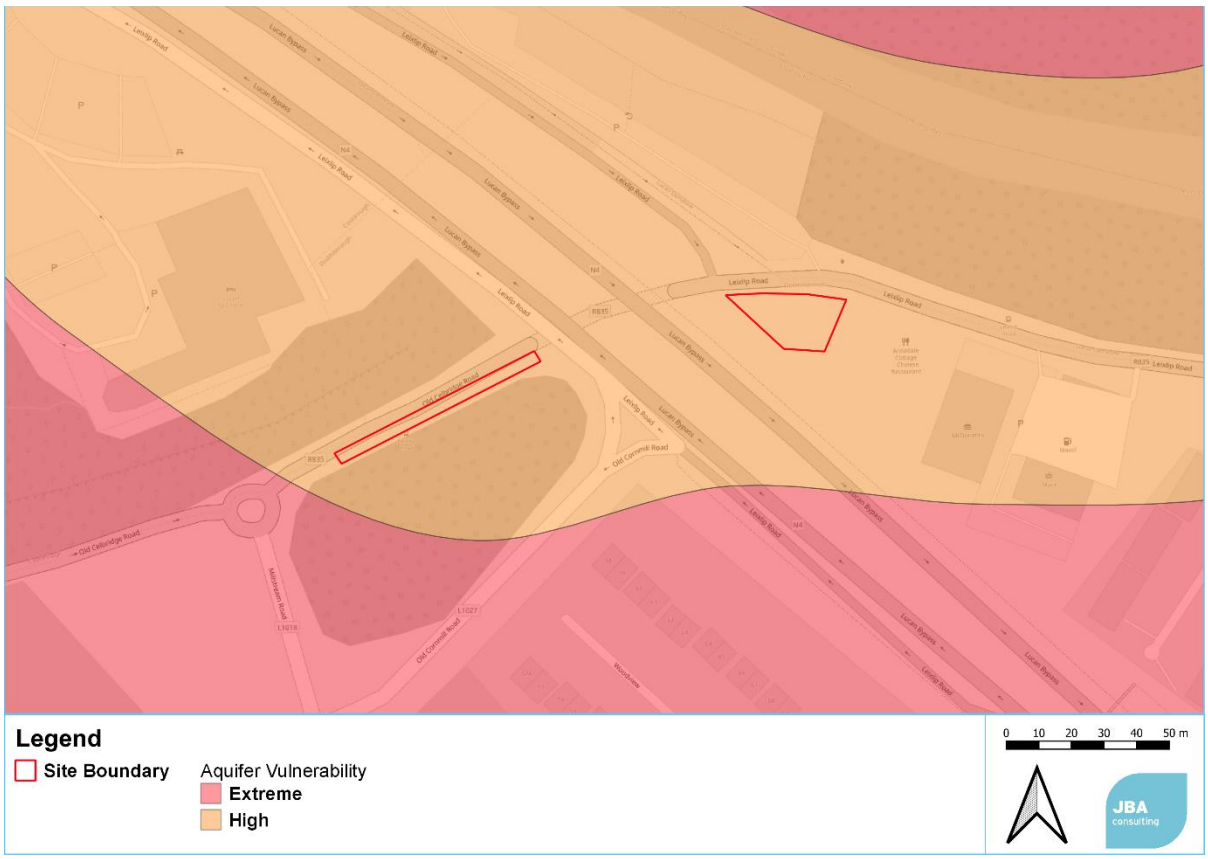


Figure 6-2: Aquifer vulnerability of proposed site (OSM, 2021)

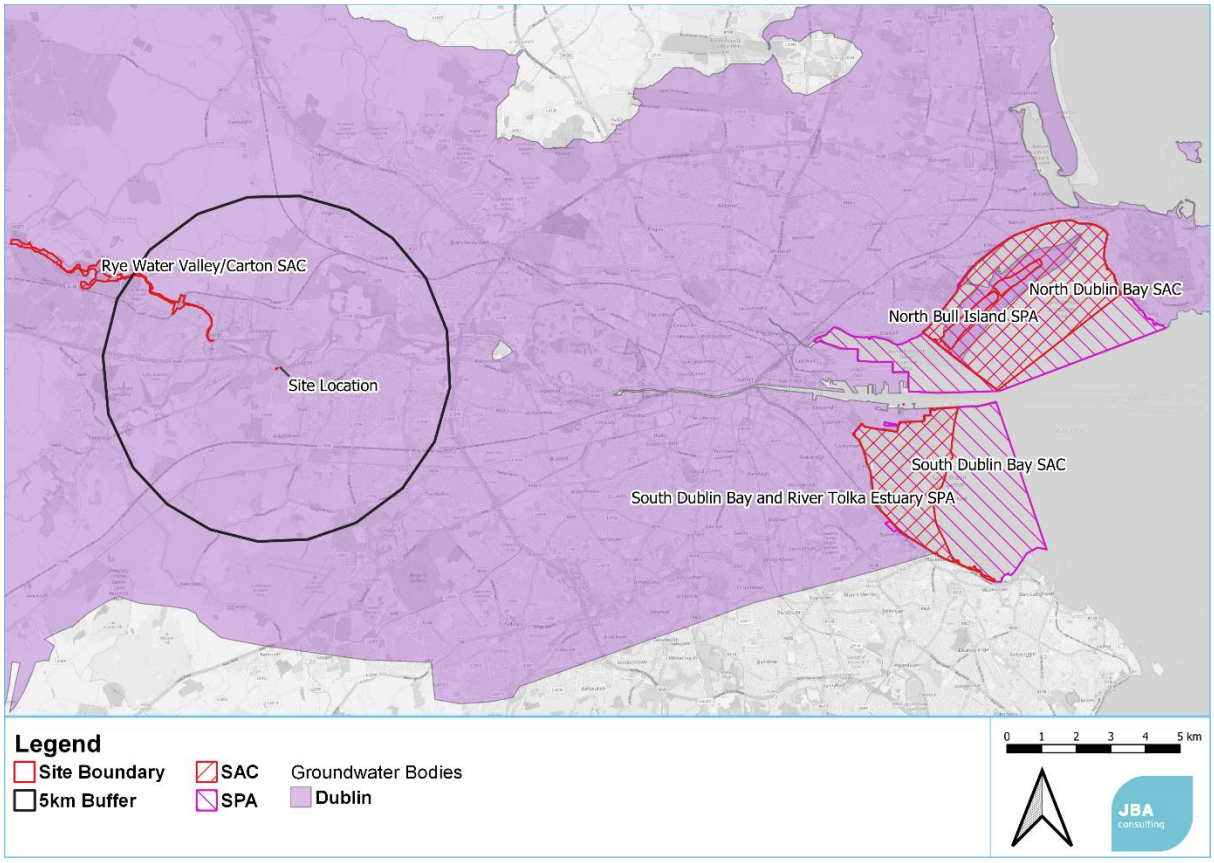


Figure 6-3: Site location and Natura 2000 sites, with groundwater body connectivity (OSM, 2021)

Table 6-2: Groundwater pathway screening summary for Natura 2000 sites

Natura 2000 site	Screening outcome for groundwater pathways	Rationale
Rye Water Valley / Carton SAC North Dublin Bay SAC South Dublin Bay SAC North Bull Island SPA South Dublin Bay and River Tolka Estuary SPA	No significant effect **(Screened out)**	Sediment and aquifer contamination retention Distance / high level of dilution by larger freshwater system and transitional / coastal waters

6.2.4 Land and Air

The loss or degradation of supporting habitats outside the identified Natura 2000 sites via land- and air-based impacts could have potential adverse impacts on a number of the QIs associated with these Natura 2000 sites.

Land (physical, visual and noise disturbance)

Direct physical impacts and indirect impacts, such as visual and noise impacts, have the potential to physically disturb habitats as well as the floral and faunal species within them. This development will not result in any physical land-take or disturbance from the Natura 2000 sites within the ZoI, nor will it result in any visual or noise disturbance to the QIs due to the distances between the site and the Natura 2000 sites.

Air Pollution

Dust release and vehicle emissions can sometimes travel up to 10km and could potentially affect the riparian habitat of the two Whorl snails in the Rye Water Valley/Carton SAC by enrichment. Typically

dust emissions are divided into settleable dust, respirable dust and PM10's and PM2.5 (10 um and 2.5 um respectively). Settleable dust will, depending on its size and weather conditions, settle out close to the source. The respirable fraction can travel a little further but typically settles out close to production. The lighter smaller PM10 and PM 2.5 fraction can travel. The distance and direction of travel is dependent upon wind speed and direction. The proposed site has a south-west prevailing wind year-round (Windfinder- Casement Aerodrome, 2021), therefore, any dust generated on-site will most likely be transported towards just the Dublin Bay Natura 2000 sites; and not towards the Rye Water Valley/Carton SAC. Natural barriers to PM 10 dispersion are treelines and hedgerows. As there is 2.0km of largely agricultural land with treelines, hedgerows and wooded areas between the site and the SAC, as well as woodlands bordering the watercourse of the Rye Water, any further dispersion of particles will be ameliorated. Furthermore, the small scale and nature of the project's construction will only generate negligible quantities of dust.

Regarding the Dublin Bay Natura 2000 sites, given that these sites are beyond the 10km dust settlement zone impacts via the air pathway in regard to dust, adverse impacts are not anticipated from the proposed works. Additionally, the QIs of the Dublin Bay Natura 2000 sites are not sensitive to dust-based pollution. Table 6-3 provides a summary of the screening rational for the land and air pathway.

Table 6-3: Land and air pathway screening summary for Natura 2000 sites

Natura 2000 site	Screening outcome for land and air pathways	Rationale
North Dublin Bay SAC South Dublin Bay SAC North Bull Island SPA South Dublin Bay and River Tolka Estuary SPA	No significant effect **(Screened out)**	No physical, visual or noise disturbance due to the distances between the site and the Natura 2000 sites Scale and nature of project will only generate negligible quantities of dust Located beyond the 10km dust settlement zone Respective QIs are not sensitive to dust-based pollution
Rye Water Valley / Carton SAC	No significant effect **(Screened out)**	No physical, visual or noise disturbance due to the distances between the site and the Natura 2000 sites Scale and nature of project will only generate negligible quantities of dust 2.0km of natural dust barriers (hedgerows, treelines and woodland) Not located within the path of the site's prevailing wind

6.2.5 Summary

Due to the proposed site's appropriate operational drainage systems; and its distance from the Natura 2000 sites within the ZoI, impacts via surface water, groundwater (to surface water) and land pathways to the SACs or SPAs are not anticipated.

6.2.6 Cumulative Impact

Given that the proposed development has no anticipated significant impacts on the Natura 2000 sites within the ZoI, then there cannot be any cumulative or in-combination impacts with the projects or plans identified in Section 5.

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

Project Elements	Comment
Size and scale	This project involves the development of additional parking facilities to replace existing facilities at the Lucan Demesne entrance. Existing parking facilities at Lucan Demesne are to be removed to allow for the provision of a more welcoming entrance to Lucan Demesne to preserve and provide for open space and recreational activities. It is proposed to re-locate parking to 2 no. new sites in the close vicinity to Lucan Demesne. Both sites are to be designed with the use of SUDs to provide both drainage and public amenity as a priority. Site A is proposed to provide on-street parking on the westbound lane of the R835, to the west of the N4 overbridge. Site A is proposed to include for 7 no. on-street parking spaces. Drawing attached. Site B is proposed to provide off-street parking by means of a small car-park. Site B is located off the westbound lane of the R835 directly to the east of the N4 overbridge. Site B is proposed to provide 7 no. car parking spaces, including 2 no. Wheelchair Accessible spaces.
Land-take	There will be no direct land take from any of Natura 2000 sites.
Distance from Natura 2000 site or key features of the site	The Natura 2000 sites and their proximity to the proposed site: - Rye Water Valley / Carton SAC = 8.4 km - South Dublin Bay SAC = 15.2 km - South Dublin Bay and River Tolka Estuary SPA = 15.2 km - North Bull Island SPA = 18.2 km - North Dublin Bay SAC = 18.2 km
Resource requirements (water abstraction etc.)	There will be no groundwater abstraction requirements.
Emissions (disposal to land, water or air)	Construction Emissions: It is important to note the small scale of the parking development, and as such any polluting substances on-site would also be present in small scale (i.e. smaller numbers and size of machines and construction materials such as concrete and hydrocarbons); and thus, any polluting event on-site would be constrained to a minor event. Furthermore, in the scenario that any pollutants discharge into the local watercourse (Lucan Stream), the polluting substance would undergo a high level of dilution by larger freshwater systems (River Liffey) along an approximate 12.5km hydrological section before entering the estuarine section of the River Liffey, where it would be further diluted for another approximate 9.5km hydrological stretch before entering the coastal waters containing the Dublin Bay Natura 2000 sites. Air-based construction emissions from the proposed development are not anticipated to impact the QIs of the Natura 2000 sites within the ZoI due to prevailing wind; natural dust barriers; minimal dust generation and the 10km dust settlement zone. Operational Emissions: Operational impacts through the surface water pathway are not anticipated given the suitably detailed drainage design outlined below:

	- The drainage design will encompass the specification and design of drainage systems based on site/soil investigation and testing in accordance with BRE Digest 365. The first preference for the drainage system is permeable pavement with a soakaway and overflow to existing network. If this is deemed unfeasible, the drainage design will incorporate an attenuation system, with petrol interception and connection to the existing drainage network. - Testing and investigation in conjunction with permeable pavement manufacturers recommendations will determine overall formation level. It is envisaged that a type A; no infiltration or a type B, partial infiltration system will be specified for this pavement at detailed design stage due to desk study investigation of soil type. - Any soakaway design (if deemed suitable) will be designed in accordance with CIRIA 735 SUDS manual. - Design requirements which will be met for any potential soakaway below: • At least 5m from any building, public sewer, road boundary or structure. • Not in such a position that the ground below foundations is likely to be adversely affected. • 10m from any sewage treatment percolation area and from any watercourse / floodplain. • Soakaways to include an overflow connection to a public surface water sewer where possible. Any attenuation will be designed such that no additional flows requirements will be placed on the existing network. An Arch system, rather than geocellular, will be used to attenuate flows if required. Air-based operational emissions from the proposed development are not anticipated to impact the QIs of the Natura 2000 sites within the ZoI.
Excavation requirements	Construction phase excavation depths will not exceed 4m in depth.
Transportation requirements	Levels of traffic will increase along the Leixlip Road during the construction of these two parking developments due to the presence of the construction vehicles. During operation the area will see a minor increase in traffic due to development of new parking infrastructure.
Duration of construction, operation, decommissioning etc.	Construction will last between approximately 2-4 months. Operation will be permanent, and no decommissioning is anticipated.
Other	None

6.2.8 Description of likely changes to the Natura 2000 sites

Potential Impact	Comments
Reduction of habitat area	There will be no temporary or permanent reduction in habitat area for any of the Natura 2000 sites.
Disturbance to key species	There will be no temporary or permanent disturbance to key

Potential Impact	Comments
	species within any of the Natura 2000 sites.
Habitat or species fragmentation	There will be no temporary or permanent habitat or species fragmentation within any of the Natura 2000 sites.
Reduction in species density	There will be no temporary or permanent reduction in species density within any of the Natura 2000 sites.
Changes in key indicators of conservation value (water quality etc.)	There will be no temporary or permanent changes in key indicators of conservation value (surface water, groundwater and air quality).
Climate change	N/A

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

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

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

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

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

Based upon best scientific judgement, significant impacts are not anticipated from the elements mentioned above; and no significant gaps in knowledge of the scale or magnitude of potential impacts from the proposed site exist.

6.3 Concluding Statement

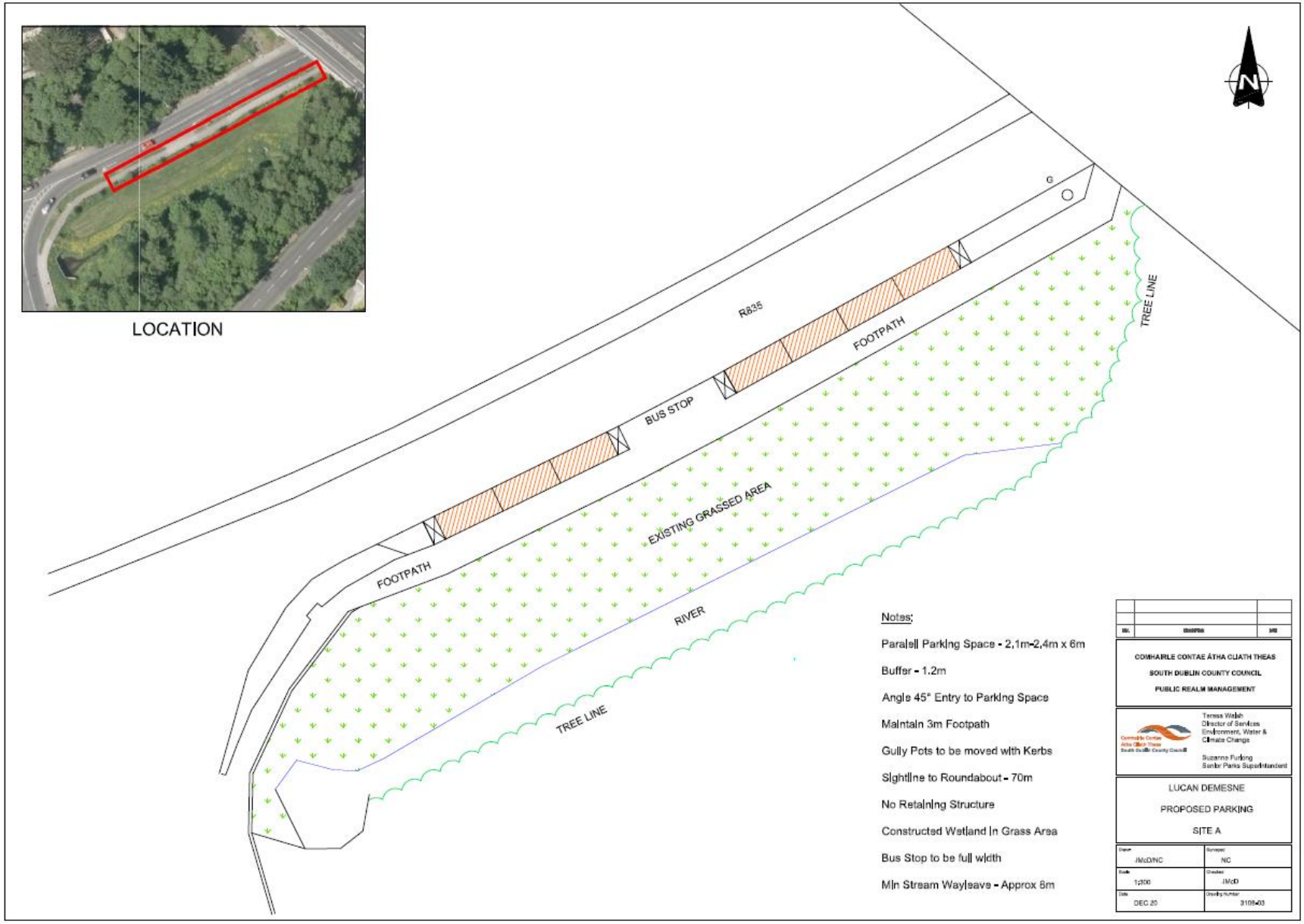
Following this initial screening of the proposed parking development at Lucan Demesne, Leixlip Road, Lucan, Co. Dublin, it can be concluded that significant impacts are not anticipated via surface water, groundwater, or land/air pathways on the following Natura 2000 sites:

- Rye Water Valley/Carton SAC (001398)
- North Dublin Bay SAC (000206)
- South Dublin SAC (000210)
- North Bull Island SPA (004006)
- South Dublin Bay and River Tolka Estuary (004024)

If any changes occur in the design of these works, a new Screening for Appropriate Assessment is required.

Appendices

A Site A Layout Plan



B Site B Layout Plan

C Habitat Map

FGJ-JBAI-XX-XX-RP-BD-0001-S3-P02-SDCC_Lucan_Demesne_Parking_AA_Screening

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